SUPPLY CHAIN EFFICIENCY
Where to from here for New Zealand’s domestic supply chain?

Introduction
New Zealand forestry companies face unique supply chain challenges related to a thin domestic market and New Zealand’s distance from international markets. The outcome is high supply chain costs as a percentage of the value of products. In many cases these supply chain costs for exporters are greater than production costs and make or break any chance of achieving a margin. Simply an efficient supply chain is a critical element in deciding the success or otherwise of New Zealand businesses and economy.

It is the domestic elements of the supply chain that policy makers and New Zealand business can control and either improve or damage. This was recognized in the 1980’s when a reduction of policy distortions (for example licensing), combined with labour reforms, containerisation and the creation of a competitive environment for road transport delivered substantial productivity gains.

Looking ahead New Zealand’s forestry supply chain faces new and potentially serious productivity challenges.

Policies related to environmentalism, high energy costs, the cost of capital for transport operators (post recession), and changes in road user charges seem likely to adversely affect domestic supply chain costs cost and therefore exporters and indeed the countries ability to compete globally.

Admittedly new mass and dimension rules for road transport operators may assist productivity but the limitations of the associated permit system and the way increased road user charges are applied will substantially limit any possible benefit.

The ability and willingness of Government to continue to provide subsidies to rail seems to be waning and this in turn is likely to increase freight costs in regards to this mode. In addition the impracticality of removing some physical rail constraints makes it likely that some lines will close.

It is however the domestic road transport legs that are most critical to domestic supply chain efficiency and most vulnerable to many of the factors listed above. Road transport is scalable and
facilitates timely point to point delivery. Loading and routing options by road are flexible and with the right business model and tools, backload opportunities are abundant. Road transport has therefore many practical advantages and for better or worse will continue to dominate the transport task assuming any practical national policy framework.

Road transport in New Zealand with some 5000 operators is fragmented. This fragmentation while lifting innovation, and customer service, sacrifices economies of scale related to plant optimization and utilization. Leading supply chain models backed by modern information systems can build and manage a network of operators, thereby increasing plant utilization and efficiencies greatly. This approach together with a focus on matching demand with supply, and efficiency, plus site level and above projects can produce large savings for New Zealand shippers as well as excellent DIFOT performance.

The following paper describes a model and the technologies used by NZL for various customers to deliver supply chain savings and service improvements.

Advanced supply chain management partnerships (SMC’s)
NZL operate in customized to different customers transport and freight management business models (SMC’s) designed to deliver compliance, 97%+ DIFOT and cost savings in a sustainable fashion by increasing the utilization of transport plant and through the selection of the best available mode and transport unit.

SMC’s are set up to be focused on a customer’s strategic needs. These strategic needs typically include a requirement to achieve substantial savings.

Performance improvement opportunities are also achieved including:
- Consistency of product delivery in full on time.
- Compliance and product security.
- Reduced stock holding.
- Capacity to manage exceptions and projects.

Meeting these customer needs requires an SMC to find new efficiencies. This is done using technology to manage a network of contractors.
Imagine the efficiencies available if each load for a transport operator is a full load or a back load, load and routes are optimized, mobile plant is able to work extended hours, and confidence exists in a relationship to pursue long term joint projects whilst integrating supplier systems with customer production ordering and stock control systems.

This long term relationship is such that carriers can handle exceptions, will meet quality standards and supply chain and operator margin transparency is available to demonstrate that the shipper is capturing the efficiency not the SMC or contractor.

Using technology and industry expertise SMC’s can go a long way to achieving these goals plus provide accountability and simplicity through a well resourced single point of contact.

**SMC Structure and Governance**

An SMC is customized i.e. a shipper such as Fonterra will have a team dedicated to their supply chain (DTL) whereas medium sized businesses can benefit from the same approach but need only a liaison point and solid information exchange systems. The aim is to create single point of contact and a focus for the planning and needs of a particular customer.

The systems NZL uses provide transparency for the shipper covering operational matters and financial flows across the supply chain. In regards to performance loading and payment transparency is also available to key carriers. These reports and the establishment of a long term relationship facilitate continual improvement.

Mainstream information technology is used including GPS, to track transport units, GPS based confirmation of delivery via geo-fencing, buyer generated invoicing, route and load optimization, advanced route and load modeling tools, and cargo scanning on receipt and delivery, etc. (These are all now well established technologies).

