

Meet Sandvik

THE SANDVIK GROUP'S MAGAZINE FOR SHAREHOLDERS AND EMPLOYEES JANUARY 2012



**Yesterday's pioneers
Today's heroes
Tomorrow's challenges**

“150 YEARS IS A GREAT START”

Dear reader,

Certain milestones offer a natural point for stopping to look at where you are and consider how you got there. A 150th birthday is certainly a good one.

Sandvik’s journey has been amazing, and as an employee or a shareholder you are an important part of our journey. In this special anniversary edition of the Group magazine Meet Sandvik, we would therefore like to share with you a few glimpses of our proud history and the often turbulent world that has shaped us. You will find that while much about the company has changed beyond recognition in 150 years, some significant qualities remain. These include our values, our persistent spirit of innovation and, above all, our constantly proven ability to change with the times. To my mind, these characteristics are related and constitute the “soul” of Sandvik, and they are what unite us around the world.

A company is like a living organism, constantly growing and adapting to changing circumstances. If it fails to adapt, it will perish. Sandvik would not be around today if we had not been able to grow and change in the face of the challenges posed by the world around us. To remain static is simply not an option, even though some changes – like the restructuring and divestment of existing operations and moving our Group headquarters – are obviously difficult for those directly affected.

HOWEVER, THE ONLY thing certain about the future is that it will be different from today. And the pace of change seems to be accelerating exponentially. At the time of

Sandvik’s 100th anniversary in 1962, only about 1,000 employees were stationed outside Sweden. Throughout the 1990s, the organization outside Sweden grew by 53 percent to 25,000 employees. Today, four out of five employees are based outside Sweden.

Due to the accelerated globalization and the strong shift in where growth will happen, we have adopted a new strategy that will transform Sandvik from a Swedish company with a global presence to a company that is truly global – in mindset, presence, culture, diversity, and career and business opportunities.

The new strategy was developed in response to a number of trends shaping the global economy, which in the coming years will have a material impact on Sandvik’s businesses. One of these concerns the shift in economic dominance. Eleven of the top 20 economies in 2020 are projected to be in what are now developing countries.

Sandvik has had success in driving sales in many of the emerging markets based on a strong premium offering and brand. However, our global people and asset footprints have not moved to emerging markets along with sales. A similar pattern can be observed in Sandvik’s investment history. From 2006 through 2010, about 63 percent of all asset investments for the Sandvik Group were made in Europe and North America. By comparison, only some 20 percent of total asset investments were made in Asia, including some in Japan, even though this region has been driving a significant share of the net sales growth.

“Looking ahead, I am convinced that we will celebrate our 200th birthday as an even stronger company than we are today.”

TO ACCELERATE GROWTH, improve or defend margins and ensure relevant innovation for emerging markets, Sandvik will accelerate the shift towards emerging markets in all key areas.

To enable the success of the new strategy and to increase transparency and operational focus, the organization has been split into five business areas. A stronger platform for utilizing common resources will be developed at the Group level and at local levels.

Our employees – our closest contact to the market and the customer – will be given more responsibility and freedom to act within a new, simplified organizational structure. This will not only serve to empower our people but also increase the speed of decision making within the organization. A strengthened people strategy includes a focus on safety, diversity and inclusion, empowered employees, a culture of innovation, talent management and the development of excellent leaders.

For me personally, providing a safe working environment and putting safety first is the number one priority. Zero work-related injuries is my foremost goal.

TO OUR SHAREHOLDERS, the new strategy targets Sandvik to become best in class and to deliver best in class returns. The Group will target significant performance improvements across the portfolio to support long-term profitable growth and achieve top performance.

Looking ahead, I am convinced that we will celebrate our 200th birthday as an even stronger company than we are today.



My conviction is based on the significant pride within the organization that I have experienced on numerous occasions during my first year as CEO, in combination with unique competence and an outstanding product portfolio.

As the Sandvik journey continues, I would like to take this opportunity to express my sincere delight in having you on board.

A handwritten signature in blue ink, which appears to be 'Olof Faxander', is written over a light blue horizontal line. The signature is stylized and fluid.

Olof Faxander, President and CEO

3 CEO Olof Faxander

"Sandvik's journey has certainly been incredible, and as an employee or a shareholder you are an important part of our journey."

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Sandvik's unique competence boosts performance in widely different industries, from off-shore drilling to underground mining and high-flying aviation. Sandvik is at home in all elements.

32 Research & Development

Sandvik's formula for success: Take 5,000 active patents, add 2,400 talented employees and invest SEK 3 billion a year. The result? World-leading research.

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The investment of the century?



This special anniversary edition of **Meet Sandvik** is published in 14 languages.



My Sandvik

On pages 26 and others, you will meet today's heroes. Employees around the world share their stories.

Five business areas – one ambition:

THE PERFECT FIT

Sandvik's success rests on unique knowledge in rock excavation, development and shaping of metals and other materials. In order to transform this knowledge into solutions that meet demands in different industries, the company is organized into separate business areas.

IN ORDER TO CREATE maximum leverage within each core business and to optimize the organization for growth and profitability also for new and smaller adjacent businesses, Sandvik was reorganized into five business areas as of 1 January, 2012.

"It is essential that we adopt strategies and an organization to meet a rapidly changing global market where the ability to act and react fast is crucial for long-term success," says CEO

Olof Faxander. "The new organization means a clear and strong focus on four business areas where our targets are both market leadership and world-class profitability. We also need to enable development of adjacent businesses and, in the fifth business area Sandvik Venture, ensure that smaller operations with high potential have the opportunity to develop in the best way possible."



Sandvik's business areas



Sandvik Mining

Focused on global leadership on products, solutions and services for high-performing hard rock and soft rock underground and surface mining operations.



Sandvik Machining Solutions

Holds a clear global leadership by offering productivity enhancing products and solutions for advanced industrial metal cutting.



Sandvik Materials Technology

Offers high value-added advanced materials and special alloys for demanding applications in selected niches.



Sandvik Construction

Offers high-performing products, solutions and services within selected niches of the global construction industry.



Sandvik Venture

A business area aiming to create the best possible environment for growth and profitability in attractive and fast-growing operations.

Read more about the history of the business areas on page 20.

THE NEXT 150 YEARS

In a rapidly changing world it is essential to have an inner compass. Sandvik's continued journey is guided by a set of beliefs that will never grow out of date.

The value of values

Sandvik's strong corporate culture evolved in Sweden, but today, the Group has employees of all nationalities and production is spread over many countries. About 95 percent of all sales now occur outside the country of origin. As a multinational company, Sandvik must constantly change and adapt, especially to different local conditions. However, continuity is equally important in order to convey know-how and awareness of what Sandvik represents.

Sandvik's values date back to the company's founder, Göran Fredrik Göransson, who 150 years ago defined the principles that today govern Sandvik's business operations: The determination to constantly find new solutions and paths leading to improvements, the importance of doing business honestly and in a sustainable long-term manner, and close relationships with employees and customers.

Around the turn of the millennium, an improvement project was started to describe and clarify the Sandvik Group's collective values. Three guiding core values emerged: Team Spirit, Open Mind and Fair Play.

"I have never worked for any other company that has such a strong team spirit and such a strong culture," says Honorary Chairman Percy Barnevik, who joined Sandvik more than forty years ago. "I think it has to do with the fact that the company has been in the same location for so long. Practices have passed from generation to generation, people have stayed put for a long time and they feel loyal to each other. This is a contradiction when creating a global company, but it works."



Open Mind



Fair Play



Team Spirit

The soul of Sandvik

Long-term global success and growth will require change and adaptation. However, we will only achieve these goals by staying true to who we are, and living up to the values that make us unique.

Sandvik's values are the soul of the company. We have lived by them for 150 years, and they continue to provide direction. Technology and the world may change around us, but these values remain firm and true. This is essential as Sandvik's people and operations become more and more geographically diverse. And that is why we have put so much effort into training staff around the world in these values.

Open Mind

To have an open mind means to constantly search for improvements, apply a positive attitude to change, and encourage new ideas and the freedom to act.

Fair Play

Sandvik has an explicit responsibility for its impact on society, business and the environment. Fair trade, accuracy of records, equal opportunities, environmental concern and respect for the individual are key concepts that must be secured.

Team Spirit

Within the Sandvik Group, we act together as one team. The team vision also includes close cooperation and relationships with customers worldwide.

Safety first

Sandvik strives to provide a safe, healthy work environment that stimulates employees to perform effectively, to assume responsibility and to continue to develop towards their personal and professional goals. Sandvik's vision is to achieve zero work-related injuries, illness and environmental harm in our own organization.



Sandvik recycles cemented-carbide inserts.

Environmental objectives

The Group has established a number of objectives related to the environment to ensure that Sandvik meets its commitment.

- More efficient use of energy and input materials
- Reduced emissions to air and water
- Increased recovery of materials and by-products
- Reduced environmental impact from the use of hazardous chemicals
- More products that support sustainability principles

Products and business opportunities will take the entire life-cycle environmental impact into consideration, including design, production, usage, disposal and recycling.



The Eco Garden at Sandvik's facility in Pune, India, is watered by recycled wastewater from the company's plant.

Sustainability is the key to the future

Sandvik has always had a clear vision of the future. That is one reason the company has been so successful in achieving its ambitions. The long-term strategy is based on combining the different strengths within the Group, such as advanced R&D, products that add high value, in-house manufacturing, efficient logistics systems, and financial strength – not to mention a well-established approach to sustainability.

Sandvik firmly believes that long-term success can only be achieved by taking a holistic approach. This includes financial, environmental and social responsibility, with an active focus on sustainability. It is natural, and essential, to work in close cooperation with both suppliers and customers on these issues.

The Code of Conduct outlines Sandvik's sustainable way of working, including the company's view on ethics and good corporate citizenship, and its approach to the environment, health, safety and social responsibility. Sustainable development represents an integral part of the business process and encompasses responsibility, risk management and improvement initiatives in the areas of the environment, health and safety, business ethics and human rights. Sandvik has adopted guidelines for its social and environmental responsibilities under the name of Fair Play. There is a dedicated intranet portal and a structured reporting scheme regarding sustainability issues, and a shared Code of Conduct applicable to all employees.



OUR JOURNEY: the first 150 years

Sandvik has come a long way in 150 years, developing from a small Swedish company into a high-tech leader, with sales in 130 countries. Much has changed, but a great deal has remained the same.

ONE HUNDRED AND FIFTY years may not sound so dramatic, but the world has changed almost beyond recognition during this time. When the company was founded back in 1862 in Sweden, the country still had an almost entirely agricultural economy. Elsewhere, the American Civil War was in full swing. Italy had only existed for one year. Canada still did not. China was ruled by the Qing dynasty, licking her wounds in the wake of the second Opium War, while India was poised to become the shiny jewel of the British imperial crown.

When you look at it like that, it's hard to imagine that Sandvik could possibly be the same company today. But be assured, the spirit lives on. And what's more, that same spirit is still shaping a sustainable future for Sandvik.

So let us take a look at where we are, how we got there, and our future ahead.

You could say it all started when Göran Fredrik Göransson (pictured here) and his partners redesigned the Bessemer furnace to make it more efficient. The result was an effective way to mass-produce steel. A real breakthrough.

