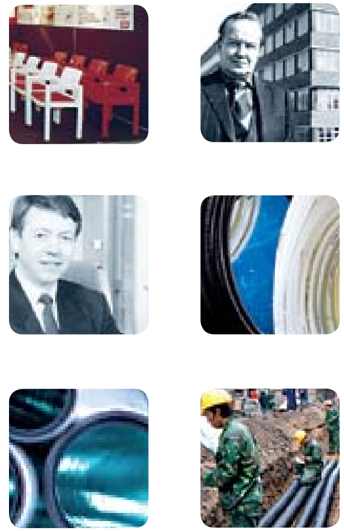
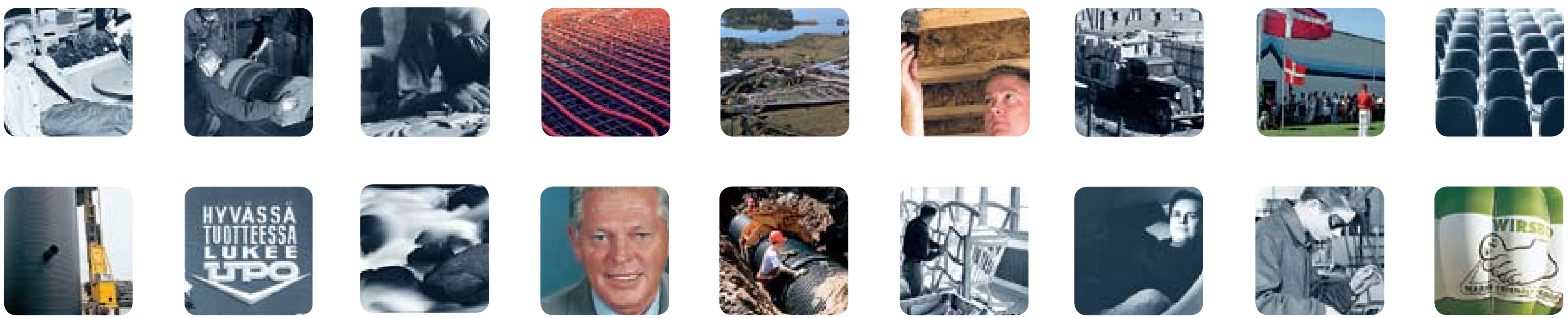


FOUNDED IN 1918
UPONOR

Uponor. Years 1918 to 2008



Uponor. Years 1918 to 2008

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Uponor. Years 1918 to 2008

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Contents

Aukusti Asko-Avonius (1887-1965). This picture was taken in 1907.

How did a furniture factory become a plastic pipe supplier?

Asko, Upo and Uponor

Uponor is a leading international supplier of plastic pipe systems for the residential and commercial building markets and municipal infrastructure applications. At the beginning of 2008, Uponor had production facilities in 9 countries and 90% of its total turnover was generated outside its native Finland.

Oy Uponor Ab, the predecessor of Uponor Corporation, was established in 1982 by the Finnish multi-industry corporation Asko Oy and Finland's government-owned oil company, Neste. In the beginning, Uponor had production facilities in Finland, Sweden and Denmark. Oy Uponor Ab was a subsidiary of Asko Oy until the end of 1999.

Uponor Corporation, listed on the Helsinki Exchange, was established in the beginning of the year 2000. At the time, Asko was the sole owner of Oy Uponor Ab. As the companies merged, Oy Uponor Ab ceased to exist and Asko assumed the name Uponor. As a result of the merger, Uponor Corporation inherited Asko's household appliances and flooring businesses.

Although they were soon divested, Uponor's history is nevertheless part of Asko's history. This publication focuses on the events following the year 1982, but because of the close connection between the two companies, Uponor and Asko, it will briefly explain how Asko became Uponor, or – in other words – how a furniture factory became involved in plastic pipes.

The history of Asko dates back to August 1918, when Aukusti Asko-Avonius founded a carpentry workshop in Lahti, a hundred kilometres Northeast of Helsinki.

Aukusti Asko-Avonius was a successful and versatile businessman. During his lifetime, he developed a modest carpentry workshop into a conglomerate employing about 6,000 people, by 1965.

Asko was the largest furniture supplier in the Nordic countries and had the largest furniture retailer chain in Finland. It exported its products to dozens of countries and had retail stores in the largest cities in Germany. Asko was one of the best-known Finnish trademarks preceding Nokia.

In 1938, Asko-Avonius started to manufacture metallic spring beds in the factory's warehouse. This humble beginning resulted in Upo Oy, Asko's sister company, which became a supplier in the metal industry and Finland's largest producer of household appliances. In 1965, Upo opened a plastic plant in Nastola. This was acquired by Oy Uponor Ab in 1982.

In addition to the enterprises mentioned above, Aukusti Asko-Avonius also owned a plywood factory, a clothing factory, sawmills, warehouses and two rural estates with industrial-scale food production. Asko-Avonius was one of the businessmen whose lives' work shaped Finland; a country evolving from an agriculture-based community into an industrial service society.

