Lube-Tech

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Sustainability...

and the Global Lubricants Industry

*Apu Gosalia, FUCHS' Head of Global Strategic Marketing and Chief Sustainability Officer presented the following key note paper at the recent 16th ICIS World Base Oils & Lubricants Conference held in London, that considered what had changed in the global lubricants market. His paper covered the process and value chain of markets, manufacturers, mergers and finally some new movements that are also affecting the worldwide lubricants business: **Sustainability and Resilience**.*

Markets

Gosalia began by reflecting that three years ago in February 2009, when he last spoke at ICIS, most of the world was right in the middle of the economic and financial crisis and at the beginning of a remarkable year for the worldwide lubricants industry too, as it turned out to reveal the lowest level of global lubricant consumption ever in 40 years, since FUCHS started to record lube market data, trends, etc.

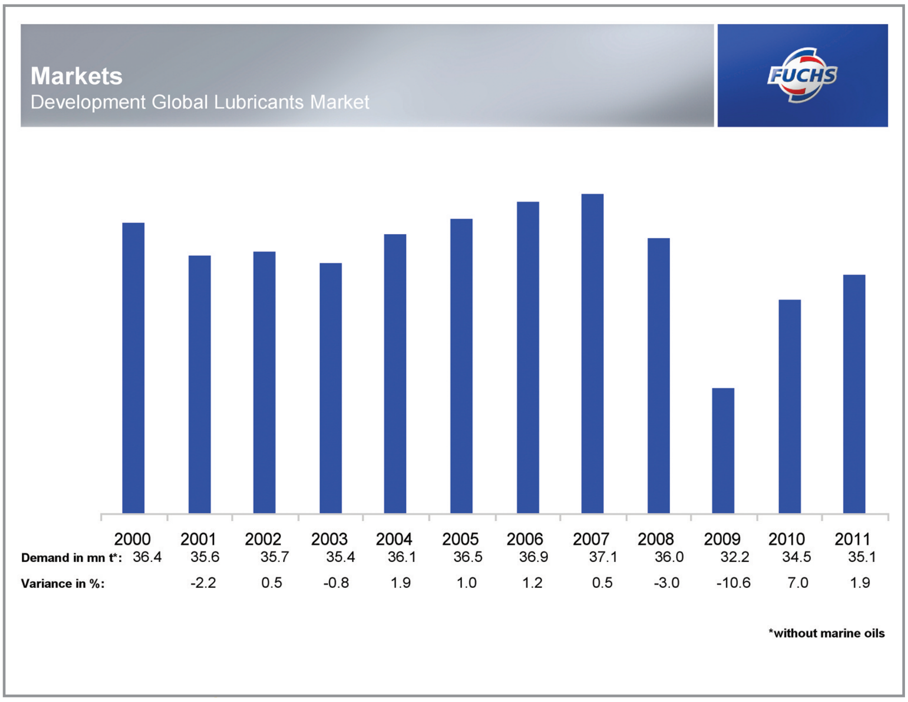
Since then, a lot of things happened...

Gosalia started by looking at the global and regional lubricant market developments.

The global lube market volume was at around 36 million tons at the turn of the millennium and more or less quite stable till the year 2008. Then, lubricants demand plunged by more than 10% year-on-year on a worldwide basis to just around 32 million metric tons in 2009, some regions – especially Europe – were hit much worse. 2010 saw only a partial recovery in light of the partly unexpected rapid economic growth, but not quite back to the old level.

FUCHS believes 2011 was up by about 2% over that, so overall the market was back to around 35 million tons, i.e. to the level of demand last seen in 2003.

