What will supply chains be like in a decade and a half? Supply chain thought leader and author **Dr John Gattorna*** says they'll be more important to more businesses; Asia will be the source of most supply chain innovation, and there'll be more planning for serious supply chain disruption. Read on for a glimpse into the future

# Asia Pacific supply chains 2020

The biggest change affecting the formation, operation, and performance of supply chains by 2020 is that enterprises throughout the Asia Pacific Region will regard them as central to the health and well being of the business, rather than just a functional activity as is the case in 2008. This change in philosophy will open up new areas of value extraction across the entire business, and up and down the supply chains that a given business is involved in.

Inside the firm, executives of all disciplines will recognise that they all have a contribution to make towards the performance of the firm's supply chains, formally and informally, because after-all, these chains provide the real-time linkages to suppliers and customers, which together represent the life blood of the firm. Some of the more sophisticated enterprises across Asia Pacific have the opportunity to lead the world by changing conventional silo-style organisation designs into more responsive 'clusters' of people focusing on the particular buying behaviours evident in their customer base. Hong Kong-based Li & Fung is almost there already.

And this realisation will not be limited to product-type organisations alone. By 2020, service organisations across many industries will be actively using supply chain principles to drive performance, including banks; insurance companies; tourist organisations; hospitals, and education establishments. These will all be using supply chain principles in search of the optimum service cost zone of performance.

## Oil prices and the green issue

'Sustainability' issues in supply chains will be well documented at global, regional, and domestic levels by 2020, and significant resources will be deployed to address the issues identified in areas such as ecology and corporate social responsibility. Already we are at a point where firms that ignore these factors run the risk of being identified by investment houses and consumers alike, and sustained campaigns developed to expose their unacceptable practices, which in turn affects the share price.

The impact of oil prices at US$200 per

barrel will have changed the way transport (all modes) operates. At current levels of around $160 per barrel, this mark is closer than we thought possible a few years ago.

But as we stand today, very few initiatives of substance are under way across Asia Pacific. The rapid development of alternative fuels will begin to impact by 2020, particularly for automobiles. Congested roads in city environs will mean most deliveries are at night, and the associated noise element will be strictly monitored. Nationally, much more freight will be carried by modern rail links. In Australia and India this will be the case, for different reasons.

Australia in particular will see a resurgence in rail transport to cover the vast distances of this island continent. Brisbane will become a major new intermodal hub, where rail, road, and sea all converge. Another major hub, similar to but smaller in scale to Dubai and Singapore will be emerging in the western suburbs of Melbourne. Parkes will be Australia's 'inland port', sited strategically in relation to Melbourne, Sydney, and Brisbane. A new rail link will connect Darwin and Brisbane, and much of the freight hitherto coming around the East Coast will move on this link between Darwin and Sydney.

In India, the rapidly growing demand for consumer goods will be served by new free trade warehouse zones (FTWZ) established in key cities such as Mumbai, Delhi, and Chennai, all linked by fast modern rail services.

## Outsourcing and co-opetition

'Outsourcing' as a practice will be entering its third or fourth generation, and the early thrust to outsource everything will be well behind us. By 2020, companies will know which parts of their business to outsource to third parties, and which to keep inside.

Essentially, if you need speed and agility to service a fast-changing market, outsourcing from long distance locations will not work. Indeed, there is already evidence that some companies have realised this and are withdrawing parts of their product range from foreign manufacture, and accepting the higher local costs of production as the premium they must pay for greater speed and responsiveness to their markets.

Australia, in particular, because of its lack of world scale in many of its industries, will have moved to 'industry level logistics consortiums', where the majority of competitors in an industry will use a single industry-owned logistics entity to undertake all the physical activities. Several industries are prime candidates for this revolutionary business model, including pharmaceuticals; FMCG; electronic high-tech; oil & gas; and building materials. This new approach will also have the beneficial effect of increasing transport utilisation, and in the process taking pressure off the environment through a smaller carbon footprint.

But to get to this stage will require the various anti-competition authorities in Australia and across the region to become more comfortable with the commercial arrangements between the competing parties working together in such consortiums. In my view this will not be a problem because a rational economic argument can be made for this special type of collaboration. These same parties will still be able to compete in other factors in the marketplace such as price, product range, brand, and a host of other dimensions. Co-opetition becomes a reality at last.

## Supply chain 'disruption'

Perhaps one of the biggest issues on the minds of business executives in the years leading up to 2020 will be the potential impact of 'disruption' to their corporate supply chains, irrespective whether the cause is terrorism, natural disasters, delays in supply, or systems' failures. Already we are seeing that such disruptions can have up to a 30% negative impact on a firm's share price, and the effects can last for up to three years! It is time for more attention to contingency planning.

We will witness a rise in genuine collaboration as firms mature in their understanding that supply chains only produce results that reflect the weakest link in the chain. Added to this will be the realisation that if we get caught up in internecine disputes with other parties in our supply chains, international competitors will benefit as customers go elsewhere.

The Australian coal industry is a good example where a lack of collaboration in certain regions is hurting the industry in total. High levels of collaboration are particularly relevant where multiple users, big and small, must share infrastructure such as railways and ports. By 2020, ways will have been found to get the maximum volume through these constrained capacity facilities, on a fair and equitable basis for all.

Finally, Asia Pacific will by 2020 be a region of world-class innovators in various industry supply chains, and many of the methods developed across the region will be applied elsewhere in the world. Most of the new business models introduced to supply chain design and operation will come out of Asia Pacific and India over the next few decades.

