

Smart Supply Chains: Case Study

Trust Provenance, in collaboration with Manbulloo, Growcom, and the CRC for Developing Northern Australia, commenced a smart-supply-chain traceability project in 2017, with a focus on providing real-time and secure information on all mangoes from the paddock to the retailer, to optimise the journey, identify pain points and ultimately provide better quality fruit to consumers.



Scott Ledger, Quality Manager, Manbulloo Mangoes:

"Our mangoes move through the supply chain and have a number of touchpoints along the journey. At each of these touchpoints, separate logistics systems are used and at the commencement of this project, none of these systems were linked."

"We were also seeking a way to access all of the supply chain information in real-time. With the development of blockchain, we had the ability to use a new level of data integrity and transparency to continually improve our processes and relationships with our partners along the supply chain."

"Trust Provenance mapped the supply chain, identified each system, created linkages into each system and collected data along the journey as each batch arrives at a touchpoint. These data points are collected in real-time and are stored on the blockchain and then can't be changed."

Outcomes

Scott Ledger from Manbulloo provides an overview of the key outcomes from this collaboration:

Saving time and access to data: "We can now enter a unique barcode on the carton label and identify exactly where the carton is in the supply chain and the journey it has gone on. This barcode also enables us to identify the batch to which the carton belongs, the pick and pack dates and the block on the farm where the fruit was grown."

One platform: "We have also integrated the data from temperature loggers and the quality assessments along the chain. This means we have one system with all data feeding into it, which is secured and a central dashboard provides instant traceability."

Customer value: "Our major customers, including Coles and international retailers, are continually seeking greater levels of product integrity and our blockchain platform is addressing this challenge."

Efficiencies: "In the past, each chain partner used their own system to identify and trace product, which resulted in duplication and extra costs. We are implementing the GS1 Australia standard for product ID and traceability so the members of our supply chain can use the same product ID system. This will not only save time and costs but also reduce human errors and wastage."

Value Proposition and ROI: "Our acceptance rates at the supermarket distribution centres are at record highs, our internal processes are running more efficiently, and we have more information available in real-time than ever before. We have made a great start and will continue to develop even more levels of insight and supply chain data integrations."



What does the software do?

As the mangoes go from point-A to point-B, data is collected into separate systems by each stakeholder in the supply chain (data from on-farm, packshed, logistics, dataloggers, ripening facilities, quality checks and distribution centre assessments), Trust Provenance's software collects data from each of these systems, and does three core things:

1. Collects it in real-time as the events occurs
2. Presents all the data on the one dashboard, to allow the data to be interpreted and any required actions taken in a more timely and efficient structure, including for reporting, searching and analysing; and
3. Secures the data utilising blockchain, meaning that as the data is collected, it is secured into the blockchain and can't be changed.

Is the software plug and play/ off the shelf?

- The software core is now developed and as we add new systems onto the software it means the next user with that same software can be up and running quickly.
- If a new system needs to be connected in, this is done on a time and costs basis.

What's next?

"We want to capture more datapoints. Capturing more data points through the chain and linking information such as phytosanitary and food safety certification, tracking of transport vehicles, export customer ordering, invoicing and quality assessments, and ultimately consumer feedback.

Over the life of this project we have seen the National Traceability Framework announced, the Australians

Blockchain Roadmap released with a focus on agriculture provenance, and major retailers placing a greater emphasis on traceability. The drive for food security and safety, coupled with the COVID-19 restrictions, has made information integrity and real-time availability of information, more important now than ever, and I would encourage anyone in our industry to move along this path."

Scott Ledger, Quality Manager, Manbulloo Mangoes.

Learnings

"Working with Manbulloo has been a real eye opener for us. Their focus on quality and getting the system and process right, is where we see all Australian producers heading. Australia has a globally leading brand and image which secures our food locally and can demand a premium globally".

"This has also led us to launching other projects in the Australian citrus industry and the Australian grains industry, where other leading producers have identified the value this solution can bring to their companies."

Andrew Grant, CEO of Trust Provenance.

More Information

Trust Provenance, Manbulloo and Growcom will be undertaking a series of webinars to walk through the project and answer any questions from industry.

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The screenshot shows the Trust Provenance dashboard with a sidebar menu on the left containing options like Dashboard, Batch Search, Batch Trace, Reports, Track Carton, Blockchain, Customs, Submit Feedback, and Settings. The main content area is divided into several sections: 'BOX SEARCH' with an input field for 'Enter serial number' and a 'SEARCH' button; 'BATCH SEARCH' with an input field for 'Enter batch code' and a 'SEARCH' button; 'Recent Searches' listing three items with 'OPEN' buttons; 'Temperature + GPS Map View' showing a map of a region; and 'Active Trackers' with a table listing boxes, trackers, and temperatures.

Box	Tracker	Temperature (°C)
487230247051	54030459-49	7.6
487230247054	5400011187	6.3
487230247096	5400014402	6.3

The screenshot shows the 'Blockchain' section of the dashboard. At the top, a horizontal timeline displays a sequence of green circular icons representing events. Below this, a table provides a detailed log of events, including their timestamps, blockchain hashes, and signatures.

Event/Action	Timestamp	Blockchain Hash	Blockchain Signature
Carton registered	10:00:00 02 Jan 2020	5d3096f038a40184972110f54b1875 270523d44ba32a5c5a6b4a7018	54279164641c1a18f02a043305 34a0ca2ba9c26a1ca7e449f3564
HARPS certificate attached	10:00:00 02 Jan 2020	5d32840638f0614502716a910c257 f88e88f050c099a70321761582c	c03887f251eae02d896a808b0b0711 416022f8e073a225a78e77208d8f
Carton allocated to pallet	11:01:00 02 Jan 2020	e110213a40a34702555658a058217 5d707480102020f8a4a32a394981	42765149f20a0f5d9f0232a4e14 4f3a6b349102020f8a4a32a394981
Pallet allocated to boat	11:02:00 02 Jan 2020	0094472f7f105a18a4837842342c 417a6a178e484848484848484848	5a14a23a4a4820a91e17a8500007 c040f488484848484848484848
Load dispatched	11:30:29 02 Jan 2020	7026201102031020714427a678 49f321a401528a48484848484848	520c0f0b0a0a4848484848484848 e6a0a3300a4848484848484848
GPS temperature measurement	14:41:29 02 Jan 2020	00789a70a7E6aa78a6a6270020a0b 1a2a2a2a2a2a2a2a2a2a2a2a2a2a	27a02020f09f1027320a0a0f1075 416022f8e073a225a78e77208d8f