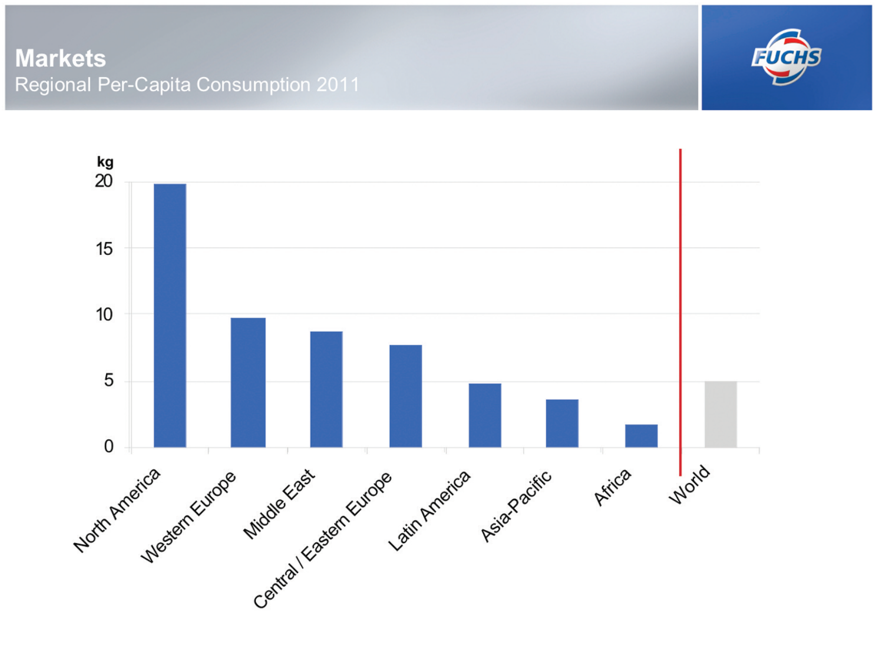
However, Gosalia does not believe that we will see the peak numbers of years 2006/2007 again short term.



The 2% year 2011 growth in lube consumption on a regional basis came from the emerging markets of Asia-Pacific and Latin America, where demand increased by around 3% for each region. The 3 BRIC countries in these 2 regions (China, India and Brazil) were the growth drivers once again.

The remaining regions, including the mature market of North America, increased by around 1% over 2010, except for Western Europe, where demand more or less stagnated.

With this difference in lube consumption of just a little over one million tons between 2000 and 2011, one could think that not much happened over a 10-11 year time frame. But in fact, when the underlying regional lube market dynamics were looked at, the changes were enormous in terms of quantity and quality.



The Asia-Pacific region together with the Rest of the World (ROW) accounted for little more than 1/3 of global volume in 2000 and now makes more than 50% of the total volume, as a result of growing industrialisation and motorisation and consequently higher consumption. The mature markets Western Europe and North America experienced a continuous move to the use of higher quality lubricants with longer oil drain intervals and this produced lower consumption, as a result of these efficiencies.

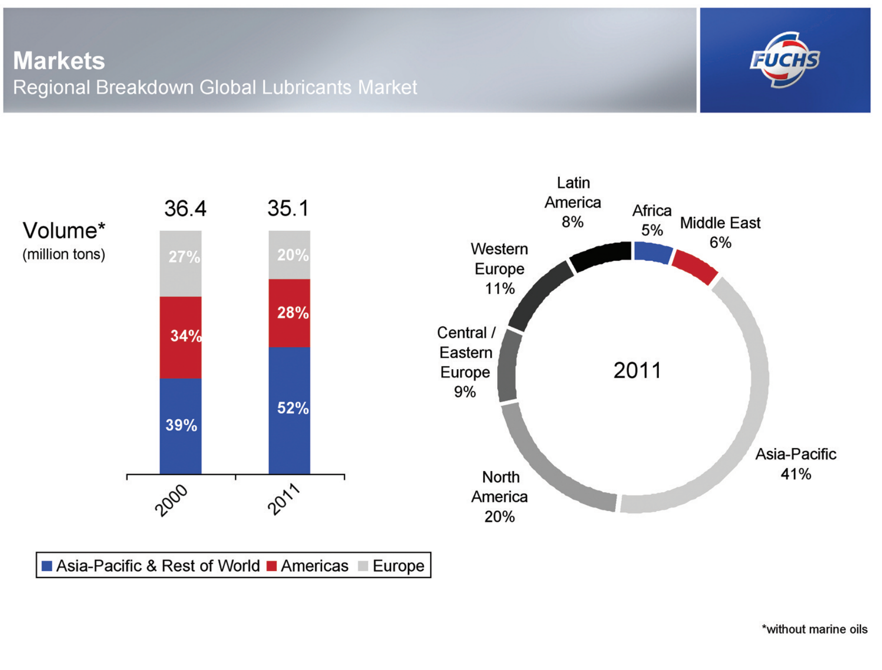
Europe and the Americas lost in equal relative terms, what Asia-Pacific and the ROW gained with regard to lube volume consumption. Today, the Asia-Pacific region, sharing 41% of global demand, consumes twice the lubes per annum than North America does, with a share of about 20%.