But to get to this point we need more interest and funding from governments; more genuine interest from universities so that sufficient talent will be available to commerce and industry, and a wide range of incentives to encourage and reward innovation at every point along domestic, regional, and international supply chains. I am confident the next generation of business leaders in Asia Pacific will rise to this challenge and take us in the right direction, the fruits of which will be very evident by 2020.

# Lean supply chain configurations work, but only in appropriate market conditions

**by Dr John Gattorna**

Are lean supply chains the answer to everything? In a word, quite definitely "no"! But judging by the way the lean concept is being pursued in many enterprises you would think the opposite. Indeed, lean ideas are at best confused, and misleading at worst, which has led to unreasonable and unfulfilled expectations.

We have seen it all before. People in hot pursuit of the 'silver bullet' often missing the subtleties.

There is no doubt that the application of lean principles brings benefits in the form of waste elimination in materials, processes, time and information. But sometimes this is achieved at the expense of agility and

flexibility. Taken to extremes, lean can make a logistics network brittle and prone to failure because of the lack of embedded redundancy. Not an easy concept in today's cost-driven world!

## Predictable demand

The problem is that the original lean manufacturing principles as espoused by Japanese automotive manufacturers do not translate well into the wider contemporary supply chain operating environment, where volatility of demand often requires quite the opposite - more rather than less capacity, some of which is redundant for at least some of the time and can therefore be costly. But it is also necessary, if you want to serve anything other than predictable demand patterns.

The original lean concept as applied in the relatively controlled manufacturing space implied predictable patterns of demand, and a high level of collaboration with suppliers on the supply side. The idea was to help each other to reduce waste rather than just move costs around. Unfortunately, these conditions, while they still exist in many industries today, are far less prevalent than in the 1980s.

What we now know about customers on the demand side is that they display a range of dominant buying behaviours, and this has to be matched by a corresponding set of responses from the immediate suppliers. This is my proprietary concept of 'dynamic alignment'. In brief, this concept, which applies on a whole-of-enterprise basis, requires that supplying companies should hard-wire at least three or four different responses into their business if they are to have a chance of aligning with the majority of their customers. Lean is just one of a number of possible responses.

## One-dimensional response

On the demand side, my work in many different markets with a myriad of product/service categories has revealed that not all customers are, or even want to be, collaborative in their dealings with their suppliers. Some customers are straight out adversarial; others are demanding and require quick response, and still others throw caution to the wind in desperate situations and expect their suppliers to come up with innovative solutions to their problem of the day.

And customers can change their preferred behaviours for short periods from time to time. So a one-dimensional response such as lean is not going to suffice; multiple response options are mandatory, delivered side-by-side as the market demands. Much the same situation applies on the supply side, where suppliers are now customers of processors further upstream in the supply chain and hence need to engineer a range of procurement strategies.

So the lean supply chain variant of the original lean manufacturing concept is more about seeking a low cost-to-serve by ensuring that customers downstream are not over serviced, and correspondingly resources are not wasted in the process. Remember, most if not all enterprises are over servicing some customers, and under servicing others; the problem is to identify which is which!

In lean supply chains as I define them above, low cost is achieved, often in quite adversarial circumstances, by doing the basics well, no more, no less. The more 'collaborative' style of supply chain (which I have labelled the Continuous Replenishment supply chain) is something different again. Here, customers (on the demand side) freely and willingly share information, get involved in joint initiatives, and generally seek a long-term stable relationship with a few key suppliers.

But in the classic lean supply chain, customers are not so willing to share, so suppliers have to produce their own forecasts based on historical experience - which works okay in predictable market conditions, but is a disaster in volatile markets! And yet we see many enterprises pursuing ever more accurate product forecasts in these volatile markets when they should really be focusing on forecasting future capacity requirements. Classic lean supply chains are all about 'push' based on forecasts, whereas more collaborative practices allow Continuous Replenishment supply chains to be a combination of 'push' and 'pull'.

On the supply side, it is more likely there will be collaboration, especially if the power balance is in favour of the customer. Look at the situation that suppliers to Wal-Mart face. They hardly have a choice, so is this genuine collaboration based on their deep-rooted company values, or a type of forced co-operation?

For genuine lean supply chains, the value proposition to customers on the demand side is one of providing a standard, consistently reliable low cost service, one that customers can always bank on. They know what they can expect, and plan accordingly. The primary focus of suppliers facing this situation is on efficient operations, producing products and services in high volume, low variety, and strictly to forecast. The key is scale, and synergies in production and logistics. That is the good news. Now for the complications.

## Reduced agility

The parameters involved in designing and operating lean supply chains as I have defined them, come at the cost of reduced agility. Agile supply chains, which are necessary in more unpredictable market conditions, require excess capacity on standby in order to be in a position to respond quickly. This is the world of make-to-order (MTO) compared to the make-to-forecast (MTF) world where lean supply chains flourish.

So what have we learnt? Lean supply chains are more complex than their more conventional manufacturing variant. And taken alone, lean supply chains are unlikely to be sufficient to service a disparate range of customers who between them may exhibit up to three or four distinctly different dominant buying behaviours – only one of which will be adequately served by a lean configuration. Hence the concept of multiple supply chain alignment, where supply chains of different configurations operate either in parallel or in various combinations to cover the range of customer buying behaviors evident in a given market.

So how far do you go with implementing lean principles? Only the market can answer this question. Look at how the market is structured in terms of the relative sizes of behavioural segments present, and this will inform you how much emphasis you need to put on lean principles inside the enterprise.

Go lean where it is appropriate, but recognise that other pathways to customers are likely to be required, in parallel or in series, and above all, in synch. This may be the uncomfortable reality inside the enterprise, but companies in hard-pressed industries such as fashion and apparel are already experimenting with new organisation designs to make this plurality possible. ■

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