So Sandvik started with an innovation, and that's the way we have continued. This edition of Meet Sandvik features some examples of our constant ability to innovate.

But like so many beginnings, Sandvik's was a tough one. On the pages that follow, you will see but a few examples of our ups and downs. Taken together, these glimpses of our past serve to illustrate how change and the ability to adapt to changing times is instrumental to survival.

Sandvik's journey started in bankruptcy

At the end of the 1850s, new railways and giant steamships were hollering for huge quantities of cheap commercial steel. New technologies were needed to meet the demand.

For industrialist Göran Fredrik Göransson, it was a race against time. His company was insolvent and it was imperative that his share in inventor Henry Bessemer's patent for an induction furnace, transform into a commercial innovation.

Financial aid from Great Britain and Sweden came to Göransson's rescue enabling a continuation of the efforts to perfect the Bessemer process. On 31 January 1862, the date considered to be

Sandvik's birthday, the articles of association for Högbo Stål & Jernverk were adopted.

Construction of the new ironworks in Sandviken started in 1862 and Sweden's then largest blast furnace was "fired up" in the summer of 1863. Soon after, the Bessemer furnaces started operating.

Nonetheless, bankruptcy was unavoidable and in March 1866, production shut down. However, a new company, Sandvikens Jernverk, was formed three years later and listed on the stock exchange in 1901.

Today there are only a handful of really large companies in the world that are older than Sandvik.



The Bessemer Works in 1873. From a sketch by Axel Holmström in 1896.

Same age as the Industrial Revolution

Neither today's enormous and complex global economy – nor the Sandvik Group, would exist without the British Industrial Revolution.

British industrialists helped finance several different steelworks in Sweden in order to develop new steel processes. Their capital and engineering techniques helped launch the Sandvikens Jernverk project in 1862.

Great Britain was the cradle of industrialization around the close of the 18th century with the steam engine and spinning machine, together with the country's coal as a source of energy. When

Göran Fredrik Göransson and his partners planted the seeds of what is today the Sandvik Group, the British were fifty years ahead of Sweden in terms of technological developments.

Sandvik's early history is strongly tied to Great Britain. The British pioneers of industry brought Sweden – and that which was to become Sandvik – into the Age of Industrialization and towards increasingly more sophisticated business concepts. Victorian engineers built more complex equipment and plants, thereby building a vital market for Sandvikens Jernverk.

Sandvik's early heroes

Sandvik's early history is inseparably linked with the founding Göransson family. Göran Fredrik Göransson had the ideas and was the driving force, but he was not alone.

The new steel facility in Sandviken would never have materialized without, for instance, financial backers Pontus Kleman and Johan Holm. John Leffler, Kleman's engineer, played an important role in finally mastering the Bessemer process – a prerequisite for what was to come.

When the business restarted in 1869 as Sandvikens Jernverk, Göransson's son Anders Henrik Göransson was the formal head of the company. His father had declared personal bankruptcy and

was forbidden to take an active part in new enterprises.

A. H. Göransson was to have an influential role in the growth of Sandvikens Jernverk. When the price of steel plummeted in 1877, it became apparent that the company needed to make major changes.

A. H. Göransson was extremely knowledgeable about the world's steel markets. He saw only one way forward for Sandvikens Jernverk – a higher level of processing and production aimed at quality markets. For more than forty years A. H. Göransson ran the company from an engineering and volume vantage focusing on advanced customer solutions.

1862 Göran Fredrik Göransson founds Högbo Stål & Jernverks AB in Sandviken, Sweden. The company's employees succeed in using the Bessemer method to produce steel.

1864-65 Sales agents in Denmark, Norway, the UK, Russia, Germany and France.

1866 Financial backer Johan Holm, who guarantees the company's liquidity, goes under, causing Högbo Stål & Jernverks AB as well as Göran Fredrik Göransson to go into bankruptcy.

1868 Put up for auction, the facilities are bought by the Göransson family and friends and restructured under the name Sandvikens Jernverks AB. The eldest son, Anders Henrik Göransson, is appointed president.

1872 Sandvikens Jernverk takes part in the Moscow Exhibition. Russia is the company's largest market due to demand for railway materials and bayonet steel.

1860 1861 1862 1863 1864 1865 1866 1867 1868 1869 1870 1871 1872 1873 1874 1875

Born in the wilderness

No other global industrial manufacturing company is located as far north as Sandvik, at the same latitude as northern Canada, Alaska and Siberia.

Why did Göran Fredrik Göransson found Sweden's largest ironwork on the sandy shore of a lake in what at the time was essentially wilderness?

It was here, at the 61st latitude, that the best charcoal and the purest ore was to be found. With his vast experience from shipyards, Göransson in all likelihood wanted to monopolize the workers' time when they were on location. He probably also wanted them a safe distance from competing employers



– and the temptations of the city.

Göransson also owned the land, which had both water and railway connections to the port in Gävle, on which the industrial area was to be developed.

Hard work

Early industrial workers faced harsh conditions. The first Sandvik employees were farmers' sons who used shovels and axes to clear the land for a new industry. They froze, were poorly nourished and worked twelve-hour days, six days a week. They slept in cramped, small, bare log cabins around smoky open fireplaces.

Sandvikens Jernverk had about 100 employees in 1869, its first

year of operation. 140 years later, Sandvik had about 50,000 employees, and customers in over 130 countries. They are part of a contemporary knowledgeable elite that collaborates over geographical boundaries.

Sandvik's heroes have often been engineers and marketers working in the midst of the organization. Most of Sandvik's CEOs have worked their way up through the ranks.

Unique expertise

Sandvik has always worked with the most advanced technology of its time. Today's representatives of the company do not consider themselves to be revolutionary pioneers, but more the administrators and developers of an inspiring legacy.

Sandvik's cluster of expertise has grown stronger. Today, the company has patents, drawings and expertise pertaining to hundreds of thousands of advanced products in alloyed steel, titanium, cemented carbide and ceramics.

Two factors in particular con-

tributed to these developments: Knowledge of materials and customer know-how.

Sandvik's core expertise in metal and materials is the root of the company's success. A combination of materials know-how, process engineering and quality control has propelled Sandvik into a leading position in several areas.

Few if any other company in the world has such a wide, accumulated knowledge in terms of tools and equipment and how customers put them to practical use.



Smeltery worker in the 1920s.

1876 Wire rolling and cold drawing operations start in Sandviken. The company participates in the World's Fair in Philadelphia, Pennsylvania, and uses the Sandvik brand for the first time in an official capacity.

1879 Cold-rolled U-shaped steel threads for umbrella ribs are bestsellers.

1881 New agent in France generates production of cold-rolled articles such as corset springs and saw blades.

1883 Recession, dwindling demand and prices. Göran Fredrik Göransson, who has been the informal head of the company, is appointed chairman. Production of cold-rolled and hardened strip steel starts.

1889 Seamless tubes are supplied to the new power industry.

1891 Number of employees reaches 1,100 as processing procedures become more labor-intensive.

1893 A large new billet mill for wire, strip and tube production is built in Sandviken.

1876 1877 1878 1879 1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1890

On top of technology shifts

From its very start, Sandvik has been in the vanguard of technology. The company was founded on a mechanical engineering development, the Bessemer process.

Two new materials, developed in the 1920s, proved significant: stainless steel for tubes and strip, and cemented carbide for rock drills and for metal cutting.

Stainless steel – corrosion-resistant chromium steel – was discovered and patented by Germans and Brits in 1912. The discovery made it possible to satisfy a wide range of demands from customers in different industries.

Sandvikens Jernverk's first attempt at stainless steel smelting was reportedly in 1921. Three years later, regular stainless steel production started, first of tubes and then wire and strip.

An exclusive license in 1932 for steel tube production to the US using the pilger mill method proved significant for future direction. One single cold drawing could now replace several while offering better quality.

Several new pilger mills were built and Sandvikens Jernverk launched one type of stainless steel seamless tube after the other. A "multi-roll mill" was developed in house and changed the production of thin strip for razor blades, valve steel and other products.

In the 1950s, the process industry's demand for extrusion of high qualitative stainless steel tubes posed an enormous engineering challenge. A new plant – the largest in the industry – was completed in Sandviken in 1960, leading

to a market-leading position in the premium-priced tube market. Moreover, productivity increased two and a half times.

Cemented carbide is a chemical compound of tungsten and carbon, that is almost twice as hard and heat resistant as steel.

In the early 1940s, Sandvikens Jernverk collaborated with Luma on a plan for cemented carbide. It involved: 1. Production of rock drills with cemented carbide inserts to reconstruct Sandvikens Jernverk's popular old rock drill product. 2. Tools for metal machining such as lathe tools, mills and the like. 3. Tools for wear parts, like those found in textile machines.

An almost overnight success came in 1947 when Sandvikens Jernverk, together with Atlas Diesel (later Atlas Copco), started selling machines and drills as a unit. In the beginning of the 1950s, all of Sandvik's profits came from its rock drills.

Tool developments in the mid-1950s were dictated by trends in the US, where inserts had been designed that could be turned or replaced depending on the degree of wear. A strong clamping device eliminated the need to braze these cemented-carbide indexable inserts into the tools.

A special grinding technique soon established Sandvikens Jernverk as the market price leader, enabling the company to take its first step towards global leadership in the manufacturing industry's perhaps most important engineering segment.



Cemented-carbide and other ceramic materials are important for tools used in metal cutting.

1901 Sandvik is introduced on the Stockholm Stock Exchange. Sandvik's scientists use Sweden's first metal microscope.

1902 Sandvik starts supplying steel conveyor belts.

1907 Production of hollow drill steel for rock drilling starts.

1914 Foreign debts are written off. Material is in demand for airplanes, ball bearings, axles for gun carriages and weapon mechanisms. Sandvik British Agency is set up in Birmingham.

1916 Substantial increase in profit due to war-related inflation and backlog in payroll overhead.

1917 Submarine embargo stops exports to the UK and the US.

Innovative backbone

Constant change and new products are the backbone of Sandvik's business. Customers and their production engineering demands are the basis for all discussions regarding the direction of the company.

Practically all of Sandvik's customer relations deal with different engineering challenges and there is constant development. Rock has to be machined more efficiently, metal has to be drilled, turned or milled quicker, and materials have to last longer.

Demands are often extremely tough and operations seldom generate media headlines, even though the company's products are always there when new types of aircrafts are unveiled, new oil holes are drilled, energy plants are built, infrastructure is expanded, mines are opened, materials are transported or prostheses are operated into place. Those readers who have a pacemaker probably

also have a wire, about one-third the size of a strand of hair, from Sandvik.

Independent business areas are the main reason why Sandvik has been able to survive and expand profitably on such a broad front in so many niche areas. It is impossible to know in advance what the company's next major growth segment will be and what may evolve into a new, independent business area. In all likelihood, Sandvik already has sound customer relationships there.

Sandvik operates in demanding sectors where products are born, have a breakthrough and become everyday products, or die within five to ten years. Few other companies have supplied advanced components for the production of practically every innovative product during modern-day industrialization.

Product lifespan is shortest in the tool sector: Demands on rock drilling steel have increased alongside dramatically more powerful equipment and techniques.

While Sandvik's stainless steel products have a longer lifespan, it is no longer simply a matter of having enough volumes to fill the metallurgical production capacity.