A natural born entrepreneur

Nothing in Aukusti Asko-Avonius' background pointed to a successful industrial career. He was born in 1887 as the son of a very poor family living in Karelia, an area Finland had to cede to the Soviet Union after World War II. According to Asko-Avonius' biography, he did not rise to the property-owning class "from the bottom, but from rock bottom".

His personal characteristics explain his exceptionally successful career; he was born with talent and ambition, he was self-confident, strong-willed and most importantly, he had a mission. As a mere schoolboy, Asko-Avonius was sure he would become a factory-owner. Such precocity amazed those around him and has left future generations gasping at the apparent ease with which he built an empire.

Aukusti Asko-Avonius received his industrial and business education in Finland and Sweden while working. He spent the years between 1912 and 1916 in Southern Sweden, in Skåne and Småland, accumulating invaluable experience in 11 carpentry workshops.

When he returned to Finland, he had decided to establish a carpentry workshop in Vyborg; a town which today belongs to Russia. The Russian trading routes to Central Europe had been blocked in 1914 due to World War I and Finland – at that time an autonomous Grand Duchy of the Russian Empire – took full advantage of the situation. Finns sold all the paper, food products and munitions they could produce to Russia. In 1916, Russia's share of Finnish foreign trade was over 90% when it had been less than one third before the war. Finnish furniture was also sold to Russia in high volumes. Aukusti Asko-Avonius had an idea for efficient furniture production, and plans for getting rich in the Russian markets.

Unfortunately, he was late. Russia's war against Germany was starting to take its toll on the people and war weariness led to the Russian Revolution in 1917. Bolsheviks seized power in Russia, Finland declared its independence and exports to Russia came to an end. Asko-Avonius was forced to give up his export plans.

Aukusti Asko-Avonius surrounded by his workers at the beginning of 1920's.

When the production facility started its operation in 1928 it was the biggest furniture factory in Finland.

At the beginning of 1918, a coup was attempted in Finland leading to civil war. The Rightists supported by a German division triumphed over the Leftists supported by the Russian Bolsheviks. The civil war left the nation wounded. Society was divided and the national economy that had begun to crumble in 1917 collapsed completely.

Unlike many others, Aukusti Asko-Avonius saw a business opportunity. He founded a carpentry workshop in September 1918. Asko-Avonius' first product depicts the times better than any explanation – coffins.

Like most entrepreneurs, Aukusti Asko-Avonius was an optimist. But why was he in such a hurry to start a business when even the other optimists were waiting for better times?

Asko-Avonius had a mission. He was determined to be the first to take advantage of the shortages in supply resulting in the bankruptcy of several of the larger carpentry workshops when Russian trade came to an end. Swimming against the tide was later formulated into one of the keys to his success.

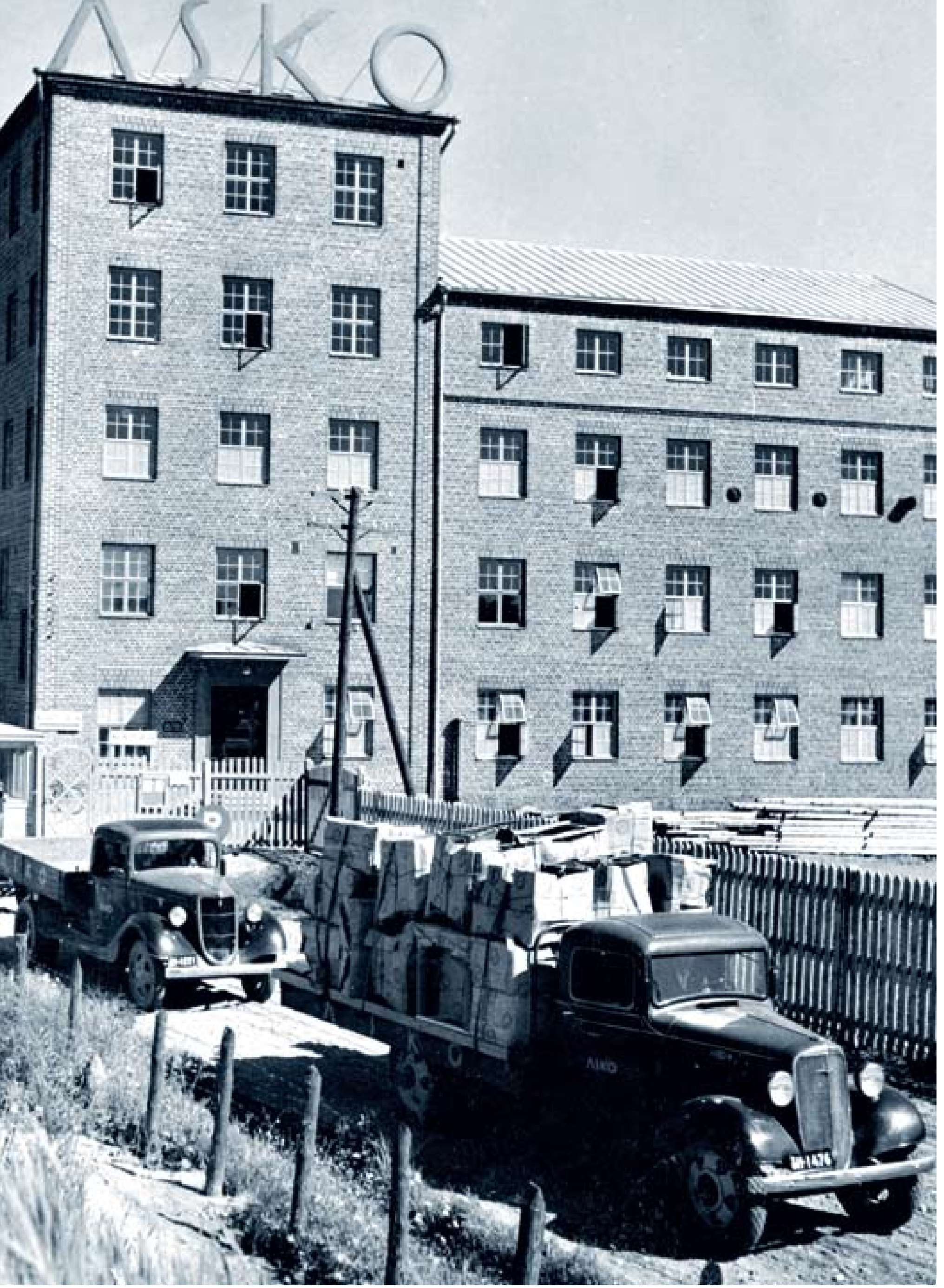
He also organised his production differently. Asko-Avonius' workshop was probably the first in Finland to employ Henry Ford's methods. In the spring of 1919, the workshop, employing just under 10 workers, initiated serial production of one product – a desk designed by master carpenter Salonen and Asko-Avonius himself.

