



Peter Gossas



Olle Wijk

Sandvik is driven by customer value

By John Butterfield

Sandvik Materials Technology plays a very significant role in all our lives. For no matter where we find ourselves on the globe, the company's advanced specialty alloys and ceramic materials are to be found all around us in the products that we use: in our homes, at work, at play, in the hospital and generally sustaining and improving the quality of our existence. From razor blades to hip joints, from wire in pacemakers to coiled tubing used in umbilicals at the bottom of the oceans, from watch springs to mammoth seamless tubes, pipes and flat products, Sandvik's advanced materials and systems solutions are found in applications serving an extremely wide range of industries. Starting out in business some 150 years ago in Sandviken, Sweden, the company has today become one of the world's leading developers in its niches. Its main customer segments are characterised by strong growth prospects, a constant demand for advanced materials and technology, and the need for solutions rather than parts. Stainless Steel World met up with Sandvik's Peter Gossas (President) and Olle Wijk (Vice President and Head of R&D) to discuss the reasons behind this extraordinary success story, their company's position as a world leader in materials technology, and plans for the future.

Operation conditions in the oil and gas industry are getting more corrosive and wells are becoming deeper and deeper, meaning that suppliers are faced with ever-higher demands on reliability, quality and product performance. All this suits Sandvik Materials Technology's product and material program perfectly.

LOOKING AFTER THE CUSTOMER

"The number one concern at Sandvik Materials Technology," says Peter Gossas "is to ensure that we take good care of our customers and that we know and understand their needs better than anyone else". This is an important part of the philosophy which has helped the company to become so successful over the years, for its goal is to provide customers with real value in the products, services and support which are offered to them. This mentality was established very early on in the company's history. Sandvik's founder, Göran Fredrik Göransson realised as early as the 1860's that in order to make his company stand out from the competition and flourish internationally, then it was necessary to focus on high operational quality, R&D investments, close contact with customers through a sales network, and a drive towards exports. This vision still remains very true to the present-day company, 140 years later.

"Our company's core business is not to provide our customers with a product or a piece of tubing, but to focus on how we can solve their problems and challenges and help them meet their materials requirements for the future," says Mr. Gossas. Sandvik, is therefore not only interested in how it can provide its customers with highly reliable and qualitatively good products but also how it can help them to increase their productivity, cost-efficiency, and long-term competitiveness. These factors are particularly important nowadays for globalization has resulted in rapidly increasing prices, cost pressures and competition for all industrial companies.



Sandvik Materials Technology focuses on solving customers' problems in order to improve their productivity and competitiveness - and, consequently, generate customer value. Therefore the company works at establishing long-term partnerships with its customers to better understand the challenges they are confronted with.

MATERIALS TO MEET DEMANDING APPLICATIONS

"Things change fast in the industries in which we are involved" says Mr. Wijk (Vice President and Head of R&D). "If we look at the offshore oil and gas industries, we see a need, for materials which can deal with increasingly harsher environments - hotter, deeper, greater pressures, and more corrosive conditions. In the seas around Japan we are involved in a number of projects where drilling often takes place at depths in excess of 2200 ft. The oil that is brought to the surface here may have a temperature in excess of 80°C, and the gases that are released may contain large quantities of hydrogen sulphide and chlorides. These are extremely corrosive to most alloys. Moreover, the very depth of drilling necessitates that the tubing and piping used has to be almost maintenance free. Lighter metal alloys are also required that not only retain the strength of their heavier counterparts but are also able to handle ever increasingly pressures. Other factors which affect developments are matters such as lifecycle costs - increasingly a factor affecting decision-making, higher levels of automation, increasing demands for energy-efficient products and processes, and a general enhancement in environmental awareness. It is, therefore, only natural that when potential customers are looking for a materials partner they want to find someone who can help them to offset some of these costs against higher productivity and, thereby, provide them with extra value". "As a result," continues Mr. Gossas "we see our customers' materials problems as both a starting point and an opportunity on the road towards a relationship with us. It's a challenge to be able to turn their worries into an innovative solution. Moreover, this trend towards more demanding applications shows no sign of ending, for as the world's easily accessible resources become depleted, extraction methods become more complicated, necessitating ever newer technologies and materials." To meet these tough demands and make deep-water exploration possible Sandvik has, for example, developed a whole range of advanced materials with different properties, including Sandvik SAF 2507®, Sandvik SAF 3207®, and Sandvik SAF 2906®.