Instead, it is about creating new values for our customers through technology, know-how and logistics. Consequently, the Group gives top priority to research and development activities.



Sandvik scientists used Sweden's first metal microscope.

Dramatic decades

All companies operate in harmony with their external communities. Sandvik has experienced highs and lows throughout its long history. For instance, the recession of 1877 forced Sandvikens Jernverk to rethink and invest in niche products.

Both World Wars, and the period in between, are the most dramatic periods in Sandvik's history. Sweden was neutral, but the country and its industry were deeply affected by events unfolding in the world.

The average price of steel rose by 290 percent, despite a tendency to use cheaper grades. The share price of Sandvikens Jernverk tripled but industrial workers started organizing and forming labor unions. Labor conflicts grew in number and severity, even in Sandviken. In response to a wave of social revolution that shook Europe at the end of the First World War, the Swedish parliament gave equal voting rights to all men and women and introduced

the eight-hour working day. The boom that economists predicted would come after the war failed to materialize and instead there was a slump in demand. A third of the larger Swedish companies went bankrupt.

Things proceeded to get worse. Shorter work hours and conflicts pushed up the cost of labor even more. Orders were cancelled and raw material prices climbed. Sales figures dropped 66 percent in 1921 and for the first time ever, Sandvikens Jernverk AB reported a major loss.

During the Great Depression of the 1930s, unemployment in the metal industry rose threefold to 20 percent. The company's sales dropped 35 percent in two years.

Yet the reconstruction taking place after the Second World War brought with it recovery of the global economy. Sandvikens Jernverk was able to benefit from new markets and expand as a supplier to the mining, construction and manufacturing industries.



Sandvik workmen, 1927.

1919 Subsidiary in the US: Sandvik Steel Inc., New York City. A new forging mill equipped with a large hydraulic press is built in Sandviken.

1920 The process of electric smelting in induction furnaces is introduced.

1921 Financial crisis drives invoiced sales down 65 percent. Stainless steel production starts.

1922 Sandvik participates in the Peace Exhibition in Tokyo, Japan.

1924 Launch of the first seamless stainless steel tubes. Decision to introduce new hole roll mill due to demand from the new chemical industry.

1926 Subsidiary for production of watch springs in the US. Sales company in South Africa. Investments in feeding mill, strip mill and rod mill. Subsidiary in Canada.

1928 New subsidiary strategy. Subsidiary in Poland.

1929 The Wall Street crash in the US has no substantial impact on Sandvik. The first electric arc furnace goes into operation. Investments in cold rolling mill.

1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920



“People stay at Sandvik for a long time”

Ian Whitehouse
Operator, UK
Experience at Sandvik: 25 years
Age: 47

Ian Whitehouse is low-key about his own twenty-five year anniversary with Sandvik.

“At this place it doesn’t feel like such a big deal. Someone has just completed thirty years and a lot of people have done forty,” he says, adding: “You can tell Sandvik is a good employer because a lot of people have stayed for a long time.”

Ian’s uncle worked for Sandvik prior to him and Ian was pleased to follow the family into a job that offers variety.

“There are quite a lot of aspects to running the plant, so you aren’t stuck in the same chair all day.”

And when asked if it’s hard to do shift work he says: “You look at the plus side and not the negatives. Working at night means I can be free in the mornings and on a nice winter’s morning I can be off work!”

Ian says the team atmosphere he shares with six others is what motivates him.

“It’s competitive here in a positive way. You try and compete to see who can do the best.”



“You gain other perspectives and exchange experiences”

Sonja Reischl
IT Team Manager Logistics, Germany
Experience at Sandvik: 25 years
Age: 48

Sonja Reischl has worked with Sandvik and Sandvik-owned Walter ever since graduating twenty-five years ago.

“I started as a developer in the IT department where I work now,” she says.

Sonja, who is currently preparing to install SAP* in Brazil and Argentina, is working to understand the business processes in order to set up the system in the best way. In order to do so, her team must adapt to the culture they are entering.

“Sandvik is a global company and I find this very interesting. When I first started I was only involved in local solutions in Germany. Since then we have visited a lot of countries and installed solutions all over the world. I’ve learned about different user behaviors and it is amazing how different the same facts and circumstances could be handled in each country,” she laughs.

Sonja has also gained new insights from working within both Walter and Sandvik.

“We have different brands and that is interesting because you gain other perspectives and can exchange experiences with other people in a Sandvik network.”

* SAP is a provider of business management software



“I seized the opportunity to work in a new and different culture”

Marcos Redigolo
Business Analyst, Brazil
Experience at Sandvik: 18 years
Age: 40

Marcos Redigolo was happy when he was invited to join the Sandvik Group.

“I was pleased because I had an opportunity to work in a new and different culture,” says Marcos. “I wanted experience working in a multinational company and exchanging experiences with people from other countries and cultures,” he adds.

“Since working at Sandvik I’ve had the opportunity to not only have contact with people from other countries but also to visit other places.”

Marcos is currently responsible for pricing, statistics and quotations for the export market and for slickline sales in the Brazilian market. He hopes to continue learning and sharing his experience in the future.

“I want to keep learning and improving my experience and knowledge in the field in order to grow professionally and further contribute to the company to achieve the financial goals.”

Global ambition

Sandvik's organization and production operations are spread worldwide, necessitated by customer segments that demand not only quality products but also constant service and intensive collaboration.

China

Sandvik opened its first office in China in 1986 and formed a wholly-owned subsidiary there in 1994. Sales and the number of employees have multiplied since then. In October 2011, Sandvik had about 3,500 employees in China, over 60 sales offices and 13 production sites.

The enormous size and explosive growth rate of the Chinese market, with a breathtaking five-year plan stretching to 2015, makes it a natural market for Sandvik expansion. An additional 40,000 kilometers of high-speed railways and more than 80,000 kilometers of motorways will be built. The plan for nuclear power is the largest in the world, and investments in electric cars, solar cells and wind power are massive.

Sandvik sells tools made of

cemented carbide to China's growing manufacturing industry, but it also provides training so that Chinese manufacturers can boost their productivity and efficiency.

The company sells drill rigs, loaders, crushers and rock drilling tools complete with training programs and post-sales service to China's mining and construction companies.

China's nuclear power industry, energy companies, aviation industry, petrochemical industry and automotive industry buy Sandvik's special products made of high-alloy steel, such as tubes, valve steel, heating elements and steel strip.

Regardless of China's future growth, Sandvik is investing wholeheartedly in the country, not to manufacture cheap products, but to participate in the largest collective industrial initiative ever taken.



Assembly of mining machines at Sandvik's plant in Jiading, China.

1931 The first stainless steel conveyor belts are manufactured. Joint-venture sales organization in Argentina.

1932 Subsidiary in Spain.

1934 The first pilger mill goes into operation. Subsidiaries in Finland and Denmark.

1936 Armament boom, increase in prices.

1942 The Coromant brand is established. Cemented-carbide coated rock drills are developed.

1943 The first cemented-carbide tools for metalworking are made.

1944 Large-scale investment scheme is outlined for the postwar period.

1946 Soldered cutting tools are sold in Finland and Poland. Significant expansion of rock drills.

1947 Bessemer steel production is discontinued in Sandviken. In-house cemented-carbide production.

1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935

— local presence

India

Sandvikens Jernverk already had an agent in India back in the 1950s selling rock drills and cutting tools. Prime Minister Jawaharlal Nehru's visit to Sweden opened the door to new investments and new establishments.

Today, Sandvik has about 2,000 employees in the country. Pune is home to one of the Group's most interesting companies, Sandvik Asia Ltd, a wholly-owned subsidiary since 2001. Sandvik Asia has evolved into an export organization, and it is just a question of time before Sandvik has more employees in India than in North America.

India has an enormous need for investments in infrastructure,

especially in its road network and outdated railway system. A large portion of the population is poor, and is either poorly educated or illiterate.

India does however have economic freedom, democracy, elite schools, millions of English-speaking citizens and an age pyramid resting on a broad base. Its politicians have also started to liberalize the economy, resulting in patches of powerful dynamics.

Current conditions allow for even higher, more expansive and more sustainable growth and there are many indications that India will be the next economic growth miracle after China.



Cemented-carbide recycling at Sandvik's Chiplun plant, India.

North America

The US is today the Sandvik Group's single largest market with sales in the NAFTA region (US, Canada and Mexico) accounting for 17 percent of Sandvik's total invoiced sales in 2010. The Group has 5,600 employees in the US.

Sandvik has been operating in the US almost since day one. It took almost a century, however, before the first production facility was built and it was not until the end of the 1980s that North American competitors were acquired.

In the 1950s, Sandvikens Jernverk development was greatly influenced by the US. The many

advantages with the indexable insert may have gone unnoticed had it not been for the company's focus on North America.

The globalization of Sandvik started in earnest around 1990 with, among other things, a series of acquisitions in the US. Today, Sandvik is the market leader in several North American markets, a fact that is reinforced when Seco Tools is included in the equations.

North American tool and mining equipment companies that were previously tough competitors are now part of the Group, such as Carboloy and Valenite.



The automotive industry is an important customer segment for Sandvik in the US.

1950 Extension drill rods for drilling deep holes starts the modernization of facilities in Sandviken.

1951 Production of cemented-carbide products starts in Gimo, and foreign laborers are recruited to Sandviken. Rock drill production in Canada. Subsidiaries in the Netherlands and Italy.

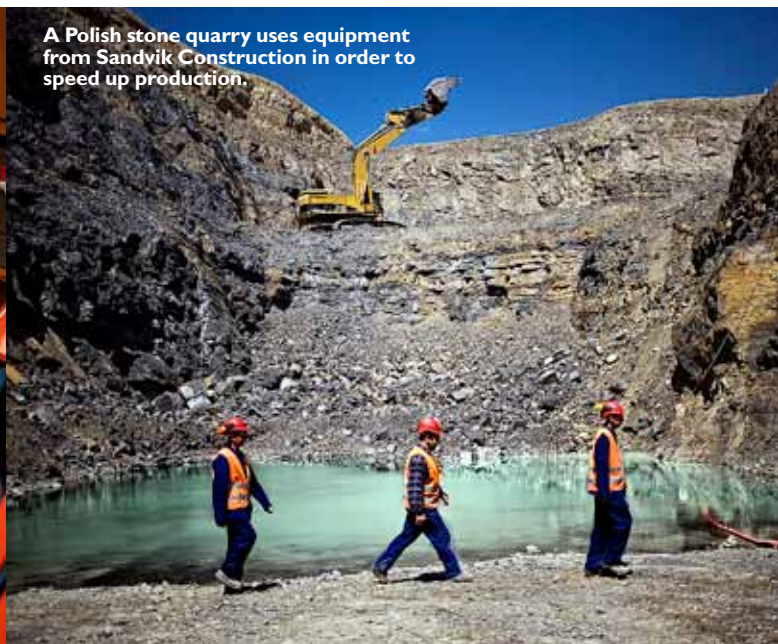
1953 Cemented-carbide plant in Västberga in Stockholm, Sweden. Sandvik takes over the rock drill plant in South Africa.

1957 Wilhelm Haglund named president. Unveiling of the T-max insert holder in the US. Sandvik has invented a method to make indexable inserts more cost-effectively than its competitors.

1958 The Stenbeck family takes over the Göransson family's role as dominant shareholder. Sandvik introduces the indexable insert technique with exchangeable cemented-carbide inserts in Europe.



