

THE BUSINESS MODEL

Turnover for the Group is derived from the sale of analysis software and associated services. The software is used by engineers in the design process to produce a “virtual prototype”, which enables them to predict the behaviour of a proposed design prior to the build and test phase.

There are four principal products:

The flagship product is **FLOTHERM**, which predicts temperatures and airflows and is used by engineers in the electronics industries to improve the thermal design of their equipment.

FLO/EMC is also sold to engineers in the electronics industries and enables better predictions of the electromagnetic radiation and interference problems – or “electromagnetic compatibility” (EMC).

FLOVENT utilises the same software structure as FLOTHERM, but is applied to larger spaces – such as buildings. Applications include heating, cooling, ventilation and air quality.

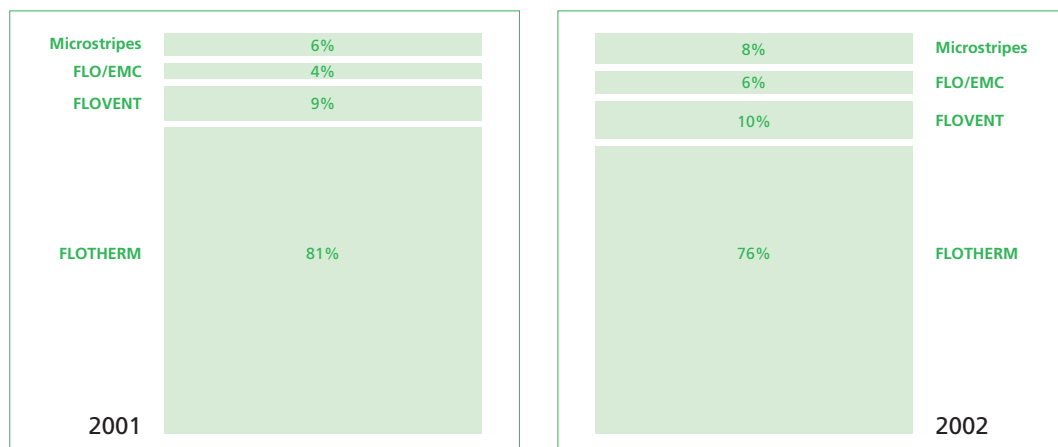
Microstripes was the product acquired from KCC. It is a 3D electromagnetic simulator used in the design of microwave devices and antennae.

A principal aim of the Group is to lead the market for analysis software in the physical design of electronics. A global market lead has been established with FLOTHERM and the strategy is to consolidate this position and establish the same position with FLO/EMC. In the meantime synergies will be maximised with FLOVENT, for example by focusing the product on data centres, which use equipment that has been designed with FLOTHERM. Synergies are also being exploited with Microstripes by focusing on the embedded antenna market.

We also believe that there are important opportunities for our products to be sold to other parts of the supply chain. Selling to data centres is an example of this at one end of the chain: at the other end there is an opportunity to sell to the suppliers of the components.

The Group derives the majority (approx. 90%) of its turnover from the sale of licences and support. The rest comes from training and consultancy. Customers pay by the “seat” for the software and some of the larger customers may have up to 80 seats. There is no over dependency on any one customer. Most licences are sold as annual licences, so that there is a considerable benefit from repeat business as the licences renew. Occasionally two or three year or perpetual licences will also be sold depending on the customer’s requirements.

Products as a proportion of turnover



PRODUCTS IN PRACTICE

A CASE STUDY OF FLOTHERM'S USE AT CISCO SYSTEMS

by Sherman Ikemoto



For this year's Annual Report we felt that we would show how our customers benefit from our software. We have therefore profiled Cisco Systems – the worldwide leader in networking for the Internet. Cisco Systems' turnover was \$18.9 bn in F2002. They have been a customer of Flomerics since 1993 and now have over 65 mechanical engineers based in Italy, Sweden, Canada and the US trained in the use of FLOTHERM. FLOTHERM usage has increased steadily since 1993, when Cisco had only ten mechanical engineers, and has since established itself as a key component of the Cisco design process. This was demonstrated in 2001 when Cisco negotiated a corporate purchase of FLOTHERM licences worth \$250k per year. Cisco Systems has managed through the economic downturn as well as any company in the networking and telecommunications industry. The reasons for success are many but the contribution of a fast, effective product development process and a world-class engineering team cannot be overstated.



Saeed Seyed, Manager of Product Development, Cisco Systems

FLOTHERM is used by Cisco throughout the design process from concept through to the final design. One group of engineers is headed up by Saeed Seyed, Manager of Product Development. FLOTHERM has helped him and his teams bring to market over 30 successful Ethernet switch products in the past two years.

Saeed's development team is responsible for mechanical design for the Catalyst line of Ethernet switches that were responsible for \$7,560M in product sales, 48% of Cisco's total annual revenues. At this level design mistakes, development delays and under performance are not options when market dominance is the goal.

On the Tornado project, a Catalyst 6500 product, Saeed's team was asked to repackage an existing system for a new customer. The repackaging effort doubled the amount of heat generated by the system. Saeed's engineering team was left with one option to deal with the increased heat: to increase the system airflow. This change is not as simple as it may seem.

In effect, increasing airflow by a factor of two increases airflow resistance by a factor of four. This posed a

formidable challenge to HS Liang, Ph.D, the lead thermal design engineer on the Tornado project. Redesigns of this kind typically involve building multiple physical prototypes that cost upwards of \$10,000 each and take up to 4 weeks to deliver. On average, two or three physical configurations are tested, costing a total of \$23,000 to \$35,000 in materials and lab time and five to seven weeks of design and testing time. The total cost for a thermal design of this kind can reach \$50,000.



HS Liang, Ph.D, Cisco Systems

Using FLOTHERM Dr. Liang was able to try five different designs and find a solution that met the thermal requirement in four days of schedule time and 14 hours of engineering time. The thermal design effort cost \$24,000, less than 1/2 the cost of design without FLOTHERM. Over the

period of one year, Saeed estimates his division saves in the order of \$300,000 in thermal design and material costs with FLOTHERM.

Saeed comments, "Our design margins are small. We rely on the accurate simulations produced by FLOTHERM to help us solve our most complex thermal issues and to save significant design costs."