PARTNERSHIPS AND WIN-WIN SOLUTIONS

In order to achieve its goal of providing its customers with added value, Sandvik invests time and effort into getting to understand what the demands of their customer's industries are. Logically flowing on from this, Sandvik is then able to support to its clients by providing them with an array of possible solutions to meet specific market needs - the eventual choice being tailor-made to fit the requirements of the task at hand. That Sandvik is capable of doing this is due to two important reasons: firstly, it invests large sums in research and product development. Secondly, the company is renowned for its in-house materials expertise, having some of the world's best specialists in the field of materials technology, as well as for service support. The success of close development 'partnerships' with



In the Czech Republic, Sandvik has a highly specialized unit for the manufacturing of seamless coiled tubing in lengths up to 15 kilometres. These tubes are used in umbilicals in the oil and gas industry - and the materials used have been developed to withstand extreme pressure and high temperatures at depths of more than 7,500 ft. without maintenance.

customers lies in the fact that they lead to a win-win situation in which both parties have a strategic role, Sandvik as experts on advanced materials and the customers as experts of their processes. "In fact," says Mr. Gossas "we actually go beyond the meaning of the word 'partnership,' for such cooperation opens up opportunities to address not only the challenges of today but those of tomorrow, and the day after tomorrow, as well". However, in order to make full use of Sandvik's resources and expertise in these areas, it is crucial that their partners openly exchange information with them about their processes and that they want to work towards establishing a long-term relationship. "Once this happens, we see, time and time again, how sharing information about the direction in which an end-user's industry is heading will enable us to point out possible solutions to them that even they had not even thought of. In many cases it will also permit us to develop a new generation of materials solutions for the future", says Mr. Wijk.

REVOLUTIONARY BREAKTHROUGHS

An example of such a revolutionary breakthrough is illustrated by Sandvik's work with urea plant builders in the fertilizer industry. Mr. Wijk continues the story: "Urea is a fertilizer substance which is especially important in agriculture as a commercial fertilizer. A serious problem that has always confronted the builders of urea plants has been how to increase productivity without compromising safety, since the risk of explosion rises as the rate of production in plants increases. In cooperation with one of the world's leading designers of urea production plants, Sandvik conducted extensive work to develop a new generation of process equipment. An important part of this long-term partnership has been the production of a completely new material, Sandvik Safurex®, that is used in tubes and heat exchangers, which are the core components of

urea plants. The result led to minimizing the risk of accidents whilst permitting plants to be more productive and efficient. Additional advantages that also resulted were that the useful lifetime of the process equipment was doubled, maintenance could be reduced and investment costs were lowered by 15%. Similar Sandvik breakthroughs are also to be found in the demanding environment of offshore oilfields to which the company are continuously developing new materials, products and solutions to meet the constantly increasing demands. In the Czech Republic, Sandvik has a highly specialized unit for the manufacturing of seamless coiled tubing in lengths up to 15 kilometres. These tubes are used in so called umbilicals in the oil and gas industry - and the materials used, Sandvik SAF 2507® and Sandvik SAF 3207®, have been developed to withstand extreme pressure and high temperatures at depths of more than 7,500 ft. without maintenance.