Roberto Cisternas, Health and Safety Manager for Sandvik in Latin America, talks with plant employees about safety issues.



A Polish stone quarry uses equipment from Sandvik Construction in order to speed up production.

South America

South America is an important expansion region for Sandvik, with continued growth propelled by mining growth in Brazil and Chile. The region accounted for 7 percent of the Group's total sales in 2010. With more than 3,000 employees, South America's figures are on par with those of India and China.

Sandvik grew 54 percent between 2009 and 2010 in Brazil, indicating that the continent is maintaining its share of Sandvik's turnover. A Brazilian factory for mining and construction industry equipment opened in 2010. In total, the Group has ten large operations in South America.

Sandvik's South American

establishment gathered momentum in 1949 and São Paulo in Brazil came to be seen as "one of Sweden's largest industrial cities".

Rock drill production started in Brazil in 1957 followed by the production of indexable inserts in 1963. Steel operations became established in Brazil with stainless steel wire in the 1970s. In the early 1980s, a plant for welded tube was acquired. A cemented-carbide plant was built in Argentina in 1972.

South America's significance not only as a manufacturing region but as a market, has developed gradually. The major breakthrough came in the 1990s with Tamrock and Sandvik's new mining activities.

Europe

Despite incipient changes, Sandvik still has a strong foothold in Europe where sales accounted for 38 percent of total invoiced sales in 2010.

The Group has considerable production in Europe with some fifty facilities and offices in the large, densely populated corridor running through Germany, Benelux, France and northern Italy. There are also a number of factories in the UK.

Sandvik has close to 25,000 employees in Europe, which accounts for 57 percent of the entire Group. Sweden still has the most employees, with more than 11,000. In terms of sales, Germany

is the Group's third largest single market.

It was in Europe and Russia that Sandvikens Jernverk found its first markets. In the 1990s, European countries accounted for about 60 percent of sales but since then, that figure has been cut by around 37 percent.

After the fall of the USSR, Sandvik took a strong interest in Eastern Europe and invested in Russia, Hungary, the Czech Republic, Slovakia and Bulgaria in 1991.

Eastern Europe has seen the biggest growth in recent years and its potential is still strong. Invoiced sales in Russia rose by 29 percent between 2009 and 2010.

1959 A new, larger electric arc furnace is installed. Gustaf Söderlund named chairman. The economy improves and Sandvik has a substantial head start on indexable inserts in Europe.

1960 Investment in two extrusion presses is a bold move. Seamless stainless steel tubes are to become Sandvik's main product in the steel segment. Subsidiary in India.

1961 Rock drill plant is built in India. Knux cutter is to be a best seller for 30 years. Regional office in Japan.
1962 Plant for cutting tools and rock drills in Brazil.

1966 Europe accounts for 66 percent of invoiced sales, North and South America for 23 percent and the rest of the world 11 percent. Subsidiaries in Turkey, Chile, Peru and Malaysia.

1967 Arne Westerberg named president and Hugo Stenbeck chairman. The company has 40 subsidiaries in 34 countries and sales in 100 countries. Subsidiaries in Hong Kong and Venezuela.

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In Nigeria, Sandvik sales engineer Marshall John (left) takes care of crusher maintenance during a visit to a customer.



This copper mine in Queensland, Australia, puts Sandvik equipment to the test.

Africa/Middle East

Africa has vast growth potential in regard to mining precious metals, for example. The Middle East is an important region for the world's energy supply and the need for more effective, safer and environmentally friendly solutions is driving demand for Sandvik's products.

Sandvikens Jernverk entered Africa through the development of rock drills and its partnership with Atlas Copco in the 1940s. A production facility was established in South Africa as early as 1948.

Sandvikens Jernverk established operations in South Rhodesia

(now Zimbabwe) in 1963 and almost concurrently in North Rhodesia which in 1964 became independent Zambia.

Sandvik has also expanded considerably in Nigeria and by the beginning of 2010, operations in Africa/Middle East were larger than in South America. The market segment's sales accounted for 10 percent of the Group's invoiced sales.

So far, Africa is a continent of raw material mining and aid projects. But who says that Africa will not be able to overcome poverty and poor technology?

Australia

China's incredible expansion has had an indirect impact on Sandvik even in Australia where Chinese demand for metals and raw materials has heated up the Australian labor market.

Population-wise, Australia is a relatively small country, but it is still Sandvik's second largest market. Sales in 2010 were almost on par with that of Africa/Middle East and Sandvik had more employees in Australia than in China.

Most of the Australian customers come from the mining industry. The Queensland state, for example, is the hub of Australia's most prolific mining regions, boasting vast reserves of gold, copper and nickel.

Sandvik's sales are increasingly leaning towards the East. Today, Australia and Asia account for more than one quarter of sales compared to one fifth of the sales ten years ago.

1969 Sandvik is first in the world with surface-coated cemented-carbide inserts, called Gamma Coating. Subsidiaries in Thailand and Singapore.

1971 Large orders to European nuclear power plants and hydraulic hoses to the new supersonic airliner Concorde.

1972 The company changes its name from Sandvikens Jernverks AB to Sandvik AB.

1973 Skyrocketing oil prices and a downturn in the economy, but incoming orders climb considerably. Sandvik acquires 65 percent of Seco Tools. Sandvik now has 57 subsidiaries.

1976 Cemented-carbide production starts in Semine, Japan. Acquisition of the US consumer tool company Disston.

1978 High-alloy steel tubes are used to explore severely corroded deep gas and oil wells. Subsidiary in Ireland.



“It is our core values that make Sandvik such a good employer”

John Oberg
Country Manager, Zambia
Experience at Sandvik: 12 years
Age: 53

John Oberg is responsible for the overall operation of the Sandvik entities in Zambia and the Democratic Republic of Congo. He is also responsible for business in the rest of Central Africa. When he first began working in 2006, the company was losing money at a rate of USD 0.5 million per month and had debts totaling USD 22.7 million.

“To address the financial losses we had to make some tough decisions such as terminating loss-making maintenance contracts and this meant retrenching 220 personnel. This was the hardest thing I have ever had to do in my life,” says Oberg.

However, the decision enabled the company to be free of debt by 2010 and it increased sales revenue from USD 64 million to USD 118 million in four years. It was a massive achievement, but Oberg is most proud of Sandvik’s values.

“It is Sandvik’s core values – Fair Play, Open Mind and Team Spirit – that make it such a good employer,” he says. “If you operate the business and live by these core values, life is very straight forward.”

Under his leadership, the Zambian operations have worked hard to contribute to communities across the region and Sandvik has been recognized by the New York-based Global Business Coalition on HIV/AIDS, Malaria and Tuberculosis for its work in HIV awareness.

“I try to work in line with the example set by Sandvik founder Göran Fredrik Göransson who saw the need for a strong sense of social responsibility,” says Oberg.



“I’ve enjoyed my Sandvik journey immensely”

Debbie Kemp
E-business Manager, UK
Experience at Sandvik: 16 years
Age: 41

“My journey with Sandvik has been extremely varied and I’ve enjoyed it immensely,” says Debbie Kemp.

Now working as the E-business Manager for Region Europe, her professional progress is thanks in part to a positive outlook.

“I actually have a mantra,” she says. “A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty.”

Debbie tries to be very positive and optimistic in the way she approaches her work and says she thrives on new challenges. One recent challenge was to help integrate the UK and Ireland into Project Europe.

“One Common Process is our vision, which is to have all forty-three countries using one system,” she explains, adding that Sandvik’s core values have helped her. “Implementing our core values into the way I work has helped me form successful working relationships and succeed with the integration of the UK and Ireland into Europe.”

Debbie’s next task is to promote e-business, Sandvik’s solution to Internet order management. She will approach this with the same positive attitude.

“I always strive to achieve objectives by putting in a one-hundred percent effort and commitment,” she says.

“I try to work in line with the example set by Sandvik founder Göran Fredrik Göransson who saw the need for a strong sense of social responsibility.”



“Keeping an open mind about opportunities is the key”

Jon Wynnemko
Sales and Marketing Manager, US
Experience at Sandvik: 13 years
Age: 36

Jon Wynnemko began his career at Sandvik working with inside sales, and after a year he was given the opportunity to work in outside sales selling both diamond and carbide products.

“Since then, with great support, I’ve worked my way through our sales organization to my current position,” says Jon, who is a sales and marketing manager.

“This position allows me to make decisions that directly impact the current and future success of our sales goals, strategies and bottom-line results. “I enjoy these challenges,” he adds.

One success has been helping transform the rotary tool account from what was perceived as a low-value commodity into a high value-added, market-leading product. Keeping an open mind about opportunities is the key to continuing this success, he says.

“As Albert Einstein said: ‘In the middle of difficulty, lies opportunity.’ By being optimistic, moving forward and acting on opportunities, we can continue developing our business successfully, with profitability.”

For Jon, Sandvik’s 150-year milestone is thanks to three strengths he sees in the company.

“It really is fantastic to work for a company with such a great history of leadership, innovation and pride.”



“Sandvik is fair for every individual”

Sneha Ashok Kale
Quality Assurance Technologist, India
Experience at Sandvik: 2.5 years
Age: 23

Sneha Ashok Kale describes her work as the kind where ideas are discussed openly.

“We tackle challenges head on. When there’s any kind of problem I like to discuss it with my teammates, check the details and get to the root cause,” she says.

Sneha speaks energetically about the team spirit amongst her workmates.

“I get a lot of satisfaction playing my part in achieving our targets and satisfying our customers, she says. “There is good coordination with teammates and anyone can work anywhere, handling each other’s responsibilities in their absence.”

In 2009 she had the opportunity to train the production people on the coordinate measuring machine (CMM) used for the inspection process.

“I got a good response from the production department which is one of the greatest achievements in my Sandvik career.”

She believes her work is a place where everyone has opportunities to contribute.

“Sandvik is fair for every individual because our core value includes Fair Play. This means equal opportunities for both men and women. The daycare facility allows parents to work here comfortably and the common code of conduct is a part of our day-to-day working culture.”

“It really is fantastic to work for a company with such a great history of leadership, innovation and pride.”

YOUNG AND PROMISING

As of 2012, Sandvik Mining and Sandvik Construction are two individual business areas, but they were born as one in 1997 when the Group secured its long awaited "third leg".

Already in 1947, Sandvikens Jernverk established itself as the world's leading manufacturer of rock drills with cemented-carbide bits.

A partnership with Atlas Diesel, later Atlas Copco, led to the development of "the Swedish method", lightweight pusher leg rock drills that were effective and durable, marketed under the motto of "One man – one machine". Together, the two companies spearheaded rapid technical advances in the industry. However, a conflict of interest brought an end to the partnership in 1989.

Sandvik was now on its own in the mining market and instead entered an agreement with Finnish Tamrock whose ambition of creating an international supplier in the mining and construction industries paved the way for Sandvik Mining and Construction. In 1997, the company acquired all of Tamrock and started to build the new organization. The Group had secured its long awaited "third leg" to add to cemented-carbide tools and special steels.



Sandvik's high-performance twin-boom jumbo is used for fast drilling in drifting and tunneling.



The efficiency of Sandvik crushers help speed up production at construction sites.

