

NURSERY PAPERS

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NURSERY SUPPLY CHAINS AND LOGISTICS

Australia's nursery and garden supply chain is diverse and multi-faceted. Moving green life from production to consumption may seem straight forward, but growers are faced with a range of logistical challenges, compounded by rising transportation costs.

There is, however, increasing enthusiasm and understanding across the industry that new technology will help to drive greater business efficiencies. This includes having access to better and more reliable data to help drive and inform a more strategic decision-making process.

In this nursery paper, we revisit key recommendations from previous research reports and nursery papers which highlighted the hidden transport costs along the horticulture supply chain.

While growers are still faced with many of the same issues outlined in these reports, there are a number of recommendations that can be embraced by industry, so as to build more effective business practices and to enhance overall competitiveness.

Summary

- Efficient supply chains are dependent on those along it to complete their role reliably, which is why clear terms of trade are needed across the board.
- Innovation is critical to reducing costs, whether this be redesigning nursery equipment such as trolleys or pallets, or sharing cutting-edge knowledge from growers around the world.
- Adoption of new and emerging technologies, from automation through to traceability, will enable nurseries to reduce handling time and costs, and improve their overall productivity.
- Ongoing training and upskilling of the industry is essential, to help growers successfully utilise information and the technology.



BACKGROUND

In today's fast-paced environment, it has never been more important for nurseries to look at their supply chain management (SCM) to meet customer needs and to use data to gain deeper insights into their business¹.

SCM refers to a network of multiple business relationships, in contrast to just one-on-one business relationships². In addition, logistics manages the 'effective forward and reverse flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers' requirements.'³

While the end product is ultimately paid for by the consumer, there are a number of different players and parts which work together to ensure green life is on our shelves, ready for sale.

- 1 <https://home.kpmg.com/au/en/home/insights/2017/08/supply-chain-management-future.html>
- 2 Lambert, in Handbook of logistics and supply-chain management, Brewer, Button and Hensher (2001) London, Pergamon
- 3 Council of Supply Chain Management Professionals



AVAILABLE INFORMATION

There is a significant amount of research into the nursery supply chain and its associated logistics, with a wide variety of helpful resources available to growers.

In this nursery paper we revisit the 2009 nursery paper developed by Gerard McEvilly and Tom Rafferty, part of project (NY08006) which highlighted the hidden costs along the horticulture supply chain.

It was developed off the back of costly changes occurring in the transport sector, which in part were driven by global fuel prices and alterations to safety regulations affecting plant transport flexibility.

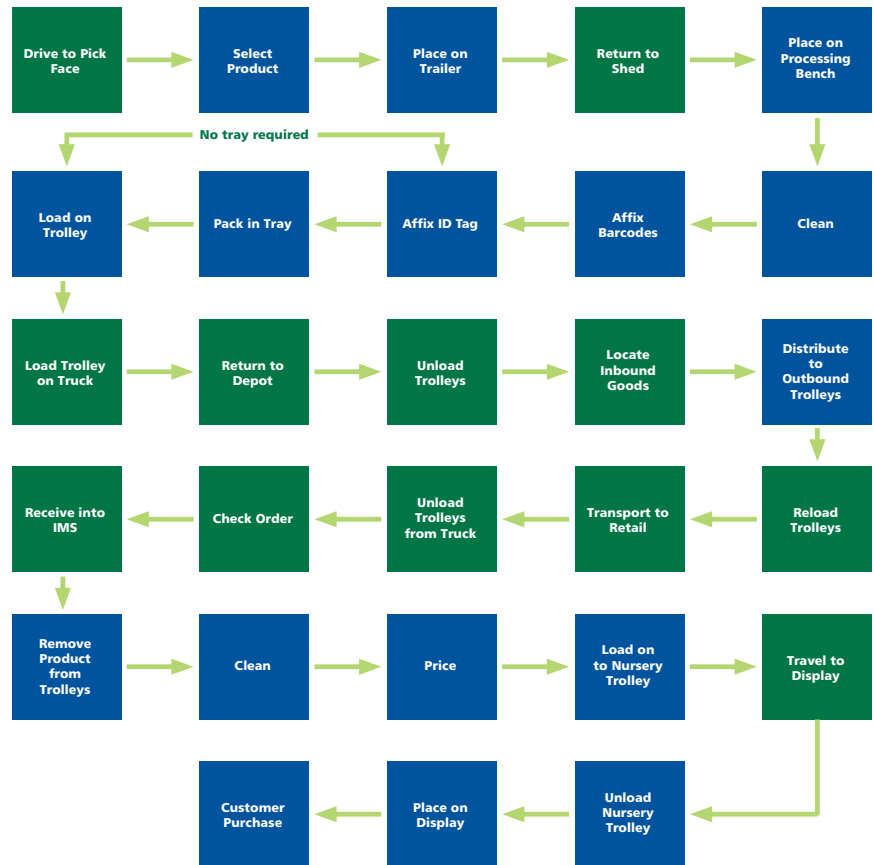
Importantly, the report identified a number of key improvements within industry's control and influence such as developing an industry materials handling standardisation plan, right through to reviewing marketplace data.