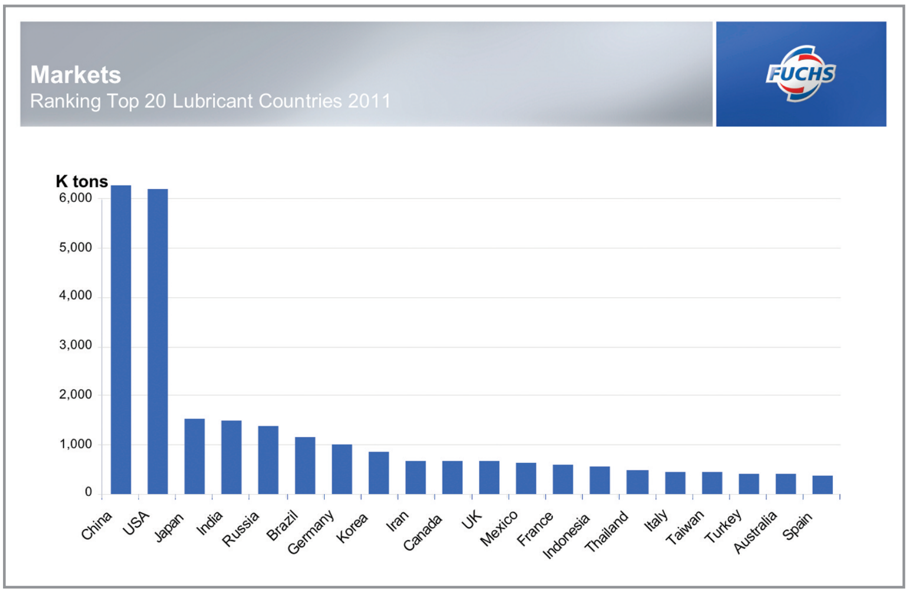
Even more interesting was the fact, that North America's lube consumption per-capita of 20kg was still twice as much as Western Europe's 10kg, which of course was the result of a quantity vs. quality issue. Over all, the world consumed 5kg of lubricants per-capita in 2011, in spite of the aforementioned above average per-capita consuming regions, because Asia-Pacific and Africa, who represent nearly half of the global lube market, still have a per-capita demand of below 5kg.

Therefore Gosalia said it made sense to look deeper in to these regions on a country-specific basis.

The ranking of the top 20 lubricant countries, which make up close to 3/4 of the worldwide lube consumption in terms of volume, was headed by China and the US, together already accounting for 1/3 of global demand and switching positions since 2009, neck-and-neck with roughly 6 million tons of lube demand each.