From the start, Sandvik Mining and Construction was one of the major market players, with broader operations than any competitor. No customer area was foreign to Sandvik, but the concept of also manufacturing, marketing and servicing equipment via a global service organization was new. Few manufacturers knew

more about equipment than Sandvik since the business concept from the beginning was to understand and improve customer processes.

Earnings-wise, Sandvik Mining and Construction left much to be desired in the beginning. Diminished demand and restructuring expenses pressed earnings close to zero. But the new

millennium started expansively and operating margins improved. Focus was on mining and infrastructure when growth gained momentum in Asia. Now, by running two individual business areas, one for Construction and one for Mining, Sandvik ensures the right prerequisites to run the businesses according to their specific needs.

1979 Lennart Ollén named president and Arne Westerberg chairman.

1980 The first Rotoform equipment is developed. The Block Tools system for turning is introduced. Subsidiary in Taiwan.

1981 Severe dip in sales volumes. Problems with Eurotungstène and Disston. The number of employees is cut by 2,245. Subsidiary in Zimbabwe.

1983 Göran Ahlström named president and Percy Barnevik chairman. New organization with seven business areas. Sandvik incurs its first loss in 62 years.

1984 Per-Olof Eriksson named president. New decentralized organization is announced in Sweden, UK, France, Germany and the US.

1989 The Berlin Wall falls and Sandvik launches ventures in Eastern Europe. Collaboration with Atlas Copco in the rock drilling segment comes to an end. Launch of ceramic cutters. The new generation of the New Wave cutter edge is a success.

1976 1977 1978 1979 1980 1981 1982 1983 1984 1985

THE WORLD'S SHARPEST TOOLS

Sandvik Machining Solutions is the world leader in metal cutting with cemented carbide. It would have been impossible to mass produce cars and electronic products without this technique.

Sandvik Machining Solutions is the world leader in metal cutting and the expansion of Sandvik Coromant tools is rivalled by few in the history of industry. Yet in the 1950s, members of executive management foresaw a future without tooling in the cemented-carbide segment. The belief at the time was that tools never had been a strong suit for Sandvikens Jernverk and never would be.

The introduction of a new department turned things around in 1955. Cutting tools were differentiated from the rest of the cemented-carbide operations in order to achieve a clearer focus.

The risks associated with producing special tools for customers were recognized within the organization. Small, custom jobs delayed large projects and had a negative impact on profits. Therefore, top priority was given to standardization and efficient production.

Cemented-carbide indexable inserts were first developed in the US during the 1950s. Sandvikens Jernverk grasped the opportunity. It was a most incredible turn of events when a small cemented-carbide



Sandvik tools boost productivity and profitability in the engineering industry.

department in an almost 100-year old Swedish steel company started marching toward global leadership in the manufacturing industry's most important engineering segment.

Tool costs are just a small part of the total production expenses in metal cutting but they are highly influential in

terms of productivity and profitability. Sandvik constantly develops tools and methods that increase machining speed.

Sandvik Coromant's new cemented-carbide plant in Västberga, Stockholm, Sweden contributed to the breakthrough, as did the new Gamma Coating (GC). Modular tool systems revolutionized

set-up times and new generations of indexable inserts were launched for turning, milling and drilling.

Today, the use of more lightweight and difficult-to-machine materials has led to a greater demand for advanced tools. Most of the products and offerings have been developed over the past five years.

1990 Coromant Capto tool system for turning, milling and drilling.

1991 Sandvik acquires Bahco Tools. The tunnel project under the English Channel uses Sandvik products. Subsidiaries in Hungary, the Czech Republic, Slovakia and Bulgaria.

1992 Sandvik acquires 25 percent of the Finnish rock drilling equipment manufacturer Tamrock and CTT Tools from SKF.

1994 Record profit of SEK 4 billion. Clas Åke Hedström named president. Sandvik is the first to introduce industry-scale production of diamond-coated carbide cutting inserts.

1997 Industrivärden becomes the Group's new major shareholder. Announcement of a new organization with three business areas: Sandvik Tooling, Sandvik Mining and Construction and Sandvik Specialty Steels.

1999 The IT and telecom bubble inflates the world's stock markets. Sandvik divests Saws and Tools.

1986 1987 1988 1989 1990 1991 1992 1993 1994 1995

A HEART OF STEEL

Sandvik Materials Technology's business operations have a history that stretches back to founder Göran Fredrik Göransson.

The business area spans a broad spectrum of products that are the result of 150 years of material evolution and specialization. The common denominators are highly advanced metallic and ceramic material paired with a world-leading metallurgy and R&D organization. A variety of niche operations have evolved for materials in particularly demanding environments from the company's material expertise, ranging from heating elements for industrial furnaces to the umbilical tubes used to hydraulically control the flow of oil or gas from extreme sea depths.

Historically, steel production dominated the Group's business, but the cemented-carbide business, which expanded and gained market leadership, eventually took over.

By the close of the 1900s, steel seldom accounted for more than one fifth of the Group's earnings but extensive efficiency measures led to constantly improving profit and return levels. Meanwhile, external signals were favorable – primarily for seamless tubes when nuclear power appeared to enjoy a renaissance – but also oil extraction at sea spurred Sandvik's material expertise in the development of umbilical tubes.

Further optimism was bolstered by the increasing demand for pre-coated strip coming from fuel and solar cell manufacturers. Another promising development involved components for a series of different applications based on powder metallurgy.

Today, Sandvik Materials Techno-



logy is associated with advanced materials technology for the most demanding industries and applications, new innovations and such things as special alloys and nanotechnology. The business area is positioned to play a critical role in ongoing developments in the energy sector in terms of traditional forms of energy like oil, gas and nuclear power, but also in renewable energy like solar cells and fuel cells.

Sandvik Materials Technology has an R&D department to ensure that the Group is prepared when future growth areas require advanced materials expertise.

INCUBATOR ENVIRONMENT

Sandvik Venture was created to form an environment for growth and profitability in attractive and fast-growing operations with limited synergies with the other business areas.

The business area Sandvik Venture includes both businesses with strategic value to Sandvik and businesses which need more focus to grow or improve within an incubator environment.

The different product areas within Sandvik Venture will be evaluated on a regular basis from structural, strategic and value creation aspects. The following product areas are included in Sandvik Venture: Sandvik Process Systems, Sandvik Hard Materials, Diamond Innovations, Wolfram, Dormer and Sandvik MedTech.



Sandvik Hard Materials supplies a wide range of cemented-carbide products.

2002 Lars Pettersson named president. Acquisition of the majority of shares in German company Walter; North American company Valenite and Japanese brand Toyo.

2003 Specialty Steels changes its name to Materials Technology. A processing systems and steel press plate production plant opens in Shanghai.

2005 China is now the tenth-largest market. Assessment of nine stainless steel wire-drawing plants carried out with the ambition to downscale by 50 percent.

2006 The economy is booming and profits reach record levels. Australia is now Sandvik's third-largest market. Acquisitions in Australia, Chile, Finland and Japan.

2007 Strong growth in Asia for Sandvik. Acquisition of medical device operations in the US and the UK.

Constant expansion

Sandvik has been an expansive corporate Group for more than one hundred years. Through organic growth and business acquisitions, the Group has expanded twice as fast as the global economy. Independent business areas have contributed to profitable growth on a broad front and in many niche areas.

At the time of Sandvik's 100th anniversary in 1962, only about 1,000 employees were stationed outside Sweden. Throughout the 1990s, the organization outside Sweden grew by 53 percent to 25,000 employees.

A strong geographic presence is the basis for Sandvik's ability to survive. It is impossible to know in advance what the company's new major growth area will be, but in all likelihood, Sandvik already has strong customer relations there.

Sandvik operates in demanding niche areas where products are born, breakthrough and become commodities, or end up dying within five to ten years. Life cycles are the shortest within the tool sector. Demand for rock drilling steel has increased dramatically due to more powerful equipment and techniques.



Early IT expertise

As early as the 1970s, Sandvik was one of Sweden's most sophisticated IT users. The computers from that era had a capacity equivalent to that of today's calculators – despite being so large and heat-generating that central units had to be stored in a cold room. Giant computer systems calculated memory capacity in hundreds of kilobytes. Data was entered via punch cards and came out as sheets of paper.

Despite these limitations, Sandvik computerized its order and stock management procedures, production planning and technical solutions. The company's accounting and financial system was one of the most advanced in Sweden.

At the start of the new mil-

lennium, the company turned to e-commerce. Internet was the answer to an old computer dream – to be able to reach anyone, anywhere, at any time and with as much data as possible.

New projects started in the spring of 2001. Sandvik Coromant had already tested e-commerce in Denmark for three years. Three months later, 18 countries had on-line shops with Sandvik products. With the Tailor Made computer system, customers could log in and give their specifications for drills and mills. The system quickly presented a draft for approval before sending the order to the geographically closest Coromant factory. Delivery times were cut by 75 percent.



IT in its infancy.

2008 The financial crisis evolves into a global trade crisis. Sandvik makes significant reductions in capacity. Subsidiary in Algeria.

2009 Order and invoiced sales down 30 percent. Reduction in the number of employees and shorter working hours. Subsidiary in the United Arab Emirates.

2010 Anders Nyrén named Chairman. Strong influx of orders in Asia and improvements reported in other markets.

2011 Olof Faxander named President. Decision to adopt a new strategy aimed at improving profitability and enhancing the Group's position in attractive markets.

2012 The new strategy takes effect. Sandvik celebrates its 150th anniversary on 31 January.

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2008

2009

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2011

MY SANDVIK



“Sandvik is getting better and better as an employer”

Veronica Cardoz
Key Account Manager, India
Experience at Sandvik: 16 years
Age: 42

“I’ve always believed that a company can’t exist and prosper for such a long time unless it has original and inherent good values,” Veronica Cardoz says after pondering Sandvik’s 150-year milestone.

“I always wanted to work for Sandvik and knew it was one of the finest multinational companies in Pune, India.”

Having worked in the company for sixteen years, Veronica says she is still seeing improvements. “Sandvik is getting better and better as an employer. The diversity ratio is improving with more women getting the opportunity to show their skills. I feel proud to practice Sandvik’s core values not only in the office, but also outside, starting from my own home.”

Interacting with customers is a particularly fun part of her job, she adds.

“The contact with my customers keeps me inspired with energy. Every day is full of customer emails, enquiries, orders and phone calls. As the years have gone by, I’ve been able to support my customers in a better way through more customer interaction.”



“It is like being in a family”

Rumen Karamihalev
Managing Director, Bulgaria
Experience at Sandvik: 15 years
Age: 47

Leading several successful projects in various countries and business areas has given Rumen a birds-eye view of how Sandvik’s sustainable growth has been achieved in practice.

“I’m proud of creating new jobs, for example, helping set up a Sandvik organization in the Balkans. I challenge myself to have patience towards the environment and the people I work with. There is always a good and ethical way to do business and in developing countries in particular, we must be aware of this issue.”

This awareness is illustrated by various social initiatives like sponsoring local schools and well-being programs for employees. Watching this investment pay off has been a joy for Rumen.

“In a way it is like being in a family and watching the kids grow up. I believe that everyone at Sandvik has ideas on how work can be improved and this is the best guarantee for sustainable growth,” he says.