R&D IS THE KEY FORWARD

Continual developments on this scale have ensured that Sandvik is today in the envious position of having the largest research and development facilities for advanced alloys and ceramic materials in northern Europe. It currently has more than 900 different materials to meet the demands of very specific niche applications and industries and has more than 350 staff devoted to R&D. "Sandvik is known worldwide for its extensive investments in R&D and its highly advanced products and materials," says Mr. Gossas. "Additionally, however, we are currently busy with an extensive change programme whose objective is to double the speed in our product development process so that we can provide new products and solutions in an even higher tempo. The programme is aggressive but we are convinced that these objectives are realisable. New revolutionary developments are underway, includ-

ing a completely new programme for so-called surface technology products. Sandvik Santronic™ is specially developed for applications within electronics and telecom. The manufacturing technology is based on a new, patent-protected method to coat metallic precision strip with different kinds of surface layers such as nickel, silver or copper. This opens up new possibilities to give the precision strip a combination of different properties - one side of the strip could, for instance, be coated with a layer for enhanced surface conductivity or for an insulating property.

Sandvik Decorex™ an innovative, colour-coated strip material, is a new and unique product programme for decorative applications. It has been developed for applications with high demands on surface appearance and technical functionality. By using Sandvik Decorex, it is possible to combine sophisticated surface finishes with the technical advantages of stainless strip steel. This offers design opportunities for components, for example digital cameras, mp3 players, other digital media products and for domestic and consumer products.

Excellent adhesion between the base material and the colour coating make it possible for Sandvik Decorex strip to be cold formed and bent to close radii without affecting the colour quality. Compared with processes relying on a final colour coating operation - particularly if it is outsourced - this removes process steps for the customers, shortens production times and means less material tied up in production and stock.

In order to develop these new products and materials and keep at the forefront of materials technology, Sandvik makes use of the advice and expertise of some of the world's foremost metallurgists. "Astonishingly enough, it is a relatively small group of experts control-

ling developments in this field," says Mr. Wijk. The company also maintains a very firm finger on the pulse of all the leading end-user industries in which it participates whether this be general engineering, energy, construction, consumer & electronics, medical, mining, the automotive and aerospace industries and chemical industries and will call in the advice of appropriate experts when necessary. Nevertheless, the R&D departments at Sandvik are also allowed some realm of creativity in the form of open-ended research for it is recognised that some of the best developments in science often result from experimentation - the applications following on later.



New revolutionary developments underway include a colour coated strip material, Sandvik Decorex™, which is a unique product

program for decorative applications that improves customer productivity and cost efficiency.

A BRIGHT FUTURE

So what does the future hold? "Sandvik's world continues to rapidly expand and this trend will continue during the coming years," explains Mr. Wijk. The company's strong sales growth in recent years has been accomplished through continued success in the group's traditional largest geographic markets of Western Europe, North America and Mexico. However, despite favourable growth, the relative importance of these markets is declining as newer markets take on more prominence. A large proportion of the new growth is attributable to a very strong demand for Sandvik products in such market areas as Asia, Eastern Europe, Australia, and Africa. The rapid growth in Asia, and in particular in China and India, is making Asia a stable third geographic base for Sandvik. "Looking at the segments in which we work we see expansion bright across the board whether this be in energy, electronics, medical equipment, chemicals or oil & gas, coal, and nuclear" says Mr. Gossas. "The future is thus very bright for Sandvik Materials Technology and there are many golden opportunities out there for us to help our customers become ever more successful."

Sandvik Materials Technology is a leading developer of advanced alloys and ceramic materials, serving a broad range of industries with innovative products and system solutions. The product areas comprises Tube, Strip, Wire, Kanthal resistance materials and Process Systems. Materials technology is the core of Sandvik's business philosophy. The company strongly focuses on long term relationships and together with customers and partners it develops competitive solutions to meet the demands of tomorrow. Annual sales are about SEK 17,000 M with 8,400 employees.

Sandvik's product programme to the oil/gas industry:

Umbilical tubing, production tubing; riser tubing, flowlines, control lines, instrumentation and hydraulic tubing, coiled tubing, heat exchanger tubing, piping systems, tube and pipe fittings, wirelines/slicklines, armour-wire for logging cables, welding consumables, solid and hollow bar.