Although Asko-Avonius' single product ideology was short-lived, he never fully discarded his original idea. Asko-Avonius was confident that mechanically mass-produced furniture would replace hand-made single items. All of his operations were based on serial production; the workshop engaged in the production of one product at a time.

Where had Aukusti Asko-Avonius discovered these ideas?

Some say he understood the advantages of serial production as a little boy when watching his father lathe distaffs one by one. By 1918, he was familiar with Henry Ford's methods. It can also be deduced that Asko-Avonius' industrial thinking developed during the years he worked in Sweden. During the 1910s, a contem-

Asko's first hit – a mass production desk.



Asko's factory and some of its transportation fleet in the 1930s.

porary theme in Sweden was to have inexpensive, practical furniture available for the lower levels of society living in small apartments and unable to afford expensive, custom-made furniture. If there was demand for mass-produced furniture in Sweden, why shouldn't there be in Finland as well?

Aukusti Asko-Avonius' vision was correct – or at least close enough. In Finland, industrialisation and urbanisation picked up speed in the 1920s. In 1918, over 80% of the Finnish population lived in the countryside. But in the following years urbanisation occurred faster than anywhere else in Europe. Industrialisation drew people to the cities. The great depression in the 1930s interrupted this development, but even including the depression years, the average growth in industrial production in Finland during the period between 1918 and 1938 was 8%. Just as Asko-Avonius had believed; demand in the domestic markets replaced the lost Russian trade. More than this, the real value of Finland's carpentry industry increased seven-fold during the period from 1918 to 1938.

There was increasing demand for industrially produced furniture and Aukusti Asko-Avonius did not hesitate to claim his share. He expanded the company's production with risky investments. And this revealed a further factor that set Aukusti Asko-Avonius apart from many of the other entrepreneurs. In his view, the future lay in growth. Hence, he had no intentions of consolidating his achievements. Instead, he lived a modest life and invested all of the profit in increasing production.

100,000 chairs to England

In 1929, the Great Depression in the USA had reached Finland. Asko-Avonius had scaled his production for growing, not declining markets. Hence, demand had to be sought abroad. The UK, Finland's most important country of export, seemed the most promising. New orders were not easily achieved because there were so many others – Belgians, Swedes, Germans – all trying to gain access to the British furniture markets which the depression had not hit as hard as many other European countries. Savage competition resulted in low prices. It was soon evident that shipping complete sets of furniture all the way from Finland was unprofitable. The solution was to export simple pieces of furniture unassembled. At a maximum, one third of Asko's production was exported. Exporting also helped Asko-Avonius keep his companies running. The most popular products were chairs. At the beginning of the 1930s, about 100,000 chairs were exported to the UK every year.

Around 1934, when the depression was over, furniture was still being exported to Europe and some even to North Africa – but the volumes were smaller. Following the recovery of the domestic market, furniture was sold there and increasingly often in Asko's own retail shops. During the Great Depression, half of Finland's furniture retail shops went bankrupt. Asko-Avonius took advantage of the situation and founded a chain of retail shops that was soon the largest in Finland.

Upo powers growth

"You need to have both wood and metal. When one declines, the other rises." This represents the advantages of multi-trade in Aukusti Asko-Avonius' words.

Before World War II in 1939, Asko was Finland's most prominent furniture factory. It had been able to reap the benefits markets offer to those who come first – high demand and excellent margins. However, within 20 years the situation had changed. New furniture factories had been established and margins had narrowed. Attractive growth markets had to be found elsewhere.

