

Achieving Freight Efficiency - Practical steps towards efficient product movement.

Charles Wilson of **AdvisorBase Ltd.** looks at a key recommendation of the ECR



Australasia report “*Efficient Product Movement*” that urges collaboration along the supply chain to reduce overall supply chain costs. Charles suggests that there are other practical steps that should precede collaboration and outlines an approach that typically reduces freight costs by 20%.

Supply chain collaboration with customers is an ideal, but, unless suppliers really understand the Cost to Serve and efficiency issues in their own supply chain it is difficult to know where and how to collaborate and how the collaboration should be rewarded or charged for. There is likely to be more “bang for the buck” in addressing freight efficiency first.

The main Cost to Serve components in the FMCG supply chain, not in order, are:

- § Funding inventory holding
- § Storage
- § Handling in and out of warehouse
- § Transaction processing
- § Funding accounts receivable
- § Freight

The focus of the “*Efficient Product Movement*” report is freight and for most FMCG suppliers, along with funding inventory holding, freight is the biggest single supply chain cost. So a practical starting point to improving supply chain costs is freight.

What to look for when reviewing freight?

In our freight diagnostic tool we evaluate the drivers of freight efficiency.

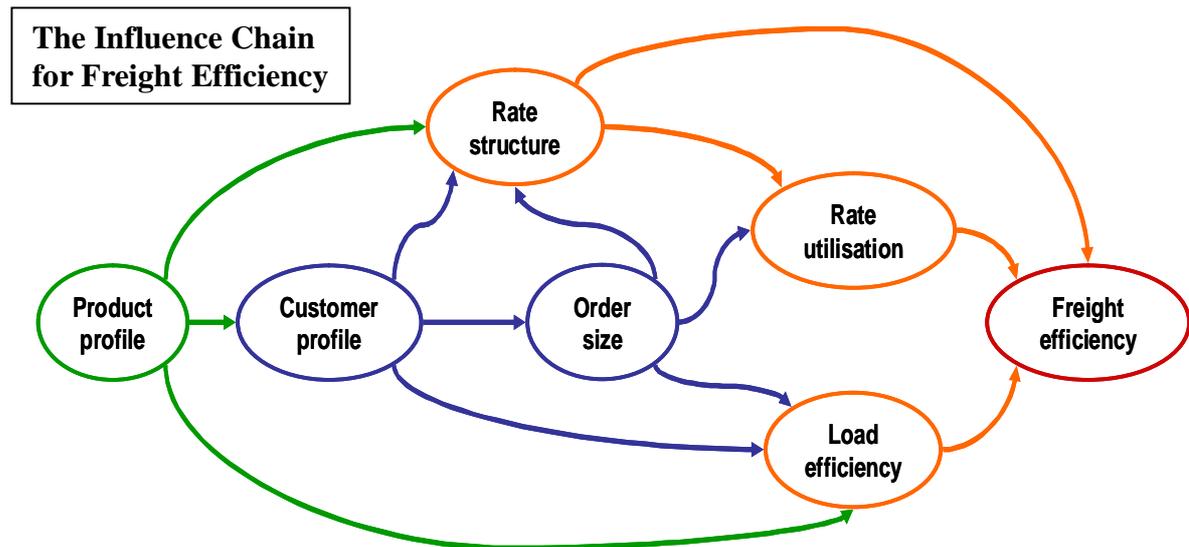
$$\text{Freight efficiency} = \frac{\text{Best freight charge}}{\text{Average actual freight charge}}$$

Specifically our freight diagnostic approach analyses the impact of what we call the “Freightful 6” causal factors in freight efficiency:

1. Product profile and mix
2. Customer profile and mix
3. Order size profile
4. Freight rate structure
5. Rate utilisation
6. Load efficiency

The drivers of freight efficiency are not independent of one another.

Looking at the influence chain for freight efficiency it is clear that a holistic approach to the question is needed. This requires solid analysis, recognising the cause-effect relationships and the practicalities of the FMCG industry.



