TRENDSreshaping the Supply Chain & Logistics Landscape in New Zealand

- A Generic Perspective

Walter Glass

Presenter

- Walter Glass MBS, BBS, FCILT
- Consultant, Lecturer, Company Director
- 16 years university post-grad Senior Lecturer in L&SCM
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- Corporate Logistics Ltd - L&SC contract/project management, research and strategy development, SC process and ERP systems work (lately to tidy up post implementation problems)
- wmglass@corpllogistics.co.nz

Corporate Logistics Limited, PO Box 1401, Palmerston North
Sobering Statistics

- Logistics & Transport activities account for around **13.5% of New Zealand’s total GDP**
- Logistics & Transport activities account for around **14.9% of Australia’s total GDP**
  - Bigger than Agriculture and Mining Combined.
- Source: CILTA Presentation 2009

- Logistics & Supply Chain Optimisation is a BIG Deal!

Definition - Logistics vs Supply Chain

If **Logistics** is the efficient utilisation of time and place within an organisation.

then **Supply Chain Management** is a broader, strategic function encompassing the co-ordination and integration all of the internal and external logistics activities.

(NB: Treat Supply, Demand & Value Chains as the same for our purposes)
NZ Wood Supply Chain Exhibits a Variety of Silo Structures

- Multiple forest owners, many small resource owners with various motivators to be in business
- Only a few large processors who value add to product, but with high compliance and labour costs
- Numerous Export Log Traders who sell into mainly commodity markets
- Price dictating Customers (China) & fickle influences (Russia)
- Minimal “Forest to furniture” integration (c.f. Ikea)
- Little cooperative integrated supply chain or marketing focus (c.f. Meat industry vs Fonterra, Cervena), and limited political voice
Sector Logistics Observations

Poor Logistics Preparation for the “Wall of Wood”:-
- Inadequate Government infrastructure and investment commitment (roads, bridges, rail and ports etc)
- A lack of integrated wood supply chain resource planning by Government (now doing “freight” and “emissions” studies)
- Impractical regulatory, environmental and compliance constraints
- Heavy trucks initiative - but will NZ bridges and roads hold up?
- Aging Human Resource Pool in heavy road transport and train driving, and inadequate replacement numbers (Australia is in the same situation)
- Shortage of fully trained and competent forestry/wood staff
- Workforce needs continual training to keep up with advances in mechanical and information technology to maximise advantages.

Reshaping Factors – (Optimisation)

- Technology and Information Advances
  - Optimisation tools for harvest, yield, transport, fuel monitoring, energy, processing and waste minimisation,
  - Production & Scheduling – log cut and optimising for mill requirements (MRP)
  - Traceability - RFID - log and lumber tracking
  - GPS - (e.g. Spidertrack - air) on trucks, haulers, excavators etc (even cellular)
  - AGV – FLT to large trucks
  - Enabling Technology - ERP – for log, lumber and finished wood products
  - Transparency - Front end Customer ordering interface in real time (XM Oxygen)
  - System Integration for transparency - VMI and Customer SLA’s
  - Renewable energy production sites
  - “Partnership” vs “Partnershaft” – maturity changes in B2B (I vs T)

- Environmental and Business Sustainability (Emissions, Kyoto etc)
- Recognition of Dynamic “Living Supply Chains” (**People factor**)
- Ensure Marketing & Supply Chain Integration
Generic Areas for Reshaping Supply Chains

- Optimise from source to consumption
  - Maximise Value Add close to source
  - Connecting demand and supply
  - Managing variability and uncertainty
  - Synchronising activity
  - Making consumer demand visible
  - Reducing complexity
  - Compressing time
  - Break down barriers
  - Making product available
Many supply chain networks can be complex.