Metal furniture had increased its market share in Finland as well as abroad. In Finland, metal spring beds had become very popular. Asko-Avonius, who had been a pioneer for 20 years, now followed the others' lead. In 1938, a metal spring bed factory was built on the same lot as the furniture factory, the factory producing metal beds being named Upo Oy. Asko-Avonius had bigger plans for metal furniture, but since demand in Europe was already declining, Upo focused solely on metal beds. The metal spring bed factory provided training for Arvi Tammivuori, Aukusti Asko-Avonius' son born out of wedlock in 1911. Tammivuori had been employed in 1933 as an assistant driver. Five years later he was running Upo Oy.

In the spring of 1939, Asko-Avonius sent his son on a field trip

Arvi Tammivuori (1911-1972), Upo's father.

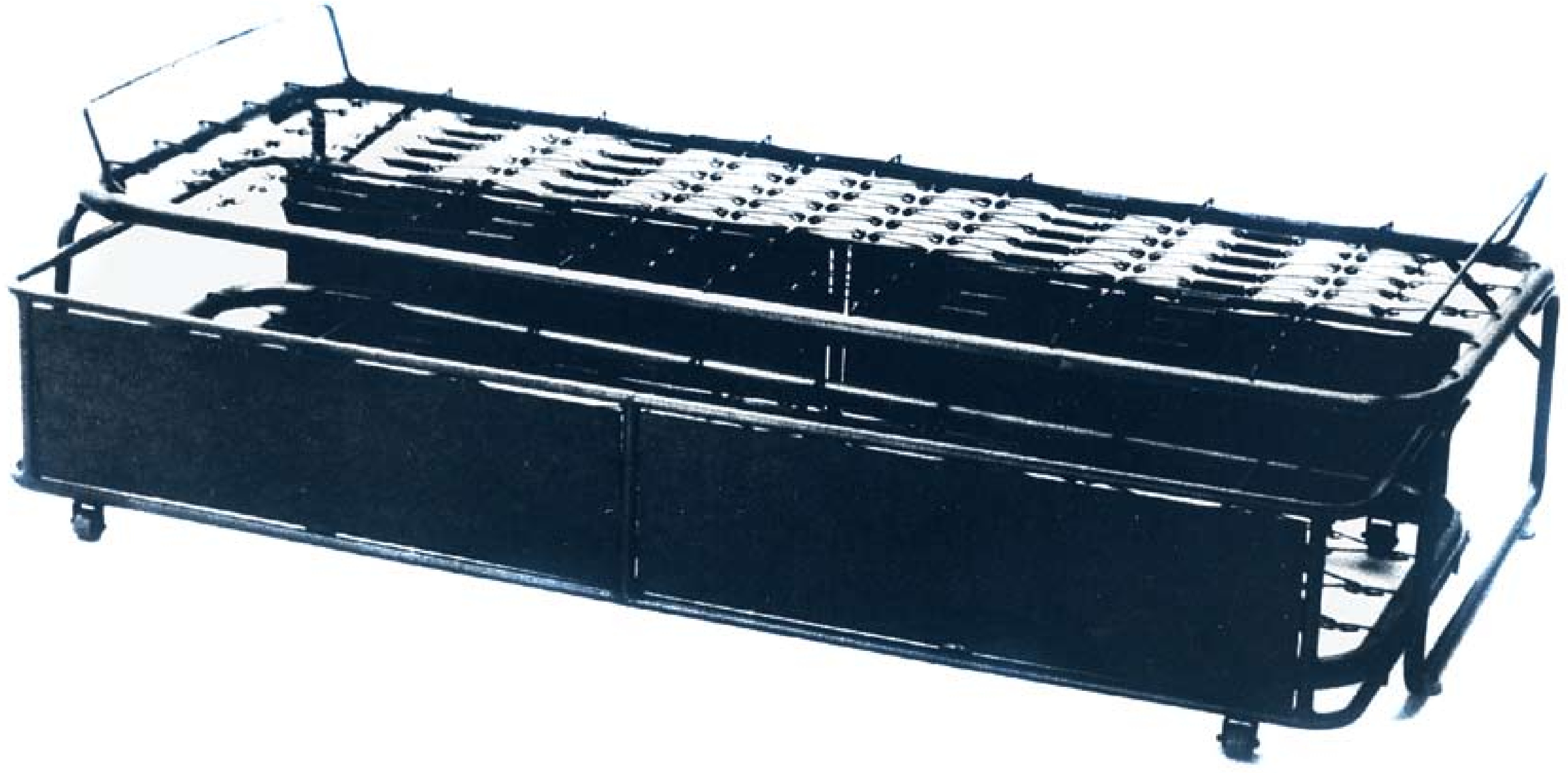
to the USA. Tammivuori attended the New York World's Fair for one week. He was also present to witness the dawn of television broadcasting in the USA. The future, in which electric machines would free people from heavy household work to enjoy leisurely moments in front of the TV, for example, was one of the main themes of the Fair. In addition to cumbersome domestic robots, some very useful household appliances were displayed. The hosts told their amazed European audience that half of American households were already equipped with refrigerators and washing machines.

