

PORVAIR VISIT

Introduction

Five members of Cambridge SIGnet group visited Porvair Head office in Kings Lynn on Tuesday 25th July. Chris Tyler, the Porvair CFO gave us an interesting account of the company's activities. We would like to record our appreciation of his hospitality and his time and trouble in giving us a very fair concise presentation of the business.

Summary

He hit the key points of the markets they operate in, their products, their financial performance and the significance of their future product pipeline and answered all our questions. We were impressed with the products, the way they develop new products in tandem with potential customers and the potential product line under development. We are of the view that Porvair have medium and long term growth prospects.

This report is based on my notes and should be read in conjunction with Porvair's posting on the internet at <http://www.porvair.com/Presentation7.htm>.

History

The Chloride Group spawned Porous Plastics in the 1960s to make battery separators for the Chloride Group and Vyon (a porous polythene sheet or pipe); they developed a synthetic [breathable] leather called Porvair and changed the Company name to Porvair. These company activities were sold off in a management buy-out. Now the company is essentially in the filtration business developing and producing specialist filters for a variety of industries where technical specifications are challenging, product life cycles are long, filters are consumable and product performance is more critical than price.

The present.

The Managing Director is Ben Stocks who is based in the U.S. and is British. The company has 5 factories in the U.K. and U.S. and has grown by acquisition and includes Dutch assembly unit. The microfilter plant is at Fareham. The head office is in King's Lynn as it is cheaper there. The group development office in King's Lynn runs the coal gasification side of the business. There is an "Advanced Materials" division in the UK. Profits from the core businesses fund R & D for new business. They focus on environmental technology. Energy security and legislation are powerful drivers for the business which draws on their core filtration expertise. They have a range of development projects, some of which may be transformational for Porvair. They look for long production cycles of elements of filter systems of low cost, relative to the overall project. They supply filters for aerospace, "clean" energy, print systems, aluminium extraction, casting equipment, medical laboratories, high purity liquids and foundries and others. They actively patent where possible. They are also protected by accreditation on projects such as aerospace.

Financial.

The date of last year's half yearly results, 4th July 2005, was due to delay from complying with the new IFRS provisions and not intended to coincide with the American National holiday. The second half of the year is always more profitable than the first because the first includes Christmas and Easter which affects 6 weeks of the year. In 2006, sales were up 7% to £ 23 million, earnings per share up 30% to 1.5p, operating profits before exceptional items up 18% to £ 1.3 million including 7% sales increase and 38% increase in operating profit in UK Microfiltration. Conditions were challenging in metals filtration and rising costs compressed margins. There was 58% growth in Porvair Advanced Materials, encouraging progress in gasification filters, diesel exhaust filtration, bioscience filtration and separation and fuel cells. They anticipate £ 3,000,000 full year profits. There is competition in the U.S. In the UK they need new applications to expand. Customer turnover is low

Costs are predominantly salaries. R & D tax credits contribution is insignificant. The U.K. pension scheme has a deficit and is no longer open to new employees. There are equal numbers of employees in both halves U.S. and U.K. In the US employees want health care insurance which is increasingly expensive. Margins are better in the U.K. Energy costs are higher in the U.K. versus U.S. They have sales in South Africa and sell filters in Canada. They do all design and assembly but don't manufacture; the parts are bought in. R & D costs £ 3,000,000 p.a. and costs are mainly staff.

Applications.

A typical application is filtration of molten cast shot Aluminium, extracted from Bauxite, to make ingots. The filter element costs \$40 and filters \$10,000 of aluminium therefore there is a low incentive to change filter suppliers. They make all the filters for Alcoa. They make filters for nuclear, aerospace and pharmaceutical firms involving certification, which reduces the incentive for the customer to change. They make all the filters for the 737, 747 and Airbus thrust reverser and are locked in by accreditation. There is CAA certification for the 737 Airbus and sub set certification for all parts. They make an Aerospace hydrogen fuel filter unit which cleans and drains the hydrogen and an air separation unit filter that strips off oxygen so that nitrogen is pumped into the fuel tank to prevent sparking consequent on the aeroplane crash off the North Coast of America some years ago. They do "last chance" filters (if a filter upstream fails this is the "last chance") for applications such as filtering air into aircraft fuel tanks to avoid sparks, as above, which are long term business. The 737, 747, and Airbus contracts are worth \$600,000. There is a replacement cycle: the de-airing time has to be logged. Boeing have just changed the filter specification delaying the project another year. Porvair is the sole supplier and the change in specification will delay the unit until April 2007. This is typical of delays in this kind of business. It is difficult to grow quickly and current development will not pay off until 2008/9/10. R & D is required to pick significant projects. Other applications include filters for casting equipment for metals, aluminium slurry, foam for putting out fires, silicon carbide foundry filters and super alloy filters. There is a growing medical business. The margins are low. Manufacture is difficult e.g. slurry for engine blocks, 1-2cm turbine blade castings. Aluminium prices are up. Long

term price constraints affect foams and oil based materials. Patents are obtained wherever possible; e.g. coating filter unit for US slurries for ceramic tiles. There are 20.000 products from the UK business.

“Clean” future.

As the public demands cleaner cities so applications grow, as in car exhaust filters, and also requirements for clean liquids and air. The filters in many applications are replaced at intervals. Filters for coal gasification are critical. This is potentially huge in the US who have 450 years supply of coal and are tackling global warming with technical “fixes”. Pulverized coal fuelled power stations exhaust carbon dioxide that is too dirty to sequester, hence the advantage of coal gasification plants. The aim is to reduce pollution. Carbon credits may be important in the future. Carbon dioxide can be sequestered and pumped under ground. The three power station manufacturers of Innovative Coal Combustion (ICC) plants are Shell, GE, Conoco-Phillips, with whom they have a joint development ICC plants are built near coal fields, to power turbines and provide electricity. “Clean” energy plants will be DOE(US) funded by 2008. The coal gasification filters business is worth \$1,500,000 per annum. Filters lasted 1 year, now 2 years, and fewer filters are required with time. Gasification ash filters are a 4 foot high, 40 element filter with 1000 filter elements per order. A pulsed jet cleans the filter which has 2 years life.

Other Markets.

Spain is a second market. There are trials in progress in a Shell coal gasification plant using ceramic candles. Some burner plates are catalysed and some not. Europe may produce a particulates charter and legislation at some date. Filtering of particulates is important in diesel emissions. Carbon monoxide is converted to carbon dioxide. Diesel exhaust particulates are very carcinogenic. The filters are self regenerating – increasing the life of vertical ceramic flow generators. Metal foam is used to absorb the particles Metal heats up quicker. Retro filters are fitted to dust carts and vehicles in other businesses like heavy duty tractors, but not generally in new cars yet. They have developed a Bio-science insulin inhaler using BioVyon in a joint venture with Bepak, who are located next door to head office in Kings Lynn, and syringes that will capture and purify antibodies, for instance; they can be applied to DNA and can be made hydrophobic or hydrophilic and can be used to filter blood The first launch will be this year. Other applications are for wine , breweries, water in naval ships and medical assay plates.

Fuel Cells.

Bipolar plates for fuel cells will not be profitable for some time. In fuel cells pure carbon electrodes combine hydrogen and oxygen to produce water. The key relationship is with United Technologies. Toyota, Ford and BMW are all in research and development. Buses are a likely market. Hydrogen refuelling is practical in bus stations. Nissan and Hyundai have \$30-40,000,000 programmes and 200 engines trialling with

United Technologies. By 2014/5 there will be 10,000,000 cars with bipolar plates with oil at perhaps \$100 a barrel.

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