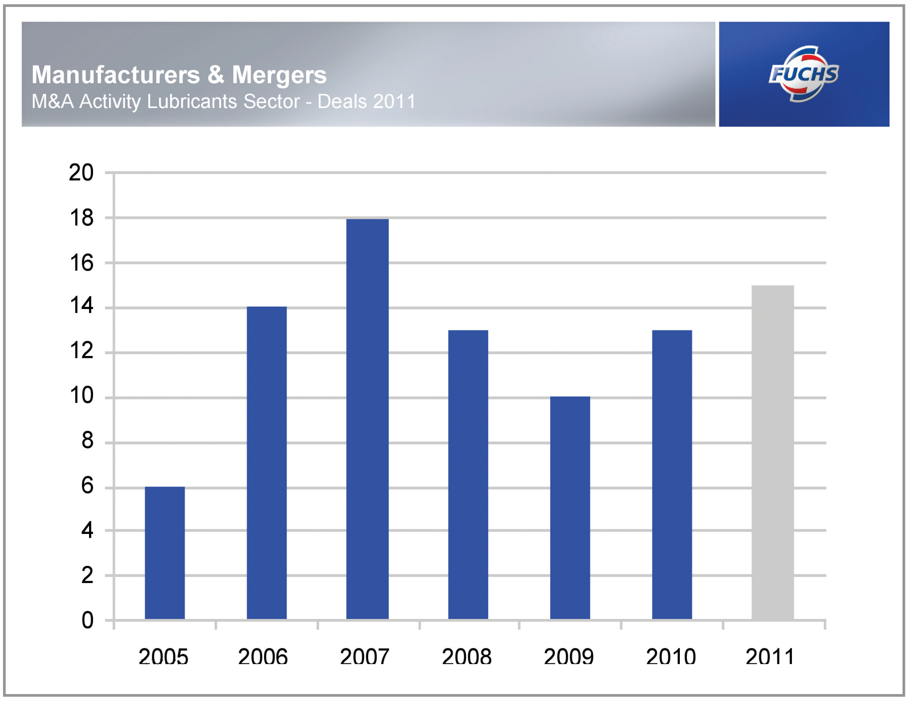
In terms of per-capita consumption, the US was the second largest single market with the highest per-capita consumption;





each inhabitant consumed 20kg of lubricants in 2011. Whereas, China as the largest market in the Top 20 has the second lowest per-capita consumption with only 5kg of lubes consumed per person.

Gosalia considered that this showed the growth potential, that lies in a country like China, although it is not expected to ever reach the US' per-capita demand, as quantity and quality growth at the same time 'work against each other'. Instead, China has already started its transition to become a mature market and a more probable model would be that it will reach Europe's overall lube consumption of around 9kg per person. Extrapolating this, sometime in the future China's total lubricant market will reach 12 million tons, while Europe has no potential for volume growth any more. Here the growth will be in quality, not quantity, as the region, especially Germany, is a technology driver.



By contrast, Turkey (number 20 in the 2010 ranking) has enormous potential and was the hidden giant of Europe. Among the top 20, it was the only country that climbed 2 positions up in the ranking and achieved the highest growth in relative terms with 7% in 2011.

The breakdown by product groups in the past 10 years only slightly changed, with 56% of all lubricants still going into automotive oils (such as engine oils, gear oils and transmission fluids), which continue to be the prevailing product group and largely dictate what will be available (or not) for making other products. Gosalia stated that industrial oils account for 26% of the total, with the rest comprising process oils, lubricating greases, metalworking fluids and corrosion preventives.

Manufacturers and Mergers

According to a FUCHS study conducted seven years ago, the structure of the global lubricants industry changed significantly between the mid-1990s until 2005.

Gosalia went on to say that the number of manufacturers decreased by close to 60%, in nominal terms by around 1,000 players from around 1,700. This has left just over 700 market participants at the end of 2005. The consolidation and concentration proceeded more vigorously within the small-sized and independent lube manufacturers sector, whose numbers halved between 2000 and 2005, to around 600 players, down from around 1,200 at the beginning of the millennium.

At the end of 2005, the top 10 manufacturers still held around 50% of the worldwide lube market, while the rest of more than 700 manufacturers shared the other half.

The global Merger & Acquisition (M&A) activity in the lube industry (by number of deals) increased from 2005 till its peak in the year 2007 and then declined till 2009, but improved to reach the pre-crises level of 2008 again in 2010, however not yet the peak level of 2007.

