

INDUSTRY 4.0

NETWORK SITE VISITS

Comvita

Beginning the paperless journey towards a smart supply chain.



Who We Are

Comvita was founded in 1975 by two New Zealanders, Claude Stratford and Alan Bougen, who are widely regarded as pioneers in Manuka honey. Their partnership was based on an enduring belief in the power of nature and as beekeepers, an understanding of the special properties of the hive to protect and heal. Through research and scientific rigour, the Comvita product range brings the power of the hive to the consumer through the core ingredients of Manuka honey and Propolis. With this potent combination of nature and science Comvita products offer consumers health solutions that support digestive health, immunity, everyday wellness and the skin.

In 2021, Comvita officially opened its state-of-the-art Wellness Lab experience space in the Viaduct, Auckland. A seamless integration of nature and science to take guests on a rich and unique multi-sensory journey that will bring an unparalleled depth to their perceptions of honey, Manuka and bees.

The iconic manuka tree grows deep in New Zealand's remote hill country and coastal lands. Flowering only once a year for 2-6 weeks, the nectar of the manuka flower is rich in a unique variety of phenolic compounds. Given its short flowering season, it takes immense skill, planning, and resources to harvest Manuka Honey, which is why we can never take a single drop for granted.

Background

Natural ingredients contain many attributes, all of which vary in a way that inherently means that no two batches will be the same. As this is our day-to-day reality at Comvita, we require successful processes that are designed to embrace this variation and are fully backed up by rigorous quality standards.

We use a combination of IT systems and paper-based batch information to support our daily quality processes and these systems help us to manage this variation in the natural ingredients. The mix of IT and paper-based systems we use provide our teams with clear guidance on how to care for our products and it also creates a good record of what has been done for future reference and traceability purposes.

We know that the information being captured manually through our quality systems is very valuable to us but when we asked "what does this information tell us", we were often met with an incomplete or inaccurate answer. Due to the manual handling of the paper-based information and the long timeframes between an event happening and this information being reviewed, we were faced with a slow rate of improvement and problem solving.

One example of a process like this is in our decant area, where we remove honey from the drums it arrives in. The paper-based systems we use to record and validate incoming weights had real limitations, with the information being captured by hand.

Solution

We decided to use our decant process as a best practice area and designed a flexible and modular digital framework to capture and integrate operational data into our reporting systems. We would use this to prove the concept of an agile developmental approach and the benefits of digitalising our shopfloor data.

We followed the "Think Big – Start Small – Scale Fast" approach as follows:

1. Establish the business need. We identified a specific implementation point (our decant process) to trial the

- concept but also considered the whole supply chain and the future state.
2. Design and create the IT architectural foundations for a single secure and flexible database. We specifically scoped this to ensure high levels of compatibility with data capture hardware, initially for the decant weight information but incorporating the ability to be easily and quickly scaled.
 3. Define an adaptable development scope, aiming for as close to "agile plug and play" concept as possible with core functionality established and modular components built fit for a specific need allowing for easy expansion throughout the business.
 4. Create a clear roadmap to change with a defined scope to start. A point within the supply chain with a specific data need was selected to develop the baseline model – this was the decant area.
 - The baseline model was limited in scope to a specific task and a small number of inputs/outputs (In decant we use a barcode scanner to wirelessly capture from a loadcell and collate into a database along with meta-data from a handheld mobile device and minimal integrations).
 - Trial and prove reliability and fine tune the all-important usability of the system, along with the horizontal integrations as information flows through the system.
 - Build-out basic reporting and analytics along with exceptions notifications.
 5. Once the baseline model is proven in the decant area we will expand the scope to include additional inputs and outputs, integrations, analytics, and exceptions from the selected point within the supply chain.
 6. Follow the roadmap using "agile plug and play approach" to grow the horizontal and vertical integrations throughout the supply chain, to move forward on the paperless journey, and ultimately Big Data/Industry 4.0 journey.

The benefits we are seeing so far from this solution are:

- Saving production operator time, meaning they can focus on value adding tasks.
- Removing paper, and utilising both horizontal and vertical integration to provide easy to access to data that was previously limited.

Further questions?

To find out more please contact the EMA or Frank Phillips at LMAC

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- Achieving a significant improvement in accuracy and reliability of data collected.
- Able to access up to date insights and reporting, allowing for improved transparency of information across the business, reducing the latency of solving problems.
- Getting the team excited about a paperless system – demonstrated the usefulness and value of the transition to the team members with an easier, faster, and more meaningful solution.

Key takeaways

- Information currently captured on paper can provide a wealth of useable insights if collected in a more accurate and reliable way.
- Clear business needs, an understanding of the future state and a well-considered IT Architecture are essential to build the roadmap to change.
- A core design built on the approach of agile plug and play means modular flexibility to suit the needs of the business.
- Start small, at one point with a simple purpose, and grow from there when ready.
- Building a solution with the team using the tools helps drive the desire to change, supports ongoing engagement and keeps the passion high.

About the site visits & Industry 4.0

The purpose of the Demonstration Network is to drive uptake of Industry 4.0 technologies among New Zealand manufacturers with the aim of increasing their productivity and global competitiveness. The Network of Site Visits (NSV) are part of the [Industry 4.0 Demonstration Network](#), which also includes a mobile showcase and smart factory showing cutting-edge industry 4.0 technologies in action. The NSV takes selected companies through a fully-funded assessment process to help them accelerate their own journey towards Industry 4.0, and sees them share their knowledge with other manufacturers.