The world fair, radiant with future optimism, left its visitors with bittersweet memories – the vision of a world which had crumbled in the face of the war breaking out in Europe, Hitler's Germany invading Poland before the World's Fair had even ended. The World's Fair had a permanent effect on Arvi Tammivuori. His strategy for Upo – to provide electrical appliances to Finnish households – was a direct result of his visit to the Fair.

As soon as Arvi Tammivuori returned to Finland, he insisted on including refrigerator and electric mangle production in the plan. Two months later, the war began and put an end to these plans. The first Upo product in 1940 was not a refrigerator but prams. It was joked at the time that pram production was the logical successor of metal spring beds. But Upo was soon also able to launch other products, including modest household appliances such as electric irons and cooking plates.

With Upo, Aukusti Asko-Avonius' field of operation expanded

Asko's subsidiary Upo Oy was established in 1938. Upo Oy started out as a metal spring bed supplier.

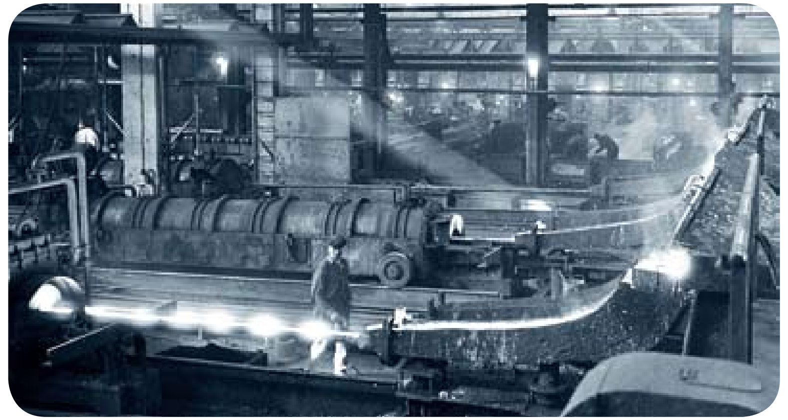


Upo's foundry started its production in 1946 participating in war reparations.

beyond furniture. However, the business idea did not change; Upo manufactured only products for which demand was high enough to lead to mass production.

In 1946, when World War II was over, Upo built a foundry and began production of metal pipes. These gained a very large share of the Finnish market. A productive foundry enabled expanding production to larger household appliances in the early 1950s – as soon as the rationing policy in post-war Finland had been discarded.

In 1950, Upo closed a contract with the Swedish Electrolux AB and obtained a license to start producing Electrolux's most popular refrigerator model. Electrolux provided the motors and inte-



riors, Upo made the housing. Licensed production provided the basis for Upo's development into an appliance supplier. For Electrolux, the contract with Upo provided access to Finland's almost untouched household appliance markets.

The first Electrolux refrigerators manufactured by Upo were in the stores by the end of 1952. It was the year of the Olympic Games in Helsinki, and Finns were treated to many other products of which they had been deprived during the post-war period of scarcity. Although Finland's success in its Olympic Games was very modest – compared to the expectations, that is – the successful event strengthened optimistic attitudes towards the future. A status quo had been found in Finland's unique geopolitical situation as a democratic capitalist state next to the Soviet Union and Finland could finally turn to the West. It was an opportune time for new ideas and new products. At Upo, an Italian mini car was disassembled in order to assess the requirements of car production.

Upo never initiated car production, but continued to provide the markets with household appliances at an accelerating pace. Upo's washing machine assembly line was ready in 1953 and, in the following year, the assembly of vacuum cleaners was initiated in Lahti.

After the first couple of years, it was already evident that refrigerator and washing machine production had been profitable. As a result of perfect timing, Upo's versatile production increased the company's turnover 12-fold during the years 1946 to 1956 – not

"Kultanuoli" (Golden Arrow) was Upo's washing machine model with superior sales in the 1950s.

excluding the effect of inflation.

At the beginning of the 1950s, Upo had started with licensed production. After ten years of industrious hands-on training, the company was confident its products had sales potential abroad. By the mid-1960s, Upo had subsidiaries in Sweden and Norway. Exporting had a promising start. Small, noiseless absorption refrigerators were sold to hotels in the USA. Furthermore, refrigerators, washing machine parts, electric mangles, radiators and metal pipes were exported to the Scandinavian countries and to Turkey. In the summer of 1964, Upo signed a contract for 10,000 refrigerators with the Soviet Union and, in 1965, the first refrigeration equipment contracts were signed with the Netherlands and Spain.

In the same year, Upo launched its first plastic pipes. These plastic pipes were produced in Nastola, a small town next to Lahti in Southern Finland. The Nastola plant was a gigantic factory for plastic and refrigeration equipment production. This was Arvi Tammivuori's dream; a vision he promoted with near-evangelical ardour without paying any attention to external and internal opposition. A majority of the factory's 1.8 hectare floor space was devoted to refrigeration equipment, but most of the new technology could be found in the plastics production facilities. Initiating plastic pipe production made Upo into its own competitor – Upo's foundry sold metal pipes to the same customers. However, in Tammivuori's view, it was better to resort to cannibalism than wait for others to leave Upo's metal pipes rusting in storage.

