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CONSUMERS NEED TO GET RID OF THE LIGHT BULB

THE LIGHT REVOLUTION

Just as the mobile phone turned the telephone market upside down, now light-emitting diodes (LED's) are set to make permanent changes to the lighting market. But can LED light be marketed to consumers who swear by the light bulb? Two descendants of the Philips family firmly believe this is possible.

On New Year's Eve in the year 1879, Edison's first demonstration of the light bulb resulted in a flood of traffic jams and extra trains. A constant supply of light – without any crackling, flames, soot or smoke – generally caused a great deal of consternation. Ten years later the pear-shaped light bulb was ripe for mass production, and in 1891 Anton Philips set up a light bulb factory in Eindhoven with a modest production of five hundred lamps a year.

For about a hundred years, no real changes were made to the light bulb other than extending its life span. In the meantime the next generation of lighting is now ready: the light-emitting diode (LED), which is infinitely safer, more practical and more economical than the light bulb. But how do you market such a product to consumers who for years have been used to buying light bulbs from the Hema? Consumers who are not easily tempted to invest in what are indeed economical, but still expensive low-energy light bulbs?

Just a coincidence

Frans Otten junior and Warner Philips of Lemnis Lighting, part of the Tendris Holding in Naarden, both believe that things needed to change. In the autumn of 2006 they developed an LED lamp in the traditional pear-shape to replace the 40 watt light bulb. The lamp is expensive, about 30 euros, but lasts for at least 50.000 hours. What is remarkable is that both men, who are in their thirties, are great grandsons of Anton Philips, although they have never worked for Philips. Up to a while ago, they didn't really know much about lamps because they both have a background in law. The fact that they have launched an LED lamp onto the market is just a coincidence according to Otten. “We just came

across it. My first reaction was: surely it isn't possible for a private individual inventor to come up with such a fantastic product". But 100,000 Pharox lamps have already been produced and Tendris is planning to use them to conquer the consumer market.

The company has entered into a cooperation agreement with Princess, the manufacturer of small domestic appliances, but Otten has also already flown a couple of times to India and China. "Light bulbs represent about 20 percent of worldwide energy consumption" he says. "If you want to reduce this, you need to be in countries where energy is already a scarce commodity". In this way Otten is more or less following in the footsteps of his great-grandfather, who dragged a suitcase full of light bulbs to what was then the Russian Empire. "When the lighting market exploded a hundred years ago, dozens of factories in Europe started competing against each other and the future of Philips became uncertain. At the time Anton thought: if I can get those crazy Russians to buy my lamps, then I can be sure of sales and that will give me a competitive margin in Europe. That is what made Philips great."

The market lies open

So great in fact, that Philips has dominated the light bulb market for many years, along with General Electric and Siemens-subsidary Osram. Hovering around them are also manufacturers of light fittings and specialized lighting applications. With the arrival of LED the market once again lies completely open, according to Frans Otten. "Of course Philips and other manufacturers are busy developing LED lighting, but they are saddled with a legacy that is difficult for them to ignore: the many years of investment in low-energy light bulbs for which the costs gradually need to be recovered – and therefore you don't immediately launch a replacement onto the market."

However, Frank van der Vloed, Director of Philips Lighting The Netherlands, assures us that it isn't that simple. "We too believe that some time in the future the LED lamp will replace the light bulb, but at the moment LED is not yet a fully-fledged candidate for the replacement of the consumer low-energy light bulb or for strip lighting. An LED lamp saves less energy than the low-energy light bulb, is six or seven times as expensive, and the shade of light it gives is considered to be cool. It is possible to do something about the latter but this will then affect the brightness. The lumens per watt first need to be increased in order to optimize the colour balance." And Philips is not prepared to sell LED to consumers based only on a longer life-span.

The LED is however already suitable for a number of applications, in particular high-powered LED applications. Van der Vloed: "We light up Buckingham Palace with LED lighting. At one time the British Queen wasn't in favour of lighting up the Palace because normal lighting was too bright, but with LED it is acceptable". Another application is office lighting in places where replacing light bulbs is costly. But on the consumer market Philips would rather carry out a multi-track policy: for instance, later this year the low-energy light bulb will receive competition from a new halogen lamp that is fifty percent more economical than the traditional light bulb. "We don't prefer a particular technique – we are completely neutral" says Van der Vloed. "The one is not per definition better than the other, it depends on the application". However, leading manufacturers are about to proclaim a production stop for pear-shaped light bulbs and in December, Philips announced that they were going to phase-out their production of traditional light bulbs. "An important step for a manufacturer that makes more conventional light bulbs than low-energy light bulbs" stresses Van der Vloed. "And rightly so" adds Frans Otten "the conventional light bulb is more or less an outdated solution anyway".