In 2011 FUCHS counted 15 deals in the global lubricant industry, just 3 less than

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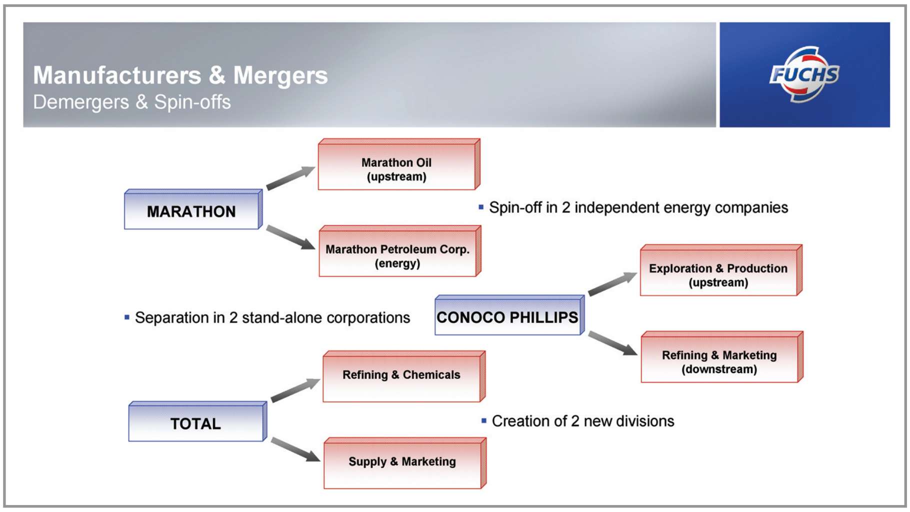
in the peak year 2007. M&A activities changed the ranking of the top 15 lubricant manufacturers over the years. Highlighted below are some of the major shifts between 2000 and 2011:

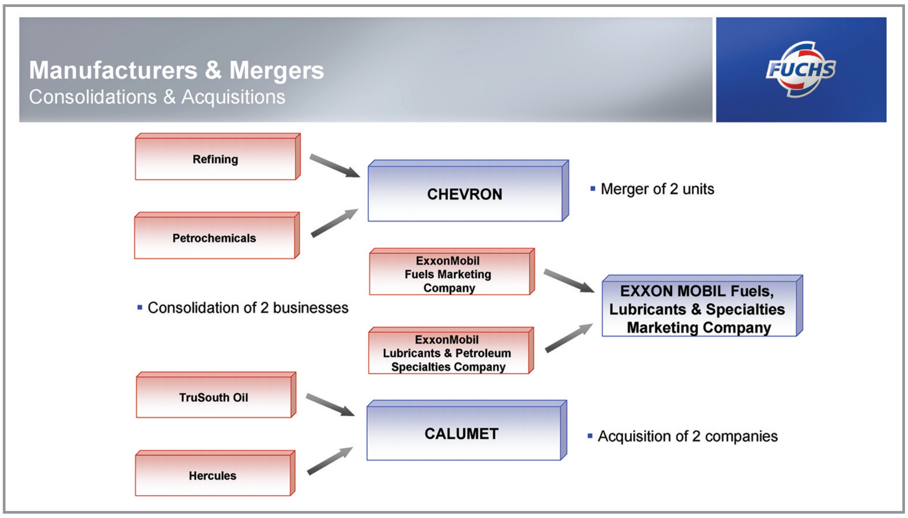
1. EXXON and SHELL switched leading positions (SHELL acquired e.g. PENNZOIL, who were ranked 6 in 2000)
2. FUCHS maintained the top position as largest independent lubricants manufacturer in the world over the past decade and gained 3 positions in the top 15 ranking of all global lube players, including vertically integrated Majors, and made it into the Top 10.
3. PERTAMINA and PETRONAS newly came into the top 15 ranking, while AGIP and REPSOL left it (the latter even before the government in Argentina decided to nationalize YPF as happened recently, in which REPSOL once owned 57% and now only has a 6% stake).