#1 Product profile

Product profile, the type, packaging and mix of products sold, contributes to freight efficiency at the most basic level:

- § It determines customer mix – if you have no foodservice products, you have no foodservice customers. Only one or two foodservice lines will incur the costs of serving that sector without possible economies of scale.
- § It strongly influences freight rate structure through characteristics such as:
 - Product density (volume to weight ratio)
 - Product packaging and ability to stack
 - Special nature of product, e.g. daily fresh, chilled, or dangerous goods
 - Product value and security requirements
- § Load efficiency is directly influenced by the ability of product to utilise available load capacity.
 - Carton shape/size determines the ability to fully use pallet volume, for example poor product arrangement on pallets may mean paying for 10-20% more freight volume than actually used
 - Pallet height determines the ratio wood to product shipped.

Product profile is a variable and as a primary factor in the marketing mix drives company sales. Its impact on overall profitability is usually only viewed at gross margin level, but the impact of product mix on Cost to Serve can be substantial. For example, a change from 12 to 6 units per case may increase picking costs by 100%.

#2 Customer profile

Customer profile has a huge impact on freight efficiency through diverse factors such as:

- § Product sales, inventory holding levels and order frequency for each customer driving order size – the key determinant of freight efficiency
- § Geographic spread requiring special consideration in building the best suited freight rate structure
- § Special requirements such as separate pallets for each SKU even for less than full pallet quantities

Customer profile is not often seen as a variable, but it is. Suppliers can choose alternative routes to market to drive the number and type of customers they have. For instance they can choose to address the food service sector directly or through distributors. Clearly this decision goes beyond freight considerations and impinges directly on marketing and selling strategy. As an example, consider directly serving the route trade with small orders where freight may cost 80% of sales value when freight on consolidated orders to a distributor costs 5% of sales value – a 93% saving in freight costs!

#3 Order size

Order size is not always directly under supplier control, but is usually the single biggest driver of freight efficiency. Freight costs as a percent of sales can range from 400% of sales on very small orders to 1.5% on the largest orders!

Order size matters both as an average and as a spread.

- § The spread of order sizes determines the need for a freight rate structure to be competitive for anything from small parcel size orders to full B-trains.
- § Order size determines the way in which freight rates are utilised. Even the best rate structure will have some premium for smaller orders. Significantly increasing average order size can materially reduce total freight costs.
- § Order size as a driver of load efficiency is fairly obvious at the lower end when minimum charges are being paid. But order line size may also strongly drive load efficiency through the proportion of the load that is product and the portion that is pallet.



What can suppliers do to influence this key determinant of freight efficiency? Three main solutions present themselves and they are not mutually independent:

1. Under a national pricing regime (same size order to any location pays the same price) the most effective way of managing order size is through Cost Based (or Efficiency) Terms of Trade. This signals to customers, through appropriate discounts, the costs they impose on the supplier through their ordering behaviour. If the discount structure fully reflects the changes in supplier Cost

to Serve, suppliers are essentially indifferent to customers' buying behaviour. Customers can then choose the behaviour and corresponding discount that best matches their business needs.

2. Establish a VMI or CMI (vendor or co- managed inventory) with major customers to manage order size to an optimum level.
3. Align rep call cycles to optimise order size and where appropriate seek to consolidate multi-category orders.

#4 Freight Rate Structure

Checking freight rates is more than making sure the \$ rates are competitive. The actual structure of the rates can be even more important. If rates structure does not match business requirements then apparently "good" rates can turn out to be expensive.

- § Economies of scale. There should be clear economies of scale present in the rates to avoid large orders (and we want to grow sales) subsidising smaller orders.
- § Geographic differentiation. Freight rates should reflect the cost of serving different locations, central areas should not subsidise remote areas. For many suppliers most sales and sales growth is in the major centres. A subsidised rate structure may increase through a subsidy based structure.
- § Minimum charge level. Customer order profile should drive the agreed minimum charge and minimum charge load. What may look like the "low" rate often isn't, as the table below illustrates.