The manufacturers are not alone in taking this view. The Australian Prime Minister John Howard wants only low-energy light bulbs to be used in his country by the year 2010. In California, Germany and Belgium there are also plans to implement a ban and the European Commission would like to be rid of the traditional light bulb by 2009. In our country the majority of the Second Chamber would like legal measures to be taken in order to make low-energy lamps cheaper. This is necessary because according to the trade, the demand for low-energy lamps is something like three percent, which is minimal. That is less than a couple of years ago when all sorts of low-energy lamp promotions were initiated. This is the reason that Philips is working with Greenpeace to provide the whole of Schiermonnikoog with free low-energy lamps. However, according to Otten it doesn't make sense to force consumers to buy lamps "that they didn't want anyway". Furthermore, the low-energy lamp has to be disposed of as chemical waste, gives off similar light to strip lighting, and can't be dimmed.

But at Philips they consider this argument to lack foundation. Many drawbacks of the low-energy lamp – the cool light, the high price and the irritating flicker – have been removed as a result of technical developments. Just like the misunderstanding that a low-energy lamp is too big for existing fittings. On the other hand, the technical development

of LED is also advancing: for instance, Osram has already come up with the first LED with 1000 lumens, more light than is given off by a traditional 50 watt light bulb; and it is expected that an LED lamp will be developed to replace a 70 watt light bulb before the end of this year.

Theo van Deursen, Managing Director of Philips Lighting, also expects a rise of 25-30% per year in the sale of LED lighting. And Cees Bruines, Director of Osram Benelux would not be surprised if the turnover of LED lamps increases in the future by a factor of 2,5. Philips in particular is considerably strengthening its investment in LED lighting. In 2005, the concern became the new owner of Lumileds, a company that makes LED lamps for street lighting and for lighting up buildings. And in March, Philips also took over the Canadian company TIR Systems which also specializes in low-energy lighting technology for the business market.

Consumer market

But the biggest challenge will be the consumer market. Because LED lamps are much smaller than traditional lamps, this technology offers new possibilities for the design of fittings and is the reason why Philips has taken over PLI, one of the biggest light fitting manufacturers (with brand names such as Massive, TRIO and Lirio). "In the future we will no longer be selling lights, but lighting solutions" emphasizes Van der Vloed.

An important aspect of the marketing strategy of the two entrepreneurs from Eindhoven is the 'fun' element. One example of a new product introduced onto the market by Philips is the Living Colours lamp which has four LED's: two red, one green and one blue. With the help of a remote control, these can be combined to make 16 million different colours. LED lamps are also ideal for use as artificial candlelight which looks deceptively like genuine candlelight. There are also new lamps (SpotOn) that have movement sensors which automatically switch on and off as you walk past. In addition, Philips has set up a special division for Photonic Textiles, from which the first products are expected in mid-2007. With Lumalive-textiles it is possible, among other things, to provide materials with dynamic texts, images, and surfaces on which there is a constant change of colour. In this way fabrics, cushions and grand-foulards can be brought to life when they are lit up.

And that isn't all. Within five years, the classy shops in the PC Hooftstraat in Amsterdam will be fitted out with Philips' newest technological lighting features. Interactive shop-window screens will automatically show things like clothing collections to passing shoppers,

clothes racks will turn red when red shirts are hung onto them and shoes will light up when people walk pass them. The main Philips showpiece is the interactive shop-window. A sensor reacts when a passer-by stops to look at the articles in the window. These articles can then be spotlighted while extra information is also given on a small screen.

- Frank van der Vloed has been working in the lighting business for twenty years and thinks that this is just the start of some important years for Philips. “You really notice that the company now considers lighting to be important once again and that it can make a contribution to profits. A great deal of investment is taking place.” And according to Van der Vloed, the fact that there are new competitors on the market only makes it more exciting. Even now that Lemnis has taken on ex-Philips man Tim Cremer as Director. “Logical, don’t you think?”, says Frans Otten with a meaningful smile.

Facts about lighting:

- *About two-thirds of all lighting in the European Union is based on old technology.*
- *20 percent savings on lighting energy is equal to either 779 million barrels of oil or the annual production of 265 power stations.*
- *Together all Dutch local councils can save 1.7 billion euros by replacing old street lighting.*

Photo caption: ‘In the future, Philips will no longer be selling lights, but lighting solutions’

The European Commission wants to be rid of the traditional light bulb by 2009