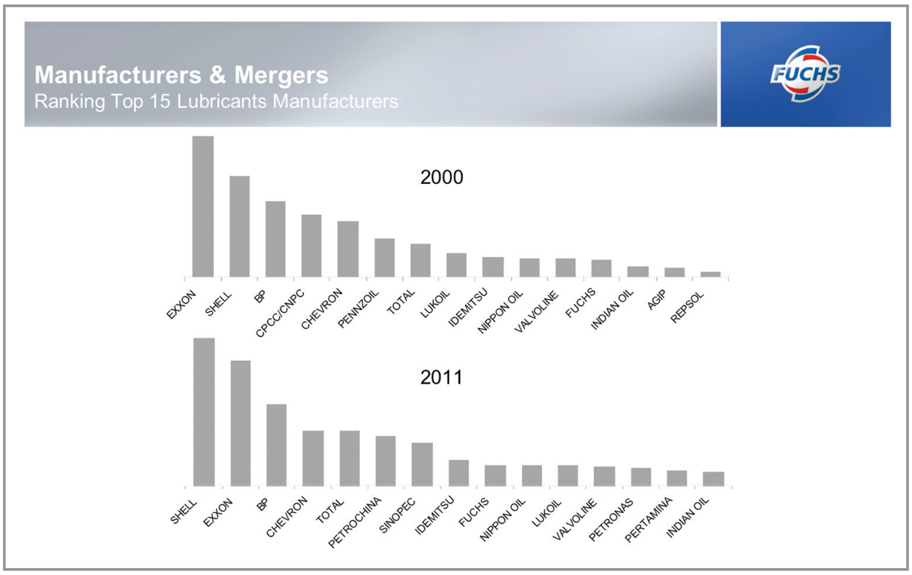
Gosalia said that there was another interesting phenomenon in 2011 or could it be called a new trend? He was referring to demergers, spinoffs, splits and separations of Majors on the one side and consolidation, internal mergers and acquisitions on the other. It seemed that the Majors were reorganising and refocusing either on upstream or on lubricants again, which both will make the supply situation and the competition fiercer and life not easier for the Independents.

Regarding spinoff, split and reorganisation, there were 3 examples in 2011:



With regard to consolidation, internal merger and external acquisition, there are another 3 examples of Majors from 2011/ 2012 respectively:





It will be interesting to see, how these developments proceed in 2012 and beyond.

Sustainability

Moving on through the process and value chain, Gosalia had talked about Markets, Mergers and Manufacturers and then highlighted Movements towards Sustainability and Resilience.

He took the examples on mergers, consolidation and integration into downstream and explained that the Sustainability megatrend presented great opportunities and challenges for producers who were seeking to enhance and diversify their downstream chemicals businesses.

The United Nations designated 2011 as the International Year of Chemistry and declared 2012 the International Year of Sustainable Energy for All. He asked whether Chemistry and Sustainability are complementary. Gosalia believed that the answer was YES!

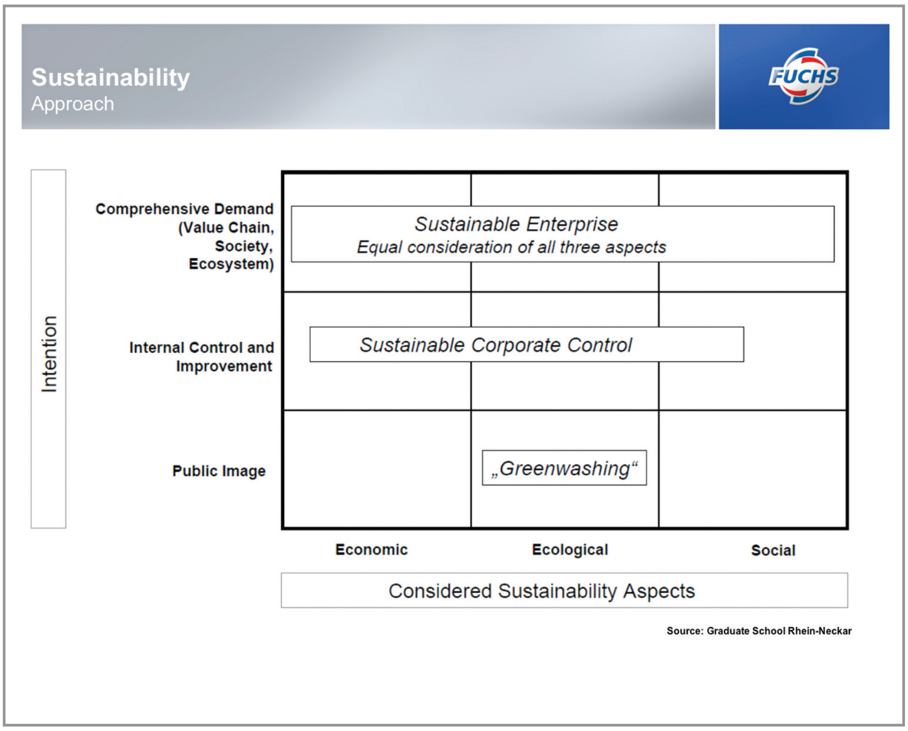
He went on to define the term Sustainability, its actual origin and root of expression.

