

## Modernization and Technology

### Situation Overview:

- A. *Detail the farm's reasoning behind the decision to pursue a modernization plan.* At Kurtland Farm, we wanted to be a profitable, economically viable business for the long term. Quality of life is important to us, as is providing a business opportunity for the next generation. We also wanted to focus on our commitment to environmental stewardship and connecting with our consumers.
- B. *List the key variables that impacted the decision to move ahead with the plan.* After completing the feasibility study, we had many answers to the questions that were critical in the decision making process within the business. The feasibility study clearly showed that in order to grow the business, expansion was needed. It also supported the satellite dairy expansion project.
- C. *The farm was modernized in the following areas, during this project:*
- 208 cow free stall barn bedded with separated manure solids designed and built by Whitehorse Construction
  - 4- LELY A4 Astronaut robotic milking system
  - Mueller Refrigeration system
  - Sturdy Built gates and stalls
  - Keystone precast alley scraper gutters
  - Jamesway alley scrapers
  - Autovent ventilation
  - EYS screw press separator
  - Daritech manure compost drum
  - Manure lagoon with liner and cover
  - 40' x 80' manure solids storage building

### Challenges and Opportunities:

D. *What were the different options the Transformation Team considered as they worked together to pursue this plan? Please describe.* Despite the improvements that were made through 2009, as detailed in the business plan chapter, we still were not labor efficient. Our cost of production was not viable, long term, and there was not a cushion in a bad year. There did not seem to be a future economic return. We were not competitive enough and the facilities weren't economically efficient and were compromising animal health. Essentially, we were up against the ceiling. Our cull rate was still too high as cow comfort was inadequate in the tie stall facility. This meant we could not capture the premiums from marketing the higher value replacements as we needed them to keep the barn full.

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With the current facilities, we felt our family's next generation could not continue to farm, even if they wanted to stay in the dairy business.

In August of 2009, we decided to look seriously at Option B. A potential building site on the farm we purchased in 2000 was a factor too. It was time to make a decision.

E. *Did any barriers, or bottlenecks, occur during the project, and if yes, how did the team overcome those issues?* Funding sources and financing were our two biggest obstacles during the project. While we waited for financing and grants, we explored a satellite dairy concept and other growth opportunities. Ultimately, we leased that satellite farm and still milk cows there today, a year after our new dairy was completed.

We had financing discussions with multiple lenders, but everything was held up as we waited on grant approvals.

There were also environmental issues regarding a storage tank. Our bank required an environmental survey, another major challenge for us. Our team wasn't involved with that challenge; we just got it done.

There were no major bottlenecks during actual construction, other than minor miscommunication over technical misunderstandings during the project. The three main setbacks were related to the manure/environmental component of the project: 1) Sub-contractor misunderstanding bid specifications resulting in an additional \$15,000 we had to pay in addition to what was originally included in the bid. 2) An equipment down payment necessitated a bridge loan which we were not prepared for. 3) A rock removal contingency which was shifted to another project, costing us more than \$9,000.

### Actions:

F. *How did the work done on a business plan or feasibility study impact the farm's final decisions?* For our family business, the planning process was probably "mission critical" to accomplishing the entire project. We wouldn't have a lender without the plans. It was extremely important to have realistic projections of what to expect with this new business model. When compared to our previous farm scenario, building a new barn with robotics showed significant opportunity, but not without significant risk.

G. *How long did the project take, start to finish?* The entire project, including planning, took us 3 ½ years.

- Planning, prints, estimates, contractor – 2 ½ years
- Financing – 2 months, once grants approved
- Breaking ground – 2 months, after lender approved
- Pre-construction – 4 months
- Construction – 7 months

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### 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?* Now that we've been in the new facility almost a year, we are just beginning to see changes in profitability in the business. In the first year after expansion, it takes time to bring production levels up. We needed to work out technology bugs and labor efficiencies.

As of February 2014, we have our entire team trained how to efficiently run the operation.

I. *Did the modernization and new technology change management practices on the farm?* Yes. It changed many things for us. Our employees are doing more skilled labor, making better use of the computer. We have treatment protocols and systemized operations at all three milking facilities. Our new model is centralized management at all three facilities, incorporating what we learned at the other barns. If our cows are not adjusting and thus profitable in the robotic barn, we move them to one of the other two barns, providing us more flexibility.

J. *Have you learned anything that has influenced future decision making about technology or given you new enthusiasm for some aspect of modernization?* Our employees are not only competent, but with this new facility, they also enjoy what they do and are much more productive. Because of technology, employees found their niche. We are now large enough that our employees can specialize. We have weekly team and manager meetings.

Our future investments would be in additional robotics or other technology – software updates or new programs for production or milk quality control. It would be a system that could be easily incorporated into our robotic barn or perhaps at the other facilities.

We've also been excited about using separated manure solids as bedding. We've seen a decrease in foot problems, compared to our other barns with mattresses. Deep manure solids bedding is demonstrating major cow comfort benefits for us. The manure separator has paid for itself.

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?* Yes. We've had an overwhelmingly positive response. We are constantly showing the new facility to our neighbors and hosting tours and guests.

I think we are an example of how the dairy industry can survive and thrive in our area. Guests also have been impressed by cow and facility cleanliness. Odor mitigation was important for us as we planned this expansion. We didn't want to have odor problems. We definitely do not, and we consider that a big accomplishment.

My son, Jared, and his wife see opportunity in the business for the future too, and are considering agri-tourism.