“Working at Sandvik is motivating”

Cheng Bo
Finishing operator, China
Experience at Sandvik: 3 years
Age: 27

“I am very happy working for Sandvik with its long history and good corporate culture,” says Cheng Bo. “The core value of Fair Play gives employees room to develop themselves, so working here is motivating. I love my job.”

But reflecting on his time learning the ropes, Cheng admits it wasn’t always easy.

“At the time I started my job, the machine was quite new, so we were all completely green. Thankfully, the Swedish instructors taught us well. We encountered a lot of problems but with the

great support from the rest of the company we solved them one by one.”

This initial period not only helped him learn the physical tasks of the job, but also provided other valuable lessons.

“I formed a habit of ‘look more, listen more and think more’ in my daily work. By doing this, I can find problems at an early stage and solve them efficiently.”

Perhaps it is this approach that has helped his team achieve success.

“My team broke the production volume record several times and was honored with the Quality Salute Award. I was honored as Best Performer and appointed the leader of this group,” says a proud Cheng.

REACHING NEW DEPTHS

All of Sandvik's business areas have customers in the energy sector. And there is no shortage of challenges.

THE SEARCH FOR OIL has taken energy companies to new depths, placing new demands on products and equipment. Sandvik supplies tubes and steel that can accommodate extreme demands at depths of 2.5 kilometers. But how do you make tubes for extremely long hydraulics that do not break under their own weight or get damaged by the pressure at that depth? How do you prevent corrosion? These are the types of challenges that Sandvik Materials Technology solves for its customers.

Some gas turbines for energy purposes, for example, are so large that their output is the equivalent of thirteen jumbo jet engines. When one producer planned its then largest turbine, Sandvik Coromant was contracted to examine how it could be built in the existing facilities using the regular production process. Sandvik's recommendation was to switch to a combined turning-milling technique, a solution that was adopted and produced excellent results.

Another client in the energy sector needed a special insert to make an extremely pressure-tight threaded connection for casings used in gas fields. Sandvik Coromant devised a solution with an insert that has three cutting teeth and a special geometry so that waste chip can be easily removed. Because of this component, the company is now the preferred supplier to the largest energy company in the country.

These examples demonstrate how Sandvik, in addition to components and tools, also provides its customers with valuable expertise.

THE ENERGY PRODUCT that came to be associated with Sandvik most of all was zirconium alloy cladding tubes for fuel rods in nuclear power plants. It was supplied to nuclear power plant projects in Sweden, Germany, Canada and Japan at the end of the 1960s. Fuel rod cladding tubes was

one of the products that sustained Sandvik throughout the international steel crisis of the 1970s when Japanese steel flooded the market.

In the 1970s, new oil fields in the North Sea proved an interesting market for Sandvik. Corrosion-resistant products were needed and high-tensile steel was launched in 1975. The new pilger mill from 1971 enabled Sandvik to make stainless steel tubes in very large dimensions.

The steel division developed umbilical tubes in the beginning of the 1980s. They were used to convey instructions between the control tower at the surface of the ocean and the oil or gas sources at the bottom of the ocean or on land. The core of the umbilical is made of flexible metal hose surrounded by a sheath of seamless, stainless steel tube. The tube was

delivered on spools up to 1,700 meters in length.

Fuel cells that effectively convert chemical energy to electrical energy are a new up-and-coming product with many potential applications, for example back-up generators for heavy motors.

Energy is and will remain a central customer segment for the Group, whether in regard to technical advice, tools, components, materials or large construction projects.

Long history

- The energy industry has been one of Sandvik's largest customer segments almost since the start
- As early as 1897, Sandvik started making seamless tubes for British steam boilers.
- The business expanded during World War I when demand for marine boilers grew.

Sandvik supplies tubes and other products that can accommodate extreme demands at depths of 2.5 kilometers.



MY SANDVIK



“I appreciate the good working atmosphere”

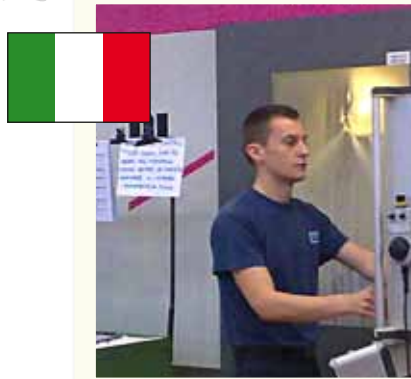
Pilar Arco
Inside sales, Spain
Experience at Sandvik: 16 years
Age: 43

Things were different when Pilar Arco started working for Sandvik in 1995. Most notably, all data was provided on paper.

“I had to enter information in the computer and make templates of all my documents. It’s different now because information is computerized and we use the same tools and programs around the world. It makes things a little easier,” laughs Pilar.

Working with inside sales at Sandvik in Barcelona, her greatest challenge now is “to be more efficient everyday and to learn as much as possible.” At heart she’s a people person.

“The best thing about this job is to be in contact with customers, to work with a good team here in Spain and to have the possibility to meet all my colleagues around the world. I appreciate the good working atmosphere and relationships I have with my bosses in Spain and Sweden. Swedish people are fantastic!” she adds.



“I joined Sandvik, thanks to an internship”

Mirel Kokic
CNC Operator, Italy
Experience at Sandvik: 5 years
Age: 23

“I joined Sandvik in 2006, thanks to an internship,” says Mirel Kokic. “In the beginning I started in the insert department and then I went to the soft tool department. This gave me the chance to acquire expertise with several types of equipment.”

Mirel is now responsible for the manufacturing of blanks and finished items on CNC machining centers (mainly Bridgeport and Stama).

“Working in a special production unit gives me the chance to come across a huge number of different products as a result of the highly engineered solutions worked on by my colleagues,” he says.

Thanks to the philosophy of Mirel’s team, he feels he can be a part of everyday improvements.

“Our milestones are flexibility and cooperation with the other team members. I’m used to freely expressing both my opinion and suggestions and our aim of continuous improvement is achieved through brainstorming sessions.”

“I feel like we are heading in a good direction”

Cindy Fenton
Administrator, Australia
Experience at Sandvik: 3 years
Age: 23

When asked what she likes most about her job, Cindy Fenton responds quickly.

“That’s quite an easy one: the people. I feel privileged in my position to interact with a whole host of Sandvik people, from site administrators and managers, all the way through to our segment vice presidents on a daily basis,” she says.

“The conversations are eye opening and a golden opportunity to learn from others. It’s nice to see that people from all walks of life have

similar feelings towards safety and well-being, in and out of the workplace.”

Cindy believes that the culture within Sandvik has encouraged this sort of thinking. As part of a team that has come together over the last twelve months, she works as an Environment, Health and Safety (EHS) administrator, collating, analyzing and reporting various EHS statistics, from site-specific information, to region-wide data for global reporting.

“I feel like we are heading in a good direction. We now have a team that consists both of thinkers and doers, of wisdom and fresh ideas. We are an eclectic bunch with different problem-solving techniques, and I think this contributes to some of our best ideas.”



THE RIGHT TOOLS BOOST PRODUCTIVITY

Product development in the automotive and aviation industries is incredibly fast-paced. New materials place even greater demands on machining.

GROWING GLOBAL COMPETITION has led to increased focus on productivity in the manufacturing industry, placing higher demands on tools. The right tool can quickly boost productivity without substantial equipment investments.

For the automotive and aviation industry, the ability to constantly launch new products and production methods has been an influential success factor. Sandvik's strong market position is partly due to the fact that the company earmarks six percent of its sales for R&D, making it the leading knowledge-based company in the industry.

Tooling technology in the automotive industry is well established but its development never ends. Take for instance a manufacturer, where the production of components for gearboxes and drive trains was already streamlined. When the company started having trouble with broken tools a solution was devised in cooperation with Sandvik's engineers, involving a new tool design and material. Small details can determine how an entire production process works. The higher price for more advanced tools is fairly insignificant in light of this.

The financially struggling aviation industry is constantly on the lookout

for lighter aircraft due to high fuel costs. Solutions can be found in new engineering. New gas turbine engines have heat requirements that only advanced alloys can handle, but machining these materials is extremely difficult. In Asia, a manufacturer of the combustion chamber for aero-plane engines turned to Sandvik for advice. The CoroMill 210 and CoroTurn SL70 have, in combination with the Coromant Capto, contributed to radically slashing the manufacturer's machining times.

NEW HEAT-RESISTANT but difficult-to-machine materials exist not only in the heart of the aircraft's engine. They are being used in increasingly more components as heat shields are removed to reduce the weight of the aircraft. One example is a manufacturer of locking systems, who was faced with a new type of aircraft that required a heat-resistant spring shaft made of an advanced alloy for the engine. It took four hours to make each component, but thanks to Sandvik's products and expertise, it was possible to cut machining time in half.

Already prior to World War I, both the automotive and aviation industries were Sandvik customers. They bought low alloy steels and later, in the 1920s, structural

steel. At this time however, Sandvik was not particularly well known in the tooling segment. While Sandvik still sells advanced components made of special material and designs to the automotive and aviation industries, it is the company's machining expertise that dominates its customer offering. In the 1960s, Sandvik established itself as a leading manufacturer first of indexable inserts, then of hard-surface inserts and as a global service organization which reinforced its market-leading position.

The automotive industry became a major indexable insert customer early on and was influential for Sandvik's breakthrough in North America.

Market leader

- With brands like Coromant, Walter and Valenite, Sandvik masters the manufacturing industry's foremost technology – metal cutting.
- This makes Sandvik a market and world leader, regardless of product or technique.
- In 2009 and 2010, Sandvik had as many patents in the US as all of its competitors combined.



Deep under the Swiss Alps: Sandvik equipment is used in a tunnel project that will permit Europe's high-speed trains to race straight through the Alps.

TAKING THE HEAT

In just a short time, Sandvik has built one of the world's most extensive operations for mining and construction equipment.

THERE IS NO LACK of spectacular challenges for Sandvik in the mining and construction industries. Take for example the Lady Annie copper mine in Australia. Conditions at the mine are extreme with summer temperatures reaching 50 degrees Celsius. The first gigantic new Australian drill rig from Sandvik was sold here. Computer-operated and technically advanced, it can run for two shifts without re-fuelling.

Security was a main issue in another Australian project when a former open-cast mine filled with sea water (and sharks!) was scheduled to re-open. Due to the risk of collapse and the danger presented by the sharks, it was necessary to use a rig that could be remotely controlled from a raft. Sandvik had the solution.

Germany's largest salt mine, situated under the city of Heilbronn, is yet another demanding mining project. Sandvik's 125 ton bolter miner eats into the salt mountain vertically, replacing traditional drilling and blasting. The new method is also more cost efficient.

Sandvik's construction equipment faces just as many demanding customers. The largest tunnel project in modern times is underway in Switzerland. Tunnels for high-speed trains are being drilled at a rate of ten meters per day through the Alps. To maintain the pace, various operations – from drilling and loading to securing and removal – must at times be carried out in parallel. Sandvik's equipment makes it possible.

NIGERIA HAS the world's fastest growing construction market, as well as hard granite bedrock. The country has a shortage of roads, railways and ports. Sandvik's crushing equipment has therefore played a major role in the expansion of the country's infrastructure.