In building up production, Arvi Tammivuori was nothing short of his father and, from the late 1950s until the beginning of the 1960s, scaffolding was never torn down – it just changed place. In 1955, Upo employed over 1,000 workers. Ten years later, this number had increased to 2,300 employees. At the same time, Asko's furniture factory and retail shops employed about 2,500 people.

Exporting East and West

"This is what I have told everyone, and now I'm telling you, the day I open a store in St. Petersburg, I'll become filthy rich". This is what Aukusti Asko-Avonius said to his young marketing man at the beginning of the 1960s.

Before the war, Asko-Avonius had visited both superpowers, the USA and the Soviet Union, and their markets also intrigued this great promoter of mass production during the cold war.

In 1949, the US dollar was powerful, and it seemed likely that Asko's furniture could be profitably exported to the USA. In the spring of 1949, Asko founded its first foreign subsidiary, Asko Corporation, in the USA. However, its sales were disappointing and Asko Corporation lasted only a year.

At the same time, Asko-Avonius sought a way of exporting furniture to the Soviet Union. Having ideas of exporting to the East required a high degree of optimism – the Atlantic Ocean seemed a minor obstacle compared to the iron curtain. In 1949, Asko-Avonius obtained a translation of a Swedish memo written by a Swedish expert on the prospects for exporting furniture to the Soviet Union. The memo was titled "In paradise, there are no chairs". It was very critical of the Soviet system and held out little hope of profitable business. The analysis concluded that the standard of living in the Soviet Union was so low as to prevent its citizens from affording Western products for a long time – if ever. Instead of improving the standard of living, the Soviet Union wasted its resources on heavy industry and armaments.

Aukusti Asko-Avonius was not discouraged by this analysis – his instincts on the business opportunities were much more optimistic. After World War II, Finland had to pay massive reparations to the Soviet Union. The Soviet Union's attack on Finland in 1939 through 1940 was laid aside during the peace negotiations in 1945, and the Allied powers found Finland guilty of starting the second war against the Soviet Union in 1941 – 1944. These reparations were an exhausting financial burden impeding Finland's reconstruction. However, they generated business contacts in the Soviet Union. Reparations did not include furniture, although Asko-Avonius did carry his share of the burden by delivering parts manufactured in Upo's foundry.

In the mid-1950s, after nearly 40 years of persistent attempts to access the Russian furniture markets, Aukusti Asko-Avonius' efforts were rewarded. The first noteworthy deal was closed in 1956. Following two weeks of intensive bargaining, Exportles, a Soviet wood processing trading company, ordered 8,500 Asko kitchens. The duration of the negotiations was affected by the fact that Exportles was playing two Finnish companies against each other, according to the best capitalist practices.

It was soon evident that the results were worth the struggle. Once contacts and mutual trust had been established, further orders were easier to obtain – and at a much more profitable price. With Soviet exports, Asko's production capacity could finally be exploited to its full potential. Long mass production series were possible without surprises being generated by private consumers, whose preferences were influenced by unpredictable fashion fads.

However, trade with the Soviet Union was not entirely without its quirks, being based on barter. Finland exported industrial and consumer products and imported raw material such as oil, while exchange rates depended on current world market prices. When raw material prices were high, exports increased. When they were low, the Soviet Union could not obtain the agreed amounts. Furthermore, there was an inherent political risk in Soviet trade. In the late 1950s, the Soviet Union banned all trade in an attempt to


Asko GmbH's shop in Frankfurt in 1959. Finnish design on display: glass, ceramics, Tapiovaara's "Mademoiselle" chairs and Wirkkala's table and chair made of veneer. The high quality collection did not generate profitable business.


Rocking chairs ready to be shipped abroad.

Attractions in Munich's Asko shop included the rocking chair, Ilmari Tapiovaara's "Crinolette" chairs (on the left) and Aulis Leinonen's "Anjuska" lounge chair.

coerce the Finns to force the anti-soviet ministers of the Finnish government to resign.

In those days, Asko's production capacity was not fully utilised and a replacement for the Soviet trade was sought in the Western markets. Aukusti Asko-Avonius decided to place his bets on Germany. Germany had experienced economic growth that was known at the time as "wirtschaftswunder". It was generally believed – and Asko-Avonius shared this belief – that Germany's miraculous economic development would eventually make it the richest nation in the world. Better yet, Germans were interested in Finnish design, furniture among other things.

Finnish design had received plaudits all through the 1950s. In the Milan Design Fair, every fourth Grand Prix had been awarded to Finland. Tapio Wirkkala had designed tables laminated with fantasy plywood and chairs made of bent plywood for Asko. In February 1958, they drew interest which generated new orders in the International Furniture Fair in Cologne. Of course, Germany could not be conquered by fantasy plywood alone, but the prospects were very promising. In Finland, the post-war material shortages had eased in the mid-1950s and designers were able to experiment with new springs, textiles, advanced adhesives, bent plywood and veneer.

In addition to Wirkkala's tables, Asko also had other design products on offer. Simple, lightweight, breezy Nordic design became increasingly popular in Central Europe. All of the elements necessary for success were at hand. Now, all that remained was to put the pieces together.

Asko appreciated the fact that profitability and large volumes went hand in hand. Hence, a chain of retail shops was established in Germany. In December 1958, Asko opened its interior decoration department store in Düsseldorf. In the following year, Asko's neon lights lit up in Cologne, Frankfurt and Hamburg, and soon after also in Munich and West-Berlin.

