

THE GREEN SUPPLY CHAIN

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This is the second article in the series on the different aspects of Supply Chain Management initiated by Erik Juul Rasmussen. Industries going green seem to be everybody's business, and the brewing industry is under the spotlight, too. A green approach that eliminates waste can only be good for business as it reduces costs and raises the image of the company.



Throughout the world, organisations are being forced by governments and by social pressure, including their customers and end users to consider green environmental issues.

Often, those that are calling for direct action are expecting others to take the action. An example of this pressure on producers and suppliers is that of Walmart (Editor's note: The world's largest US-based retailer) who in February this year claimed that they will cut some 20 million metric tonnes of greenhouse gas emissions from their supply chain before 2016. This equates to removing more than 3.8 million cars from the road. Although this is laudable, closer examination shows that Walmart themselves, not being a producer or manufacturer, are expecting their suppliers to take action. The focus will be on products with the highest embedded carbon footprint such as milk, bread, meat and clothing, and the suppliers of these products are being 'asked', in effect told, to examine the carbon lifecycle of their products from raw materials through to recycling. Costs involved in being energy efficient, such as re-designing of packaging and use of organic fertilisers, will be for the supplier to cover and apparently it is expected that any savings made, for example with cheaper packaging and less freight costs, are to be passed on to Walmart.

On the other hand, no matter who is calling for action, energy efficiency must benefit any organisation. A good example is the Sierra Nevada Brewing Company (Editor's note: the second biggest US craft brewery with yearly sales of ~ 1 mill. HL) that, since beginning operations in 1980, has successfully combined a green focus with the production of a quality product. Their approach has three stages:

1. Input materials and supplies
2. Processing
3. Waste; re-use, re-cycling, and waste disposal.

Input materials, where possible, are obtained from 'green' suppliers. This includes, malt, yeast, hops, water, CO₂, glass, pallets, cardboard, stretch wrap and office stationery. Green suppliers are those who are energy efficient, who use organic fertilisers, and use recyclable materials and materials that are biodegradable. Sierra Nevada have their own carbon dioxide recovery plant that recovers CO₂ gas from fermentation,

purifies the gas, and re-uses it in the brewing process. They claim that this creates a quality of CO₂ that is of a better quality than can be obtained from commercial suppliers.

For the processing plant, they installed four 250kw fuel cells in 2005, and subsequently in 2007/8 they installed America's largest private solar power system. The fuel cells plus the solar system mean they are now self-sufficient for electricity and have a surplus which is sold to the Californian state grid.

Waste management includes operating their own water treatment plant. Organic waste such as grains, yeast, and hops are recycled and used as animal feed. They have their own estate for growing hops.

Not only does Sierra Nevada have an excellent reputation, plus awards for being green, they consistently win awards for their lagers, ales, stouts, porter and barley wine.

Heineken also is taking proactive green measures. This year they published plans for the next ten years (2020) to reduce carbon emissions by 40 per cent and water usage down from 4.9 litres per litre of beer to 3.7. This is well behind SABMiller's aim of 3.5 litres of water per litre of beer by 2015 or Anheuser-Busch InBev's even more aggressive aim of 3.5 litres per litre of beer within the next 18 months (by 2012).

One InBev brewery, the Budweiser brewery in Georgia, USA, could serve as a benchmark for water usage per litre of beer. In 2007, following a disastrous three year drought, regional authorities required industrial users of water to reduce consumption by 10 per cent. Budweiser produces up to 8 million barrels of beer per year and thus was a major consumer of water. To reach the target of 10 per cent, the brewery carried out an audit of the water 'foot print' per bottle which included cleaning, cooling and steam production. By re-using (reclaiming) rinse water for heating and cooling, the net water use in the power house was reduced to zero and overall only 3.1 litres per litre of beer is now used.

