

Combining Data, Process Analytics and Best Practices to Drive Digital Transformation in the Livestock Industry

SUCCESS STORY

Background

The meat and livestock industry is central to Australians in their choice of food. It is integral to the lives of many and covers a vast schema of enterprises along the value-chain.

From stockyard to plate, there are regional non-profit businesses supporting cattle and sheep producers that provide meat in Australia and around the world. Some also assist with industry oversight, marketing and R&D for companies within the livestock industry.

Business Challenge

Dealing with a Fragmented Industry

To usher in change, one of the regional non-profit businesses placed developing an open data ecosystem as one of its highest priorities. This is to combat further fragmentation of the industry. We have seen in this industry that leaders across the value chain often withhold information regarding their operations. This can create a lack of transparency in decisions made. Given the rigidity of the meat and livestock industry, poorly informed decisions can have unchangeable consequences. With this, a new adaptive and agile strategy for some of the industry's companies was needed to optimize system efficiency, improve product quality, foster industry transparency, and promote system integrity.

With an ever-changing global food climate, chicken and pork have started to outpace beef in consumer consumption. This, combined with a continuing challenge of both on and off farm productivity performance as well as the

decreasing price of livestock per head, has driven the need for a new enterprise-wide strategy for improving best practices and increasing productivity. Another increasingly relevant issue to the meat and livestock industry is the ability to further promote and adopt animal welfare practices across all value chain silos, which is expected to be one of the leading challenges facing the industry in Australia.

The associated group companies of the non-profit business export beef, sheep/lamb, and goat meat across the globe. From April 2016 to April 2017, 969,068 tonnes swt of beef were exported from Australia to the United States, China, Japan, Malaysia and Vietnam. Given the global nature of the industry, the non-profit business needed a partner with a deep understanding of international market interaction and the ability to navigate across different silos within the meat and livestock industry. They also required guidance and assistance on developing a new Internet of things (IoT) digital strategy for making decisions across the value-chain.

Our Solution

Addressing the Challenge with Digital Solutions

Given the challenges faced by the cattle industry, the non-profit business looked to team with someone who could fully understand the breadth of what was required to introduce new digital capabilities to an operational technology heavy industry. Hitachi Consulting understood what was needed to create IoT digital transformation with Hitachi's

“HPI for beef production systems provides a unique opportunity that cannot be overlooked. To deliver next horizon technologies that will drive high levels of farm integrity and target production efficiencies for beef producers is an exciting concept.”

Project Manager

a regional non-profit company

105+ years in the operational technology sector and 55+ years in the Informational Technology sector. To achieve this digital transformation, Hitachi Consulting delivered Hitachi Process Intelligence which allowed the client's associated companies to visually represent all individual farm operations and make the right decision to establish best practice along all ends of the supply chain.

To effectively design and deliver Hitachi Process Intelligence to the client's associated companies, data regarding all farm operations and individual cattle had to be collected and established. To do so, Hitachi engaged on-farm to allocate points of data collection that would allow for the best data to be captured. Hitachi then provided a data repository to collect individual animal history and provide a more detailed track record of the animal's life (including weight, locations, and health).



Hitachi helps to deliver digital innovation in agriculture.

In addition, a repository of on-site weather data tracking was implemented. The knowledge repository of best practices was compiled and delivered. It is visually represented through a control center and a farm monitor.

The data repository collection plan was established by putting forth a strategy to input active RFID tags in cattle in a broad range of locations. This provided the means to best understand the value capture of each individual head of cattle. The collaborative ability of both the client and Hitachi proved to be a huge point of strength, where the client associated companies provided the onsite cattle insight expertise which was then used to provide the base for big data analytics to form best practice models.

This also involved working in a multitude of different environments where telecommunication signal was limited. Depending on the region of focus, Hitachi provided strategies and collaborated with existing partners for the best means to transmit data across the region. This required an understanding of the wide range of farm modernization levels. For example, there were cases where farms had little to no onsite IT or telecom. Hitachi devised a resolution to help support localized telecommunications as well as deployed satellite capabilities on-farm. Hitachi also adopted and delivered a dynamic data collection and transmission strategy to ensure end to end data monitoring and mobility.

Hitachi Process Intelligence helped to establish an on-farm IoT capability. The solution also helped the client implement an effective and cohesive IoT digital transformation with long lasting implications to value chain transparency and decision agility across all industry layers.

Benefits

Solution Delivers Data Insights, Exceeds Business Goals, and Increases Revenue

Through the implementation of a smarter process across the client's associated companies' entire supply chain, there has been a significant value add through Hitachi Process Intelligence. The value gains include not only an improvement in the quality of meat itself, but also revenue generated through the optimization of the feed supply chain. Among some key benefits seen through the implementation of Hitachi Process Intelligence are:

- \$1.1 million per year potential annual revenue for a single farm of 30,000 cows
- \$14.2 million per year sales potential across all of the client's members
- Transparency across the entire supply chain
- Implementation of an open-data ecosystem
- Entire life traceability for individual cattle
- Central data repository and an onsite Farm Management System for each individual farm generated

Both from a financial and operational perspective, the client has seen a large-scale increase in value brought by Hitachi Process Intelligence. Through analysis of previous challenges faced by the client's members, on and off farm productivity performance was a main issue, and the increase in operational efficiency due to smart decision making has allowed for the cattle sector to gain a competitive edge in the meat industry. Overall best practices that have been generated through smart decision models have helped to promote animal welfare in the industry. They have also created innovative strategies for data transmission/communication and cultivated a more agile environment regarding decision-making across all sections of the value chain. Hitachi Process Intelligence is truly an adaptive solution that is leading the client's entrance into the age of IoT.

Conclusion

Hitachi Consulting leverages decades of deep industry experience to provide practical business strategies and digital solutions. Our collaborative, pragmatic approach enables superior operational performance, positive business change, and consistent, measurable results. Hitachi Consulting continues to find ways to help our clients eliminate barriers to their success.

Hitachi Consulting

14643 Dallas Parkway
Suite 800, Dallas, TX 75254 USA
www.hitachiconsulting.com

Ph +1 214 665 7000
Fx +1 214 665 7010

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