It is however the convergence of these technologies that offers productivity gains. Setting in place the structure to utilise this information technology and organize efficient collaborative transport networks is what achieves the benefits for shippers and carriers alike. Perhaps a little aside from this approach NZL is also piloting spot market software designed to achieve additional savings.
NZL is in its own right a substantial transport operator. This provides strengths in that market knowledge and expertise is high and importantly provides in house resources that can go a long way to ensuring performance within the supply chain. This also however can provide tension within the contractor network as NZL competes and collaborates all at the same time. To mitigate this NZL often gain shares with the shipper against savings thereby making the company somewhat indifferent as to mode or carrier. Contracts are also established that ensure the relationships are managed appropriately.

*Optimum product delivery timing, vehicle loading and vehicle routes.*

Successful specialist supply chain management requires sophisticated planning tools, effective data capture, reporting and analysis tools, and has significant project management capability. The latter capability enables improvements at the customer’s site level. These tools and methods when linked to tools such as production forecasting, track and trace systems and transparency / visibility of transport unit options, ensures transport equipment is utilized efficiently, product is delivered just in time and stock holding is minimised.

Visibility across a large network of operators and truck units is facilitated by GPS and transport dispatch systems. These systems enable the selection of units known to comply with safety, product and compliance requirements. The systems also identify the route and load options that come closest to the optimum, pick up and delivery timing for product whilst enjoying the benefits of backload situations. For example, transport at the minimum sustainable cost.

A very simple example of the efficiency gains possible with well managed SMC’s is illustrated at New Zealand’s major container ports. Due to the fragmentation of the road transport industry typically only 20% of the trucks entering ports are two way loaded i.e. loaded in and out. The fuel savings, lower capital cost per tonne delivered, and reduced traffic congestion associated with increasing this factor to say 90% would obviously be huge.

The simple port example is paralleled by say a manufacturing plant in Palmerston North. This shipper may commit to a single transport operator but there will be many transport units that may be more efficiently placed to deliver product when and where required on any given day. When there are multiple shipping or receiving points the efficiency opportunities for an SMC actually increase further again as options for where and when product is produced and or received is added to the SMC’s options on mode and unit.
SMC’s will typically work with customers to control as much of the supply chain as possible. NZL is not the only party looking to increase supply chain efficiency and a separate example would be (the autonomous but in-house SMC) AF Logistics’ and it’s customer the Foodstuffs co-operative collect suppliers product direct from the producer or importers warehouse where once the producers or importers might have delivered to Foodstuff stores. This maximizes the opportunities for two way loading and ensures the required food security standards are maintained.

Even with a large contractor network, recent restructuring by multiple Road transport operators has resulted in a large reduction in available assets on a multitude of key routes where volume are set to increase and some SMC customer sites may not be well placed to achieve cargo moves as full loads and backloads. Ensuring that one way loading of transport units does not occur and or target cargo is moved as a backtrack can in some cases require the SMC to seek to control third party transport work i.e. to bid for supply chain contracts. This third party work may also provide an opportunity for the SMC to offset supply chain costs for their core customer while benefiting the third party and improving contractor viability.

Other advantages
The above outlines how a SMC works to lower shipper costs through the management of a transport network, the optimisation of transport units and modes and site level projects. A further value leap however can be achieved if product flow from production to customer is also focused on.

This focus on product flows may see SMC’s and their clients review production and shipping points, undertake studies designed to eliminate stock holding, redesign packaging, engage in load consolidation operations, develop specialist transport plant, reconsider mode options and using SMC’s network options and optimisation tools seek to improve production to customer just in time delivery.

The single point of contact and accountability that SMC clients have, also creates a central point to access reports, rather than rely on plant by plant reporting. An ongoing consultative activity between clients and SMC’s has continually proven to have positive and lasting benefits for all parties.
As SMC’s operate and select contractor options two other benefits accrue. Firstly transport company subcontractors are not required and this saving is captured for the client and secondly operators with specialist capacity, expertise, or local knowledge are routinely available to support the customers supply chain task.

Transport operators who are selected as contractors by SMC’s are ideally those best placed to do the work for the longer term and should expect to gain from the relationship. SMC’s can provide transport operators with obvious benefits in that a centrally placed well informed and technically able party is lifting the transport operators fleet utilization and lowering transport operators overheads through planning and systems. This is achieved without getting in the way of the contracted businesses independence. This partnership in itself can provide the benefits of local knowledge and relationships without compromising the SMC’s ability to release efficiencies related to scale.

For transport operators selected by an SMC, overheads are reduced. For example the SMC holding master rate schedules eliminates the need for duplication

Summary
Well resourced and expert SMC’s can make supply chain management simpler for customers and release efficiencies in the domestic New Zealand supply chain by using technology to plan and organize the best available unit across a large network to deliver goods when and where required. The arrangement relies on long term relationships and a well run SMC has something in it for everybody.

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10 May 2010