Export opportunities to other countries opened up in the early 1960s as far as Japan. Asko had tied its resources and a fair share of investments into Germany. Hence, advances in other markets were conducted slowly. In 1963, Asko established a subsidiary, partnering with Ikea in Sweden. In 1965, Asko had floor shows in Brussels and Paris.

In Germany, no expense was spared, spacious stores being located in the bustling city centres. The business idea was to sell high quality design at a good price. Collections included Finnish industrial art. However, after the first year, it was evident that design would not attract sufficient interest. Profitable sales required other products as well.

Advertising was increased and collections expanded. With the accumulation of experience in international markets, Asko's designers were able to steer models in a direction that better appealed to international tastes. Local furniture and interior decor was included. This enabled the home studio concept appreciated by German clientele. In practice, the home studio concept entailed comprehensive interior design together with the customer.

The concept further assisted Asko GmbH in overcoming issues created by the collision between German personnel and the Finnish business culture, and selling Finnish products. Slowly, both sides became accustomed to each other's differences and product training began to bear fruit.

In June 1964, Erkki Kopra, Manager of Asko's furniture division, toured the shops in Germany. He took notes and wrote down what employees expected of the parent company: improved quality control, shorter delivery times and enhanced communication. Kopra was perhaps aware that it should expect as much, however, he was taken by surprise by the enthusiasm and dedication of the German personnel.

In its marketing efforts, Asko did its best to exploit the interest in Finnish design. In 1965, a Finnish speciality – the rocking chair – received a lot of media attention. Asko, of course, seized the opportunity. In August 1965, rocking competitions were displayed in the windows of Asko's shops in Hamburg, Düsseldorf, Cologne, Frankfurt and Munich. To claim the top places, you had to rock your way through at least a day and a half. The winner was Kurt Kuhlmay, a 25-year old set designer, who won the competition by rocking in Asko Düsseldorf's window display for 51 hours. Kuhlmay vowed that he was prepared to defend his record against any Finnish challenge.

Entrepreneurship underlying Asko and Upo

In the 1930s, the Austrian-American economist Joseph Schumpeter declared innovation central to entrepreneurship. He discovered that fluctuations in the economic cycle were not caused merely by changes in consumer needs, i.e. demand. According to Schumpeter, demand was a static element. Thus, the launch of new products/services must be caused by something other than sudden changes in demand. For Schumpeter, this phenomenon is due to innovations created by innovative entrepreneurs, visionaries willing to take a risk and leap into the unknown by launching completely new products.

Innovative entrepreneurship as described by Schumpeter was characteristic of both men, Aukusti Asko-Avonius and his son Arvi Tammivuori. Both participated in R&D and marketing, actively developed product distribution and organised the company operations. Above all, they have both been described as leaders ready to invest everything, or at least considerable amounts, in new ideas.

Sirpa Asko-Seljavaara, MP, remembered her father's, Aukusti Asko-Avonius', traits as follows: "He was a peculiar chap. To him, everything that was new held an immense attraction. Yes, yes, this is what we'll do, he'd say. He was one of those renaissance men who get excited about everything new."

Aukusti Asko-Avonius and Arvi Tammivuori on a hunting trip in the 1950s.

Arvi Tammivuori could be described in much the same words, especially regarding his enthusiasm for anything new. In Upo, which focused on the production of technical equipment, there was more room for innovations than in the furniture factory. Furthermore, Arvi Tammivuori expected innovations from other management members as well. According to Tammivuori, the most important characteristic of a manager was to spur innovation. Tammivuori explained to Upo's personnel why this was crucial: "Our first and foremost task is to spur new ideas, new products, new product lines. New ideas are precious. Companies with new ideas are successful and able to expand their operations. These are the companies building the new factories and acquiring the best machinery. These companies attract the best workers. They will be able to pay higher wages, thus contributing to the improved development of the nation's economy."

An idea becomes an innovation when it is put into practice. Hence, an innovator must think and act differently from others, even against the opinions of others. It requires a level of persistence – stubbornness even – which both Asko-Avonius and Arvi Tammivuori possessed. Once a new idea had been tossed and turned about and a final decision reached, it was not easily altered. Taking calculated risks attracted both father and son alike. This combination of risk taking and hard-headedness sometimes led to mistakes – even when they had been warned against them. Some of Aukusti Asko-Avonius' final investments could be blamed on his stubbornness, and Tammivuori also tended to hold onto ideas no one else in the management supported.

According to Joseph Schumpeter's theory, a company introducing innovative products to the markets would reap the best margins and prosper. Success would attract followers. As a new industry expands and the old industry it replaces withers away, the production structure is altered.

Until 1917, furniture production in Finland had been order-driven, with a single company providing the complete interior designs of its customers. Poorer families and families living in the country usually made the necessary furniture by hand themselves. Good workmanship was expensive and cheap production was low in quality. Aukusti Asko-Avonius realised that demand for mass produced furniture would be high, if sufficiently good furniture was available at a reasonable price. Asko-Avonius was one of the central characters developing Finland towards a new way of furniture manufacturing. And as Schumpeter's theory predicts, there were followers. When Asko-Avonius first established his factory, it was the only one in Lahti. In 1938, there were 26 furniture factories in Lahti and about 40% of total furniture production was manufactured there.