Optimise SC Design and Value Add Potential (- reduce/eliminate Silos)

- Pressures on prices
  - Consumers
  - Competition
  - Economic

- Consumer Prices
- Supply Chain Performance
  - Reducing Gap
- Material Prices
- Globalisation
Inventory – minimise variability & uncertainty

PIPELINE STOCK
(REPLENISHMENT STOCK)
REDUCE BY ORDERING MORE FREQUENTLY AND HENCE IN SMALLER QUANTITIES

SAFETY STOCK
PROTECTS AGAINST UNCERTAINTY IN SUPPLY AND DEMAND, Restricts the flow

Reduce unnecessary Safety Stocks

SUPPLY
DEMAND
SUPPLY
DEMAND
SUPPLY
DEMAND
SUPPLY
DEMAND

Safety Stock
LEVEL 1
Safety Stock
LEVEL 2
Safety Stock
LEVEL 3
Safety Stock
LEVEL 4
Connect Demand and Supply

Suppliers → Manufacture → Assembly → Delivery → Customer

- **Purchased Raw Materials**
- **Sub-Assembly**
- **Finished Goods**

**Forecast Driven Activity**
- **Make and deliver to stock**
- **Make to stock**
- **Assemble to order**
- **Make to order**
- **Engineer to order**

**Order Driven Activity**

**Decoupling Point (DP)**

Optimise the “Cost To Serve” Balance

**Change Conditions of Supply**

**Change Customer Service Offer**

**Source** → **Make** → **Deliver** → **Cost to Serve**
Optimise the Cost to Serve

- Companies located at the left of the curve may be in a position to increase responsiveness while still reducing cost and moving toward the Frontier.

Understand Lean vs Agile

- Lean is trying to supply at lowest cost
- Lean does not mean Anorexic

- Agile is trying to respond very quickly to demand
- They should locate accordingly in the “zone of strategic fit”
Making Demand Visible

- Minimise obsolescence and stocks
- Minimise costs
- Maximise capacity usage

SUPPLIERS ➔ BUY ➔ MAKE ➔ MOVE ➔ SELL ➔ CONSUMERS

- Supplier Signal
- Manufacturing Signal
- Distribution Signal
- Sales Signal
- Actual Demand

Maximise availability and sales

Supply Chain Synchronisation

- PLAN
  - Buying frequency
  - Replenishment frequency
  - Order frequency

- PLAN
  - Buying quantity
  - Replenishment quantity
  - Order quantity

- PLAN
  - Shipping quantity
  - Schedule change lead time
  - Scheduling cycle & horizon

CUSTOMER
Wood Supply Chain Optimisation 2010

Reducing Complexity

NETWORK SIMPLIFICATION

SPECIFICATION SIMPLIFICATION

Compressing Time  Remove Constraints

PROCUREMENT TO STOCK

DELIVERY TO CUSTOMER

= 256+?
Eliminate Barriers

- Strong Functional Barriers
- Poor Communication
- Lack of Trust
- No Supply Chain Thinking
- Imbalance Between Supply & Demand
- Inaccurate Forecasts Create Mayhem & Anarchy

To reduce impact of inaccurate forecasts, to build trust by working together, to understand supply chain process, to break down functional barriers, to improve communication, to balance supply & demand, to reduce impact of inaccurate forecasts.

“Partner-shaft” vs “Partner-ship”
Supply Chain Business Process Maturity Grid

Stages of Operational Capability

- **Stage 1:** Functional Focus
  - Silo Supply Chain processes & data flows

- **Stage 2:** Internal Integration
  - Company-wide Supply Chain processes & data flows

- **Stage 3:** External Integration
  - Simple collaboration with Supply Chain partners
    - Common processes & data sharing
    - Shared performance metrics

- **Stage 4:** Cross-Enterprise Collaboration
  - Full collaboration with Supply Chain partners
    - Aligned business objectives
    - End-to-end processes and data flows

Key Enabling Technology Links Functions

- **E-BUSINESS**
  - PURCHASING
  - PRODUCTION
  - FORECASTING
  - PLANNING
  - WAREHOUSING
  - INVENTORY
  - TRANSPORT
  - DISTRIBUTION
  - FINANCE

Source: PMG
Points to Ponder

1. A $1 saved through better Logistics and Supply Chain Management goes directly to the bottom line of the company
   - (Money for nothing)

2. A $1 from increased Sales may contribute less than $0.10 to the bottom line

3. Supply Chain efficiency will have a significant impact on shareholder value

4. Supply Chain savings are on-going (sometimes in the $millions)

Recommendation

- **Independently** audit your supply chain structures regularly. It will bring a wake up call for system improvement and significant on-going cost reductions. *But use a L&SC Expert, please!*

Thank you for your time. - Questions?