



The whip cracks

Professor Hau Lee tackles the bullwhip

Bullwhip effects in the chain, to use an American turn of phrase, will always exist.

That is the view of Professor Hau Lee of Stanford University in California. Advanced Planning Systems cannot prevent bullwhips: joint planning with the client is the only solution.

By Martijn Lofvers, Editor in Chief

Hau Lee was pleasantly surprised at the fairytale surroundings of the Efteling. On 5 September 2007, the famous professor from the Stanford Graduate School of Business flew over on a lightning visit from Palo Alto in California to give a presentation at the seminar in the theme park on bullwhip effects. Before the seminar started, he was happy to take time out to talk to SCM.

Why are bullwhip effects still an issue in spite of all the attention paid to them in recent years?

'For two reasons. Firstly, the world is changing, with new industries and countries emerging. This creates more population groups. This always causes disruptions in demand, and that's why bullwhips come about. Secondly, external causes such as a tsunami, 9/11 or an earthquake generate disruptions. Companies panic when these sorts of events occur, they forget what they've learned and old habits creep back in. Companies have to be retrained. It's a fairytale to believe that the battle against bullwhip effects will ever end.'

What are the specific causes of bullwhips?

'It mostly comes down to visibility in the chain and communicating without checking things. The result is a bunch of bad data. When there was all the hype about RFID, tons of data were generated. The mass of contaminated data meant that the tags often had to be scanned twice. It's also often due to the fact that the parties involved have different definitions: in some companies the administrative month starts halfway



through the calendar month. An additional point is that with data sharing, the intelligence – the background to fluctuations – is not yet shared. The earthquake in California in 1989 caused shockwaves in demand: people suddenly started stockpiling stuff – particularly flashlights, batteries and tinned meat. These days we have direct access to all sorts of data, but we still lack data with intelligence.'

What strategies can businesses employ to combat bullwhips?

'First of all, don't take all data at face value. Understand what's behind it. Go to the customers' customer. And start working more closely with customers. Understand what the constraints in operations are. Ask yourself what would be beneficial for both parties. Three levels of supply chain integration can be identified: firstly, data sharing; then, explaining it in weekly meetings; and finally, the joint creation of a plan. Identify your strategic partner; don't get into Collaborative Planning with every party. Some companies are easier to work with than others. For example, at General Motors it's more difficult to work internally with the different divisions than externally with suppliers and external clients who generate sales. The bonus structures in use can sometimes disrupt the partnership. And every supply chain has its own master. Wal-Mart is the master of the retail supply chain, while for microprocessors it's Intel. Cisco is also a master, not their customers. They can dictate what to do with inventory. The most important thing is to share data about customer demand, not performance data. The 'gaming' aspect [Ed: over-ordering during shortages] is a result of lacking data about performance measurement. Generally, businesses do well when it comes to internal performance indicators, but they need measurements on the interfaces between companies. A lot of aspects are not concretely measured. It's good to measure on-time delivery performances but flexibility is difficult to measure

EMERGING SUPPLY CHAINS

At the beginning of this year Springer, publisher of titles like Supply Chain Magazine, published the latest book by Professor Hau Lee: 'Building Supply Chain Excellence in Emerging Economies'. The book can be ordered for € 79.95 from www.springer.com.



because it's all about experience and perception. Ensure conformity as far as flexibility is concerned: for example, how to operate when there's a 30% increase in demand. If no agreement is made, you damage the relationship.'

An article by Philips Electronics about the bullwhip effect opens with a description of a weekly planning meeting with the client. Why can't Advanced Planning Systems solve this problem?

Hau Lee, who sat on the board of APS vendor Manugistics a few years ago, explains, 'In the Philips article it says that the internet is suitable for data sharing. But data can be misleading. The internet is therefore not a suitable platform for sharing intelligence. Planning meetings are a better way. Over time this Collaborative Planning can be automated. The introduction of new products and the entry of new markets can't be automated. APS applications will never completely dominate. You can maybe manage 60 or 70 percent of your products with APS. The fact is, the world is dynamic. People like new tastes, and businesses like new markets and new market geographies. The most difficult thing is to plan products that undergo a transition. Overlapping product life cycles of old and new products make it even more difficult. In the world of computers, games and DVDs you have simultaneous worldwide launches instead of successive ones, as in the past. And different countries react differently to these launches: some countries adopt

new products right away, others don't. Some companies are failing to capture data with a geographical background.'

An article by the University of Leuven compares congestion with the bullwhip effect. What are the similarities between these two phenomena?

'Indeed there are similarities with congestion. Which is why in England they call the bullwhip effect the 'acceleration principle'. Using simulations, like we do when congestion occurs, is something we've not yet put it into practice, but it is useful for scenario planning. Intel uses simulation when introducing new products to consider what Canon would do, for example. It's all about visibility of more than one stage down the chain. The more you can see in the total supply chain or at least one stage further than the immediate, the better.'

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Supply Chain Management Series

Professor Hau Lee was invited to the Netherlands at the beginning of September by TruEconomy. This consultancy firm started a series of seminars this autumn at the Efteling, called the Supply Chain Management Series. On 10 October the second session was held, entitled 'SCM Technologies: ERP versus APS'. For more information: www.trueconomy.nl.