The idea of sustainable development was born in 1713, when Carlowitz edited his first book on forest sciences. As forestry thinks in long term dimensions of generations, the Carlowitz base law on ongoing use of resources was the central idea of the concept of sustainable development.

How have we converted Sustainability for use in the lubricants world?

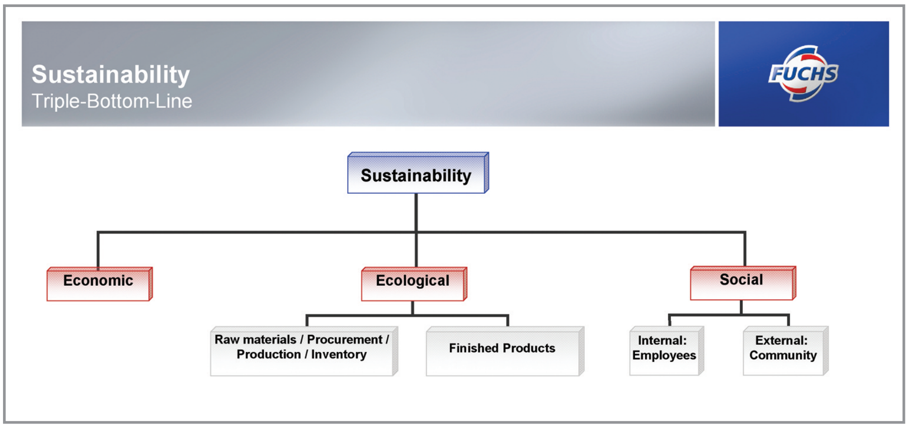
Lubricants make a contribution to the sparing use of resources and thereby to sustainability. Lubricants have the task of reducing friction, which in turn reduces the amount of energy input required and also saves emissions. Lubricants also have the task of wear protection. This extends the service life of equipment and saves resources.

Here we have the connection between Chemistry and Sustainability! Delivering sustainable products was something the chemicals and lube industry has done for many years, but the benefits are not always fully appreciated.



There are many external and internal drivers that benefit from adopting sustainability. From the customer and investor side companies are more and more seeing a demand for being sustainable in economic, ecological and social terms along the process and value chain of their businesses. It's about making the entire value chain more efficient, more effective and more transparent – i.e. with less environmental impact.

This means developing products that promote sustainability across their entire product life cycles, by delivering economic benefits and improved performance, manufacturing them in an environmentally responsible and cost effective manner and marketing them to maximise their value to customers.



Not forgetting, the social challenge, i.e. that while producing products in a sustainable way, paying attention to employees' security and needs and giving something back as a 'good citizen' to the community at the production location, too (= Corporate Citizenship).

Consumers today want to know not only the immediate sustainability benefits of the products, but also whether the products were made in an environmentally responsible way. To provide truly sustainable products, companies must also further demonstrate tangible bottom-line benefits, as environmental benefits alone are not enough for consumers. If something was just good for the environment, but it costs more and doesn't perform so well for the customer, that product would not survive for long. It won't be sustainable.