Hard rock drilling is not a new problem for Sandvik. In 1873, the company sold its first complete rock drills. The technology was however very primitive. Long, heavy drills that quickly wore out had to be transported out of the mine to be re-forged and hardened and at times the

drill steel that was brought out of the mine weighed more than the ore. The drill machines were clumsy and ineffective.

A new era of lightweight pusher leg drills with lightweight, effective and durable cemented-carbide bits started after World War II. Advances in the international mining industry were rapid as equipment became stronger and bolts and drill heads more advanced. Sandvik quickly made a name for itself in South Africa, Canada, Brazil and Australia.

In the 1990s, Sandvik built up a complete range of machines and drilling equipment through acquisitions.

Sandvik's operations have geographically moved south and east through its projects with mining and construction customers. The mining industry was the Group's largest individual customer segment, accounting for 36 percent of invoiced sales in 2010. Strong mining countries like Australia, China, South Africa and Brazil all rank among the Group's largest markets.



“We have good team unity”

Akira Yoneya
Group Leader, Japan
Experience at Sandvik: 22 years
Age: 40

“A young fellow has a rich idea and an elder has abundant experience,” says Akira Yoneya, explaining why the balance of his team at the Semine plant is just right.

“Our team has fifteen people aged in their twenties to fifties. The age differences are very wide but we have good team unity.”

Since joining the Semine plant in 1989 Akira has seen the plant grow and succeed.

“I feel proud of this,” he says, pointing out Semine’s “top class plant” recognition, which was awarded by the Sandvik Group in 2004. The plant was awarded this status due to its efforts improving quality, lead times and production costs.

“We were very pleased and believe we will continue to contribute in the future,” Akira says. The ability to contribute is made easier by a work environment in which everyone feels free to offer ideas. One such idea has already helped save millions of yen.

“I introduced a visual control system for spare parts and consumable materials in 2008 and reduced their use to a minimum quantity and cost. We introduced the system to the whole workshop in Semine in 2009 and as a result of this, we reduced the cost of spare parts and consumable materials by 10 million yen,” says Akira.

“Sandvik makes sure that work is done safely”

Gilson Alves Leite
Operator, Brazil
Experience at Sandvik: 18 years
Age: 50

“I feel proud and grateful to be a part of the Sandvik family and to participate in the celebration of its 150 years,” says Gilson Alves Leite.

Gilson works as a TIG (Tungsten Inert Gas) welder and assembler of metallic elements on Sandvik Materials Technology’s unit located in the town of Vinhedo in Brazil.

“What I like about my job is conducting my activities with quality, perfection and safety. With each order that comes into my group, there is a different activity and a new challenge ahead,” he says.

In addition to striving for perfection, Gilson appreciates Sandvik’s commitment to safety and feels that this is what makes Sandvik a particularly good employer.

“Sandvik makes sure that all work is done safely and it recognizes our efforts and continuous improvement projects that cultivate a good organizational climate. I feel safe working for a company like that and my family appreciates it too!” he says.



“The ability to contribute is made easier by a work environment in which everyone feels free to offer ideas.”

CATERING TO CONSUMERS

While Sandvik today primarily sells to other businesses, the company has had a long and successful history as a consumer goods manufacturer under its own brand.

THERE ARE STILL MANY consumer goods – like guitars, mobile phones, golf clubs, shavers and razors blades – that are made of materials and components from Sandvik. However, Sandvik no longer markets its own line of consumer products.

As recently as the 1970s, saws and tools were an up and coming segment that after expansion in the form of about a dozen acquisitions, made up 14 percent of the Group's sales. North American Disston's handsaws and battery-operated garden tools were foremost in this venture. The actual platform for expansion was Sandvik's own handsaw which had a very strong brand name in the global hobby market. It was expensive but it did not have to be re-sharpened. The product was so well known that the general public thought of Sandvik as a saw maker.

Why then did the steelworks invest so heavily in consumer products? It started during a crisis in the 1870s. Technological breakthroughs meant that increasingly larger steelworks were placed close to coal mines in Europe and the US making it possible to use sub-standard iron ore.

The price of regular steel plummeted and Sandvikens Jernverk no longer had any use for its pure ore or premium charcoal. Unable to compensate for the long-distance transportation costs, the company had to quickly find new specialty products.

When it comes to the speed of change, the manufacturing industry in the final decades of the 1800s can be compared to the IT industry of today. One new product

after the other was launched, both big and small. High demand for umbrellas and corsets was quickly followed by sewing machines, typewriters and telephones. In the 1890s, the bicycle with rubber tires, a chain and a freewheel was revolutionary. Among the multitude of goods launched were the gramophone, the car and the paraffin motor for small boats.

THESE CONSUMER GOODS helped rescue Sandvikens Jernverk. The company's smiths had to quickly learn how to cold-roll strip steel and draw threads and tubes of Bessemer steel that were then processed into products like saws, razor blade steel, corset springs, umbrella ribs, bike spokes, engine components, watch springs and much more.

First out was the small section mill and strip for tube production, and then wire drawing. In the years that followed, Sandvik improved production of fishhook wire, card wire and needle wire followed by umbrella wires soon thereafter.

Sandvikens Jernverk faced off against its toughest Swedish competitor to deliver strip steel to the international razor blade market in which North American Gillette was the most prominent customer. Sandvik took the lead after World War II.

Sandvik's greatest success in the consumer market was the handsaw, which the company first introduced in 1886. The 1991 acquisition of Bahco allowed Sandvik to also offer torque wrenches and other hand tools. These products were



"Sandvik saws and Swedish fists – two prime champions of dependable quality." Advertising campaign from the days when Sandvik still marketed consumer products.

never big enough in their sector, ranking only six in the world. Sandvik's board of directors therefore decided in 1999 to sell the entire saw and tool business area, banishing the classic handsaw from Sandvik's range. The Group continues today to follow its consistent and long-term strategy – to only invest in market segments where it has, or can establish, a world-leading position.

From corsets to clocks

Consumer products from Sandvik's past include saws, razor blade steel, corset springs, umbrella ribs, bike spokes, engine components, watch springs and much more.



“Thanks to the Sandvik philosophy of team spirit...”

Mohammed Adnane Boumeur
CNC Operator, Italy
Experience at Sandvik: 5 years
Age: 28

Mohammed Adnane Boumeur was born in Morocco and started working for Sandvik five years ago. He knows a lot about the different machines thanks to the diversity of the work he has undertaken since starting.

“I started working in the turning department but I’ve also been involved in the new soft tool department,” says Mohammed.

“I’m now responsible for the manufacturing of blanks and finished items with CNC Turning Centers (on Mazak and Gildemeister CTX 510).”

Working in different areas has also allowed Mohammed to network with a wide range of colleagues and he has enjoyed this aspect of his job.

“Thanks to my involvement in different projects and also to the Sandvik philosophy of team spirit, I’ve had no difficulties getting along with colleagues and making friends,” he says.

“Also, I appreciate Sandvik very much because it takes care of the environment.”

“Everyone has the opportunity to offer suggestions”

Sten-Inge Ståhl
Packer/material handler, Sweden
Experience at Sandvik: 37 years
Age: 54

Sten-Inge Ståhl has worked with Sandvik for almost a quarter of its 150-year history but it wasn’t something that he thought about until recently.

“It feels good!” he says.

Sten-Inge works in Sandviken, Sweden, and his job involves working with storage systems for products in stock, quality control as well as packing and loading customer orders before delivery worldwide.

“It also involves a lot of truck driving,” he adds.

With all this work it’s not surprising that he hasn’t spent much time contemplating the company’s long history, but reflecting now he is happy with how his job has developed over the years.

“The job has evolved from carrying out a single operation in the work flow to carrying out any operation in the delivery chain. It gives me more satisfaction to get responsibility, more skills and a different understanding of the whole chain.”

Despite his long tenure Sten-Inge remains enthusiastic about working with continuous improvement.

“Within our department we have improvement meetings every second week where everyone has the opportunity to offer suggestions in respect to safety, quality, delivery, lead time, productivity and the working environment,” he says.



“It gives me more satisfaction to get responsibility, more skills and a different understanding of the whole chain.”

R&D ON THE CUTTING EDGE

Keeping up with customers' needs is essential to the success of a business. Sandvik's substantial investments in research and development are aimed at developing new products and processes that anticipate the market's ever-evolving demands.

RESEARCH AND DEVELOPMENT are key to Sandvik's business strategy. Each year, Sandvik invests almost SEK 3 billion (EUR 330 million) in research and development, and the Group has around 5,000 active patents.

More than 2,400 Sandvik employees work with R&D, across the business areas. The focus of their work is guided by demand from customers and the market. Sandvik is constantly launching new products – thousands of them each year – that offer growth potential, expand market share, increase profits and provide a better environment and quality of life.

Sandvik CEO Olof Faxander underlined this point at the company's Annual General Meeting in 2011. "We are in a fantastic position since we are the world leader in so many product areas," he said. "We have excellent technical expertise along with an ability to commercialize technical achievements and develop products that customers are willing to pay good money for."

Faxander also stressed the importance of continuing to invest in research. "We

must ensure that we have minds focused on developing our products in order to stay competitive and retain our strong market positions," he added.

Sandvik Materials Technology operates research and development centers in Sweden, India and the Czech Republic that put considerable emphasis on energy efficiency and sustainability. "We are very much focused on energy," says Olle Wijk, Executive Vice President and Head of R&D and Technology at Sandvik Materials Technology. Besides developing products for the oil and gas production, the research and development centers of Sandvik Materials Technology are working on applications for the next generation of nuclear power plants. They are also looking at ways to improve the efficiency of coal-fired power plants since a very big part of the production of electrical energy in the world is still based on coal. Another important part is the research within the field of renewable energy sources such as solar energy and solar cells.

"By the development of new materials for high temperature applications it is

possible to work with higher temperatures and pressures and thereby increase the efficiency and lower the carbon dioxide emissions," Wijk says. "When we develop our new high-temperature materials, we'll have a positive effect on the environment."

Sandvik Materials Technology's research interests cover a broad array of applications, from developing solid oxide fuel cells for cars to finding ways to eliminate the use of lead in producing tiny parts for wristwatches. Its work in the field of high-temperature materials ranges from industrial heating furnaces to the wires that go into the heating elements of tumble dryers.

"The trick is always to be ahead of your competitors, so we are working on these things continuously," Wijk says.

IN INDIA Sivaprasad Palla is the head of Sandvik Materials Technology's research center in Pune. The booming Indian economy is growing at a pace exceeded only by China among major economies, and the facility keeps Sandvik close to this increasingly important customer.

This research center does computational modeling, a useful technique for optimizing manufacturing processes by replacing the traditional trial-and-error methods that are costly and time consuming.

"Modeling is a tool that can be used in product and process development to reduce lead times and costs," Palla says. The Pune center uses models to simulate such metallurgical techniques as extrusion and rolling. Using computational fluid





Magnus Boström, Manager Physical Metallurgy at Sandvik Materials Technology, with a type of electron microscope that images a sample by scanning it with a high-energy beam of electrons in a raster scan pattern.

“With better tools you can produce more with the same machine, meaning that we’re saving costs in terms of people and investment, but we’re also saving the environment.”

dynamics, it studies steel-making processes such as liquid metal flow, heat transfer, continuous casting and cooling.

“We work very closely with the business areas because modeling is a field where we need validation,” he says.

“The major challenge for the center is continuous development of necessary competencies, as every new project demands a new direction,” he says.

