

Modernization and Technology

Situation Overview:

- A. *Detail the farm's reasoning behind the decision to pursue a modernization plan.* The current facilities at Brook-Corner Holsteins were out of date, with 20% to 25% overcrowding, due to a growing herd. There was interest from the next generation to continue the family farm.
- B. *List the key variables that impacted the decision to move ahead with the plan.*
- Children saw a future in dairy farming and wanted to return to the farm and enter the business.
 - The feasibility study indicated that it was possible to expand and remain profitable.
 - The farm could expand cow numbers via internal herd growth, rather than buying additional replacement heifers.
- C. *The following modernization areas apply to our farm and describe the incorporation of technology.*
- Young stock facilities – To improve labor efficiency, we built a slatted floor free-stall barn for our heifers several years ago. Since that barn has freestalls and headlocks, it has helped the heifers transition into the milking herd facilities which also has free stalls and headlocks. Anticipating our herd growth, we previously built new and expanded calf pens.
 - Milking cow facilities – Milking parlor with automatic take-off milkers and rapid exit lift gate. Plate cooler for milk cooling efficiency.
 - Manure management and storage – Installed a rubber lined pit for adequate storage.
 - Manure handling – Keystone gutter system with automatic scrapers and a manure separator. We now deep bed with the manure solids.
 - Feed storage – Added two 160' x 40' feed bunkers.
 - Renewable energy – Solar panels to heat hot water.
 - Bedding – Deep bedded manure solids.
 - Ventilation – Tunnel, cross curtains, fans, and sprinklers controlled by Vent-Genie automatic sensor.

Challenges and Opportunities:

- D. *What were the different options the Transformation Team considered as they worked together to pursue this plan? Please describe.* The team suggested building a bunker on a flat surface, rather than continuing to use ag bags. This would improve the feed quality and also serve as a better return on investment, eliminating plastic bags.

The plan was complete, but the bunker wasn't in the plan. By building a bunker, we also needed a water

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run-off permit. We had to amend the plan to secure the necessary permit. While it always was on our minds, it wasn't included until the very end of the project.

E. *Did any barriers, or bottlenecks, occur during the project, and if yes, how did the team overcome those issues?* Yes. Property line insurance was a potential problem. A last minute demand for property line insurance by the bank, due to a new federal regulation, was resolved by the bank deciding not to require it. When we decided to go with bunkers, we were required to address potential leakage issues. The engineer and conservation district helped us come up with a workable plan that allowed us to proceed without delaying the project.

Actions:

F. *How did the work done on a business plan or feasibility study impact the farm's final decisions?* The feasibility study added certainty and made the project more attractive to the bank. In addition, it allowed us to have confidence that our project would be successful.

G. *How long did the project take, start to finish?*

- Feasibility study – Spring 2010
- Initial site evaluation and engineering – November 2010
- Broke ground on the project – July 2011
- Moved cows into the new barn – January 25, 2012
- Project complete – March 2012
- Industry and Community Open House – July 6 and 7, 2012

Results:

H. *How did the modernization and new technology change the business as it relates to profitability?* We noticed a difference in cow comfort that resulted in more milk from our cows, within a few months. Today, our pounds of milk per cow have gradually increased. Stall size and bedding benefits also impacted profitability. For ventilation, our new barn has a computer system that frequently adjusts the fans and curtains. There also is a sprinkler system for hot summer days. As a result of this project, our labor costs also have decreased.



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I. *Can the farm quantify labor savings, energy savings or environmental impact?*

- Labor savings: We doubled the number of cows we milked, and only added a 15% to 20% increase in labor costs. We are much more labor efficient. Regarding labor in the barn, we milk about 100 more cows, with the same amount of employees and in a shorter amount of time.
- Energy savings: Solar panels and energy efficient lights have reduced costs, although we are in a new facility, so it's difficult to compare to the old barn. Given the size of our construction project and technology additions, the electric bill seems reasonable, comparing old and new barns.
- Environmental impact: With this project, we now have a larger manure pit. With the old system, we were hauling manure more often, and not always when the ground was ready.
- Electric runs on a three-phase system which is more efficient and easier on motors. Since the old system and the new barn are so different, it is really hard to quantify exactly how much more efficient we are today.

J. *Did the modernization and new technology change management practices on the farm? Yes.* We now spend more time managing rather than working as farm labor.

K. *Have you learned anything that has influenced future decision making about technology or given you a new enthusiasm for some aspect of modernization?* Since the Transformation Team project, Brook-Corner Holsteins is more confident about investing in new technology, especially in the future. We also are excited about our solid separator, but we know there is more to learn. For dairy farmers, the biggest problem is often manure storage and the separator opens the door to new solutions.

L. *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 two open houses in the summer of 2012 – an industry Open House, coordinated by the Center for Dairy Excellence (CDE), and a community Open House.

At the CDE Open House, several hundred interested people attended, touring our new facilities. They wanted to see the new technology and to learn if it was worth the cost to improve cow comfort.

At the community Open House, on a 100 degree day, more than 200 neighbors/friends showed up. Since the day was so hot, they were impressed with how cool the free stall barn stayed despite the soaring temperatures outside. Most drive by our farm every day, but had no idea what goes on in the dairy barns!