Improvements in Supply Chain Efficiencies and Logistics for the Nursery & Garden Industry was also released in 2009 by Nursery & Garden Industry Australia (NGIA) as part of (NY08006). The report called for participants to improve their understanding of the nursery supply chain and the marketplace which it supplies.

Prior to this, in 2001, a report titled, *Plants, Trucks, Computers & the Internet – Can we get them together*, was released as part of the nursery levy funded project (NY99038) which took a close look at the opportunities in e-commerce and transportation.

Its purpose was to outline the status of the *Nursery Industry Supply Chain* (NY97047) project, which commenced in 1998 with a report titled *Nursery Industry Supply Chain Analysis*.

The findings identified gains from improved freight efficiency and the electronic processing of invoicing and consignment notes were estimated at \$14.95 million per annum.



Typical Nursery Supply Chain.

Source: 2009 Nursery Paper: Supply chain management holds the key to viability of nursery enterprises https://www.ngia.com.au/Attachment?Action=Download&Attachment_id=1423

Fast track to 2017 and industry is still faced with many of the same issues, which are impacting on the competitiveness of varied nursery supply chains.

The good news is that many of the recommendations put forward in these reports are still applicable today, and can be used alongside new technological advances to propel the industry forward.

THE NURSERY SUPPLY CHAIN EXPLAINED

The McEvilly and Rafferty Nursery Paper outlined a mapping exercise, to illustrate what a typical nursery supply chain looks like.

In particular, it focused on one pot that moved through 14 different stages during the plant's journey from production nursery to the consumer (not including handling during the production process).

Unfortunately this is a common experience in production nurseries and, to streamline the entire chain, requires more than simply removing a step or two. In fact, a multiple of interacting issues must be considered.

The paper identifies one way to address these is to consider them as (1) information (2) coordination and/or (3) innovation issues.

WHERE ARE WE GOING WRONG?

A number of challenges hold the industry back, but by addressing some of these, it would reduce the time, money and resources spent on logistics.

Some of these issues include:

- A lack of standards across the nursery supply chain including pots, trays and other related transportation issues
- A lack of individual business organisation such as machinery, infrastructure, materials



Trolleys at a wholesale nursery.

The report also identified most nursery businesses had little or no data on the costs incurred at the different steps of their operation.

INNOVATION: Overseas innovation and the nursery trolley.

The paper outlined innovation is not always about technology or products – but can be ideas and knowledge from around the world, which are valuable for growers to explore and potentially implement in their business.

The report examined the ‘standard’ trolley design used in Australia, but also looked at 10 different trolley designs (and other nursery equipment) and found that there are significant costs for nurseries in investing in new, innovative equipment.

COORDINATION: Terms of Trade

Efficient supply chain management relies on industry participants to complete their role effectively and efficiently, which directly relates to ensuring ‘delivery in full and on time’.

The research found that many nursery businesses operate without clear trading terms, often resulting in dissatisfaction with the performance of trading partners.

- Ineffective planning and layouts of nurseries and facilities, combined with the lack of comprehensive training for staff and the associated information systems
- Poor uniformity within plant species and excessive plant handling including individual pot trays
- Poor and inefficient transport infrastructure including poor quality roads and excessive tractor travel across sites
- Communication issues between production/potting, storage, dispatch and office.

research data, to inform strategic and tactical business decisions, and to improve the strategic direction of industry organisations.