In a nutshell:
In the past companies needed to take care of the 3 P's, which were: 'Profit, Profit and Profit' in a sustainable manner.

Nowadays it is still the 3 P's, but they rather stand for: 'Profit, Planet and People', summarising the 3 dimensions of sustainability, i.e. economic, ecological and social aspects.

There are 3 escalating steps that companies can use to approach Sustainability:

1. **Greenwashing**: often used to manipulate popular opinion to support otherwise questionable aims, i.e. when a company or organisation spends more time and money claiming to be 'green' through advertising and marketing than actually implementing business practices that minimise environmental impact. They promote the perception that organisational aims and policies are environmentally friendly – whether it is to increase profits or gain political support – although in fact they are not – according to Gosalia, not the right approach.
2. **Sustainable Corporate Control:** to Gosalia, the most realistic approach to start with, including steering, standardisation and improvement of existing sustainable tools in all 3 dimensions.
3. **Sustainable Enterprise:** equal consideration of all 3 dimensions across the entire process and value chain of the business, including suppliers, etc. This can be considered to be an honourable target at the end, but maybe difficult to achieve right from the beginning.

Resilience

Regarding Resilience – converted to the lubricants industry – Gosalia explained the necessity to search for alternative secondary supply sources of raw materials, in case of a catastrophic event (e.g. Fukushima 2011) or the ability to adapt to a changing environment (e.g. changes in the base oil landscape, with Group I capacities going down and Group II/III availability increasing).

"*We cannot predict the direction of the wind, but we can set our sail in the right direction*" (Seneca)

Outlook: Markets, Mergers & Sustainability

With regard to global lubricants demand, Gosalia stated that we are living in challenging times again.

The developments in 2011 reminded us of what occurred in 2008, a strong first half and then the downturn. FUCHS expects a volatile market development in 2012.

The regional lube market dynamics of the past ten years in terms of quantity and quality will continue. The changing raw material basket of additives and base oils within finished lubricants, as well as the changing quality of base oils used will influence the lubricants produced and consumed and vice-versa.

Sustainability
Sustainability & Resilience

FUCHS

- Sustainability is the ability of an organization to sustain its current business model
- Resilience is the ability of an organization to dynamically reinvent its business model

to improve itself, when possible

to adapt to a changing environment by changing and rebuilding itself, when necessary

to tolerate disturbance and withstand shocks, without collapsing

to survive and grow in the face of unforeseen events, even catastrophic incidents

to recover in the least possible time in case of a disruptive event

to decrease its level of vulnerability to future expected and unexpected events

With no solution yet found for the paralysing Euro Zone financial crisis, the EU based industries and others remain in a challenging situation. Looking at the political instabilities in the Middle East, Gosalia asked, whether we could really call this lube market region sustainable?

From a lube market perspective, it seems that sometimes people always think about the emerging markets of India and China in the Asia-Pacific region, but forget that there was a mix of mature markets too, with e.g. Japan and Australia. Europe and the Americas are often underestimated, but they show sustainable growth in quality and also partly quantity for their Eastern and Southern parts respectively.

Spinoffs, demergers and separations accounted for nearly 40% of M&A activities in the US in 2011 and increased by 40% on 2010. Consolidation in the additives arena also continues, and makes it more difficult to manage risk by spreading it across several suppliers. For example, we have seen BASF merge with CIBA and then with COGNIS. So from three suppliers we now have just one. That's not so good for the Independents from a supply point of view.

Sustainability may sometimes sound like a buzzword, but it will remain a driving force in the lubricant industry.

And for that industry, this means it's no longer just about what, but how we make lubricants.

Gosalia illustrated his view on necessary future sustainability thinking, by concluding his presentation, using an old quote from Antoine de Saint Exupéry which he sees as still valid and very much up to date: "***We do not inherit the earth from our parents; we borrow it from our children***"

Rod Parker
Editor, Lube Magazine

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www.fuchs-oil.de