		SCENARIO 1				SCENARIO 2	
Load less than (tonnes)	% of product	Rate 1 (\$/tonne)	Rate 2 (\$/tonne)	Load less than (tonnes)	% of product	Rate 1 (\$/tonne)	Rate 2 (\$/tonne)
< 0.25 t	10%	\$ 20.00	\$ 30.00	< 0.25 t	0%	\$ 20.00	\$ 30.00
< 0.5 t	25%	\$ 20.00	\$ 30.00	< 0.5 t	10%	\$ 20.00	\$ 30.00
< 1 t	30%	\$ 20.00	\$ 15.00	< 1 t	40%	\$ 20.00	\$ 15.00
<5 t	25%	\$ 15.00	\$ 15.00	<5 t	30%	\$ 15.00	\$ 15.00
<10 t	10%	\$ 15.00	\$ 15.00	<10 t	15%	\$ 15.00	\$ 15.00
<25 t	0%	\$ 12.00	\$ 12.00	<25 t	5%	\$ 12.00	\$ 12.00
Average rate \$/t		\$ 18.25	\$ 20.25	Average rate \$/t		\$ 17.35	\$ 16.35
Freight efficiency		66%	59%	Freight efficiency		69%	73%

- § Rate basis, \$per tonne, or per metre cube, or per lift, or per carton, should match business characteristics. Ultimately one should pay for the freight capacity one uses in a way that best reflects the use.
- § Small order parcel regime. If a business deals heavily in small orders it is likely to require special freight arrangements backed by tailored sales, transaction processing and handling infrastructure.

Ultimately the only way to know that your freight rates are working for you, not against you, is to do the hard detailed analysis. A recent project identified effective (not quoted) rates as high as \$4,000/tonne (or, in that case 88% of sales) within the greater Auckland freight zone.

#5 Rate Utilisation

Even with the ideal rate structure there are likely to be ways to improve freight efficiency by using the rates better. The very best freight rate structure will still have its more expensive elements. Knowing which sectors of your business use the more or less expensive parts of the rate structure is essential to knowing how to improve freight efficiency. For instance, a company shipping 55+% of all orders at its highest freight rates needs to look beyond the rates themselves for efficiency gains.

The best way to signal how you want to use your freight rates to your customer is through Cost Based or “Efficiency” terms of trade.

#6 Load Efficiency

Customer, product and order profiles interact to influence load efficiency. Load efficiency is a measure of the portion of any load capacity paid for that is product. One would like to think this is close to 100%, but it would not be uncommon to record averages as low as 50%. What drives it?

Loaded pallet height (single SKU or mixed product) sets the base for load efficiency through the ratio of product height (or weight) to loaded pallet (pallet + product) height (or weight). There is a common misconception that having a volumetric rate (\$/m³) solves this problem but it does not, (see graph).

The impact of customers requiring a pallet per SKU is show to be quite dramatic on less than full pallet quantities. Some ask if the national supply chain afford this?

Other significant drivers of basic load efficiency include:

- § Mixed product pallets. It is difficult to fully utilise the pallet capacity
- § Light product on pallets that can't be double stacked in trucks
- § Truck configuration. Some carriers do not offer double deck (or mezzanine deck) trucks to carry light product – a full truck for 24 pallets when it could be 48?



Freight efficiency?

There are other factors such as delivery time slot allocation and compliance that effect the cost of a delivery, but most of these are not reflected directly in rates and so their effect on efficiency is hidden. Using the “Freightful6” above as a diagnostic framework for freight it is our experience that suppliers typically identify opportunities to reduce freight costs by between 10% and 25%. This also points suppliers to the importance of capturing savings available to them from within their freight operation before building inefficiencies into Cost Based (or Efficiency) Terms of Trade.