It encouraged greater use of computerised systems and communication technology to drive productivity gains and efficiencies within the business, but also between the retail and production sectors.

WHAT IMPROVEMENTS CAN BE MADE?

The McEvilly and Rafferty Nursery Paper outlined three focus areas for the nursery industry.

INFORMATION: Industry data, research data, information communications technology and activity based costing.

The report identified there was significant scope to better utilise information, particularly industry and

NEW INDUSTRY DATA COLLECTION AND ANALYSIS PROJECT

A new project being funded by the nursery levy is out to address some of the national data gaps facing Australia’s nursery industry.

Nursery Industry Statistics and Research (NY16004) aims to provide a more accurate industry snapshot, and prepare the industry to harness the benefits of having this data.

The project is made up of three stages, with the first two already completed.

Part one involved a desktop review of what is currently available to identify

discrepancies and guide information priorities. Part two involved a comprehensive interview process with a large amount of Australian production nurseries, which provided a range of employment, production and social data.

The final part involves developing a data tool that captures both primary and secondary data sources that will be delivered to industry. It is anticipated this data will help to identify industry and business performance as well as market trends.



OPPORTUNITIES TO EMBRACE NEW TECHNOLOGY

In a world driven by technological change, there are significant opportunities ahead of the Australian nursery industry, with data capture, manipulation and analysis more accessible and reasonable than ever before.

E-commerce isn't a new concept, but one that could be further embraced by the nursery supply chain, so as to improve business efficiency and profitability.

Technologies such as barcodes have been around for over 40 years, but there is an opportunity to use them more within the supply chain, particularly in inventory and stock traceability.

For instance, batches can be labelled with a barcode that can be automatically scanned and recorded in the field when moving to a new location – or even if plants are pruned or fertilised.

This saves time on data entry and improves the decision making process of the business with better insights into the production process which can be used to contribute information to quality management systems

Likewise recent advances and cost reductions in robotics and material handling technology have potential to improve manual processes such as packing trolleys or spacing plants.

This can free up staff allowing them to spend more time on activities which value add products. Such advances are becoming more readily accessible and what was once only in the realms of large businesses is now available to all businesses regardless of size.

IMPLICATIONS FOR THE NURSERY INDUSTRY

With the nursery industry being highly diverse, both from a production and geographic perspective, it is imperative that industry continues to find pathways to a more effective and efficient supply chain.

Nurseries are encouraged to use this information to improve their business practices, build stronger relationships with their stakeholders, and boost their overall competitiveness.

In particular the opportunities that are available to the industry in terms of data capture and analysis are significant, and should be considered as part of individual business strategies.



Truck being loaded at a wholesale nursery.

LINKS TO RESOURCES

NGIA Supply chain portal (link to full resources) https://www.ngia.com.au/Category?Action=View&Category_id=441

2009 Nursery Paper: Supply chain management holds the key to viability of nursery enterprises
https://www.ngia.com.au/Attachment?Action=Download&Attachment_id=1423

Nursery Supply Chain Improvement Program https://www.ngia.com.au/Folder?Action=Download&Folder_id=130&File=supply%20chain%20-%20NY99038%20Kneebone%20supply%20chain%20improvement%20program.pdf

Nursery Industry Supply Chain Analysis https://www.ngia.com.au/Folder?Action=Download&Folder_id=130&File=supply%20chain%20NY97047%20Kneebone%20supply%20chain%20analysis.pdf

Improvement in Supply Chain Efficiencies & Logistics https://www.ngia.com.au/Folder?Action=Download&Folder_id=130&File=NY08006%20Improvements%20in%20Supply%20Chain.pdf

Barcoding guide for Production Nurseries https://www.ngia.com.au/Attachment?Action=Download&Attachment_id=1877

Nursery Paper 2017: Data key to a national industry voice https://www.ngia.com.au/Story?Action=View&Story_id=2334

PAST EDITIONS OF NURSERY PAPERS ARE AVAILABLE ONLINE on the Nursery & Garden Industry Australia website
http://www.ngia.com.au/Section?Action=View&Section_id=46