At Sandvik Machining Solutions, R&D initiatives have led to advances in the efficiency of electricity-generating windmills. “Gear milling is a rapidly growing business, and that’s related to windmills,” says Ulf Rolander, former Vice President R&D, Sandvik Tooling, and now Head of Technology at Sandvik Venture. “At the top of a windmill the propeller is going quite slow, and you need to turn that into something going fairly fast to generate electricity.” The large components that perform this function require extremely precise machining.

WITH COMPONENTS for windmills as with anything else that Sandvik develops, Rolander says the starting question is the same: “Where is the value we provide to customers in our products?” The answer, he says, is improving the productivity and performance of the tools and increasing the knowledge of how to use them. “Typically, 3 to 4 percent of the cost of

production for our customers is tools, but the influence is enormous,” he says. “With better tools you can produce more with the same machine, meaning that we’re saving costs in terms of people and investment, but we’re also saving the environment.”

Environmental considerations are a central factor of the work in aerospace, where a drive for lightweight materials is aimed at building planes that consume less fuel. These materials may involve composites that require new approaches to machining, such as carbon-reinforced plastics backed with titanium. “That’s one of the major initiatives that is growing fast,” Rolander says.

Åke Roos, former Vice President R&D and Quality, Sandvik Mining and Construction, oversaw centers in Sweden, Finland, Germany, Austria, the US, Australia, India and China. “Our main focus has been to reduce complexity in operations,” he says. Getting there depends on emphasizing innovation, raising the level of technical competence and reducing time to market.

In 2010 a new product development center was started in Jiading, China. Roos points to what he calls the three cornerstones of R&D efforts: “How we develop the product, the research we need to support the development, and finding an efficient way of working.”

FOR THE BUSINESS AREA'S R&D operation, the key to success is the ability to combine application competence with advanced scientific competence in specific technological areas.

R&D operations contributed to the development of the newly launched down-the-hole drilling rig. “It’s a holistic approach to how you develop a product,” Roos says. The rig maximizes production while keeping fuel consumption and operating costs as low as possible. It also improves working conditions in the operations as it was designed with the comfort and safety of the operator in mind. “Safety is number one,” he adds. “We never compromise on safety.”

In the end, Åke Roos says, the most important thing is to have the right people in place. “R&D is all about having people’s individual competence in the organization. That’s the core of getting an R&D organization to work, and that’s the strength in our operations.”

R&D in a nutshell

- Sandvik invests about SEK 3 billion (EUR 330 million) in R&D annually.
- The Group has 5,000 active patents.
- More than 2,400 employees work with research and development.

The Sandvik share – an impressive investment

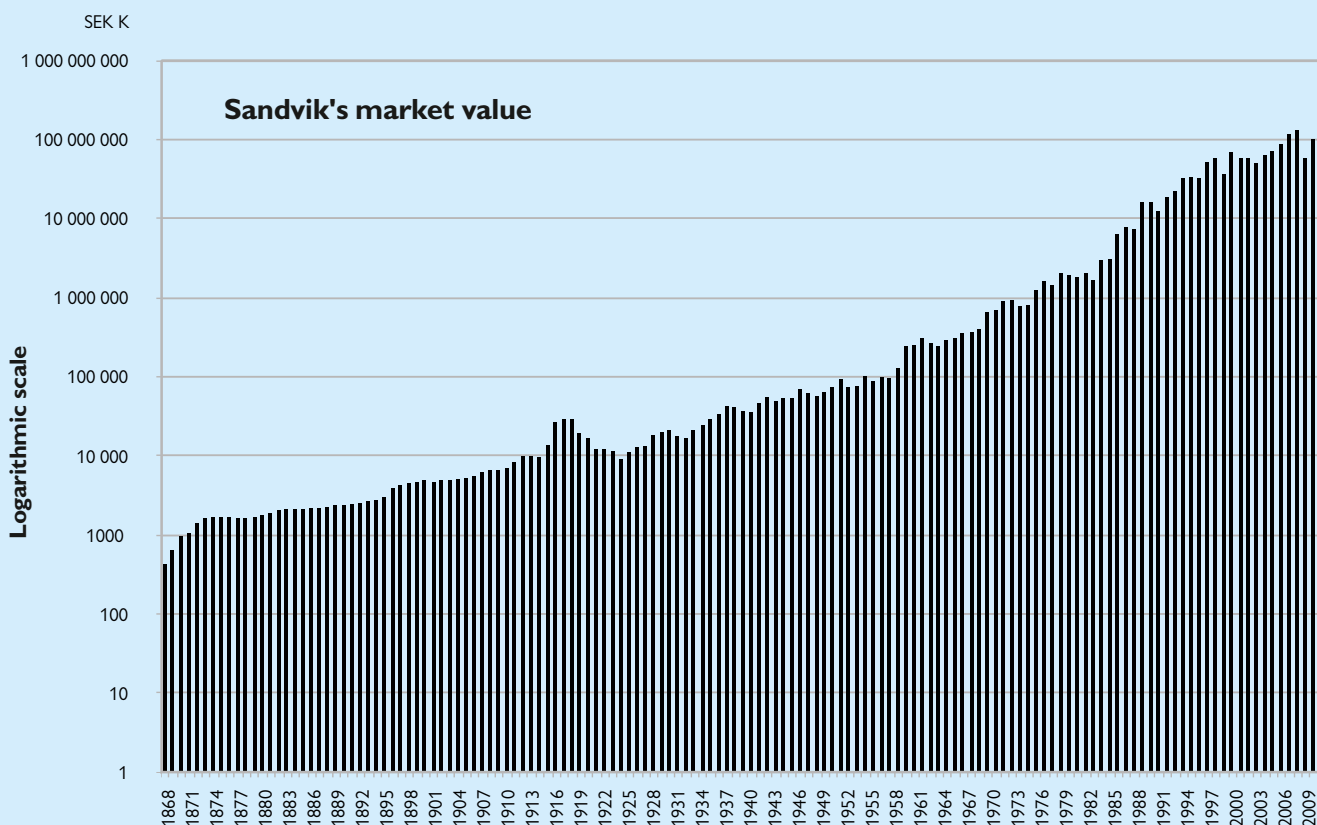
If your great, great grandfather had invested 5,000 Swedish kronor in one of the first shares sold after Sandvik's reconstruction in 1868, his holding would have been worth 241 million Swedish kronor in 2010.

MANY SHAREHOLDERS and employees made – and facilitated – Sandvik's 150-year journey. Joint-stock companies like Sandvik also have, at least theoretically speaking, a chance at perpetuity regardless of all those who come and go, be they employees or shareholders. The secret is an invention from the 1800s, which still today makes Wall Street one of the most famous streets in the world: the joint-stock concept, without which Sandvik would hardly still be here today.

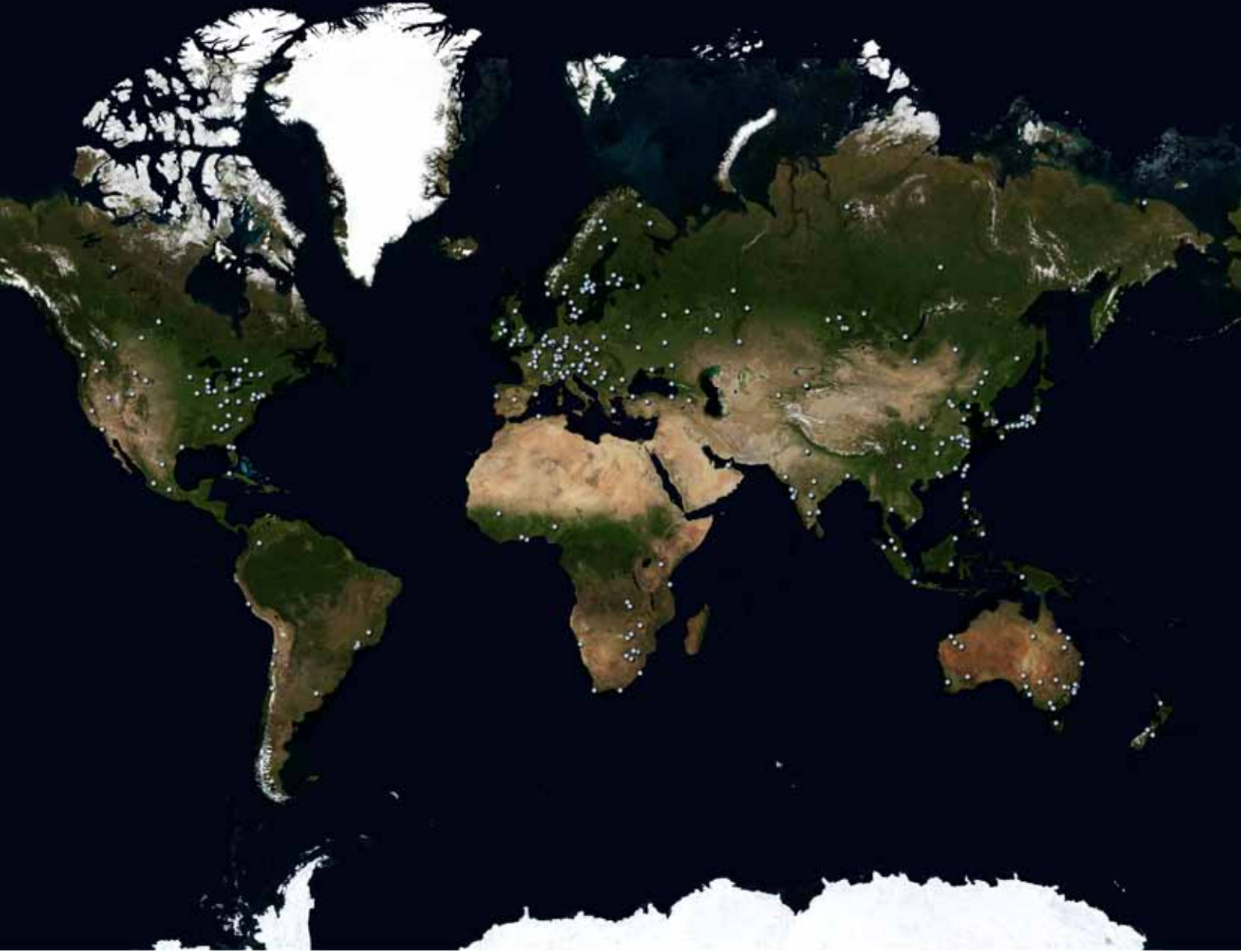
Not only has the Sandvik journey been long, it has been profitable, too. Sandvik's access to historic data shows that a family that bought 5,000 Swedish kronor worth of the first shares issued after the 1868 reconstruction, and then merely held on to its holding, would be able to sell it for 241 million Swedish kronor in 2010. What's more, this amount climbs considerably when the present value of all dividends paid since then is figured into the equation.

At about four percent real growth in

value every year, plus regular dividends of over three percent, the Sandvik share is an impressive investment even taking inflation into account. Sandvik is one of the companies behind why the Stockholm Stock Exchange was recognised as one of the world's most successful stock markets in the 1900s.



The map shows Sandvik locations as of October, 2011.



A global presence. Sandvik is a high-technology engineering Group with advanced products and world-leading positions in selected areas.



sandvik.com