SAB Miller has gone further. They considered water usage across the whole supply chain including farms growing raw materials. They found that in South Africa, due to large scale irrigation, 155 litres of water was being used per litre of beer, and in the Czech Republic the ratio was 45:1. Working with growers, SAB Miller is developing ways of reducing water consumption. →

From the above, it can be seen that green issues are not just political or societal issues, they are vital issues for the performance and sustainability of any organisation (saving water not only reduces costs, it also leads to sustainability and an improved public image).

Internal standards, policies and environmental management are now commonplace. Indeed many organisations advertise their standards and go out of the way to publish what they are doing 'to save the planet'.

The green supply chain includes the producer, the suppliers to the producer, and – downstream – the customers out to the end user. Other stakeholders and influencers are governments, regulatory bodies and the general public (irrespective of whether they are or are not consumers). The following exhibit shows that for the brewing industry:

1. The general public are aware of green issues, but not a direct driver for the industry. However, their concerns cannot be ignored, and they are heavily influenced by the media who are quick to publish any adverse green effects or poor practices.
2. Governments, especially western governments, have taken a strong green stance and in the long term, no producer can hope to avoid legislation, regulations and green audits.
3. Customers, however, in the form of the end consumer, are not a key driver. The consumer might read the label and react positively to words such as 'natural', but most are more interested in consistent quality and taste (and price) rather than 'green' issues.
4. Suppliers are the Achilles heel. No matter how efficient the brewery is, it is difficult to enforce green thinking and compliance on the various tiers of suppliers, especially remote overseas suppliers.

Once it is accepted that there is a growing public interest and

that governments cannot be ignored, internal green actions are not only ethically desirable but will reduce costs. The real issue is how to manage the suppliers. This is where problems can arise and lead to bad publicity. Media investigations can uncover a problem with a third tier supplier and the producer's reputation will be tarnished. An example in another industry illustrates this. The Body Shop (now owned by L'Oreal), the British cosmetics giant, who built their reputation on organic based cosmetics claimed to be sourcing ingredients from companies that protect local farmers. However, in September 2009, it was reported that 90 per cent of palm oil used by the Body Shop was sourced from Daagon Organics in Columbia and that Daagon was a leading member of a consortium that used riot police to evict 123 long tenured families in order to grow palm oil plants on their land. It could be argued that the Body Shop acted in good faith and were unaware of the actions being taken by Daagon and the police. The media, however, showed no mercy and it was said that the Body Shop had an obligation to audit their suppliers. In short, if a company advertises its standards and then sources from suppliers who do not follow those standards, they are likely to be accused of misleading advertising.

As far back as 1979, Royston provided an eight point strategy of environmental protection for a manufacturer:

1. Cut down waste by improving efficiency
2. Sell waste to someone else
3. Build an extra plant to convert waste into raw materials or products which are valuable to the company or to someone else
4. Work with state authorities and local communities to agree conditions for disposals
5. Negotiate emission standards and subsidies with local authorities
6. Build a treatment plant jointly with another enterprise or the local authority for residual waste
7. Build the treatment plant using own staff and know-how
8. Sell the acquired know-how to others with similar problems.

It is a truism dating back to Frederick Taylor (1947) that if it can't be measured it can't be managed. With any improvement process, the first stage is to establish the base line (where are we now), set targets, and audit and measure progress. Royston recommended forming a high level Energy and Environment committee to set targets for waste avoidance. The committee would be responsible for:

1. Establishing programmes working with shop floor personnel,
2. Identifying legislative trends, and
3. Predicting future waste costs in light of present expenses
4. Reporting progress to management and
5. Auditing savings.

These recommendations are still very relevant. Today, assuming that we have got our own house in order, we recommend including key suppliers and immediate customers in a working group to look at the supply chain to determine where costs can

be reduced by elimination of waste for the benefit of all parties. No matter what our own stance is on climate change, it cannot be denied that the brewing industry is under the spotlight, and has to be seen to be taking action. This paper advocates that a green approach will save costs, raise the image of the company and, overall, will be good for business. A win-win scenario. ¹

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GREEN PARTICIPANTS