Despite the innovative nature of its Managing Director, Upo never launched completely new products or developed new production methods, apart from the electric mangle. Nevertheless,

Asko's factory complex in 1960.

Upo can be counted among innovative companies. It was the first to produce, market and distribute many of the products necessary in Finnish households and municipalities.

It is a commonly held belief that financial profit motivates risk taking. However, Joseph Schumpeter contradicted this as the fundamental motive for entrepreneurship and turned to psychology for more likely answers. According to Schumpeter, the innovators responsible for the industrialisation of the USA were driven by an obsessive need to prove themselves. Their common pursuit was to build their own empires. By the mid-1960s, Aukusti Asko-Avonius' "empire" employed about 6,000 people and had well over 10 hectares of floor space. At the time, these were impressive figures. He had fulfilled the American dream in Finland.

The inheritance of Asko-Avonius

Aukusti Asko-Avonius died in the autumn of 1965. At the beginning of 1966, the holding company Asko Yhtymä Oy was established to combine Asko and Upo under a single roof. The holding company presented Aukusti Asko-Avonius' heirs with a channel for control over their legitimate property and for income. In a sense, the holding company Asko Yhtymä represented Aukusti Asko-Avonius. In practice, he had been the chief executive officer of a multi-industrial corporation, although legally such a corporation had never been established. In the holding company, Asko Yhtymä Oy, the highest authority was given to the Supervisory Board. K. K. Kankaanranta, administrator of Asko-Avonius' estate, was nominated Chair. Kankaanranta was a proficient lawyer acting in the interests of Asko-Avonius' heirs. As a trusted man, Kankaanranta was soon participating in operations outside estate administration proper. Due to his extensive contacts, Kankaanranta was useful for business as well. His contacts included Asko's and Upo's principal investor, the Finnish Union Bank, Finland's major commercial bank.

The Finnish Union Bank gained increased control over decision-making. While alive, Asko-Avonius had been the sole owner and had raised credit against his personal property. The Bank had been satisfied by regular payments and had not required detailed information on the companies. As credit was now raised under the name of the company, it was discovered that Upo was very much in debt. Until the early 1960s, Upo had been able to make the necessary investments practically without additional funding from banks. However, building the Nastola Plant had been expensive. Financing costs were a burden on solvency, which was alarming.

The Finnish Union Bank demanded better financial planning and control from both companies. Worse than that, the Bank attempted to coerce Upo to participate in the industry restructuring

K. K. Kankaanranta (1919-2001) held several positions in the Asko Group during the period from 1966 to 1979.

it was advocating, since many Finnish household appliance manufacturers that were its customers were engaged in a price war. From the Bank's point of view, this was detrimental at a time when free trade was gaining a foothold and import restrictions were being lifted in Finland. The Finnish Union Bank thought it essential to centralise the Finnish production of household appliances in larger units.

However, Upo's Managing Director Arvi Tammivuori was not keen on giving up his power and wished to participate in the restructuring process as an independent actor, not ordered around by the Bank. The Finnish Union Bank continued to advocate restructuring while Tammivuori sought cooperation with the Swedish Electrolux.

Finding common ground was not easy because Upo was on a low while Electrolux was experiencing a peak. In May 1968, Electrolux's CEO Hans Werthén arrived to meet Arvi Tammivuori. He stated his intentions clearly: "I came to Finland with the intention of acquiring Upo." However, he rushed to alleviate the effect of his words by continuing that spending the previous evening with the prominent Swedish industrialist Marcus Wallenberg and the President of Finland Urho Kekkonen had made him reconsider his views. Marcus Wallenberg supported Kekkonen's view that it would be mutually beneficial not to base the economic integration of Finland and Sweden solely on Swedish companies acquiring their Finnish competitors. As a result, Werthén emphasised

Arvi Tammivuori in Japan in 1966. Upo sought – and found! – production innovations and partners in Japan.

that Electrolux did not intend to dictate the terms of cooperation, although its financial situation was superior to Upo's. Werthén further promised that Electrolux would engage in financing collaboration with Upo and the companies could own each others' shares. Negotiations resulted in modest rationalisation operations which were to precede a deeper partnership. However, the partnership never became very close due to contradicting interests.

Collaboration between Electrolux and Upo came to an abrupt end. Furthermore, the Finnish Union Bank felt that Upo was unwilling to participate in rational production arrangements. In 1971, these two factors, combined with Upo's unwillingness to adhere to the strict financial framework declared by the Bank, resulted in the Bank insisting on Arvi Tammivuori's resignation and appointing its own man in charge. Despite the tense situation a power struggle was unnecessary. Arvi Tammivuori fell seriously ill and died in the fall of 1972.

In Aukusti Asko-Avonius' days, the owner's wishes had been clear. The operations of Asko Group had been controlled by these wishes. After he had passed away, ownership steering was reduced and when Arvi Tammivuori died it vanished all together. Tammivuori had been the only heir to Asko-Avonius with sufficient business knowledge to question the actions of the employed management. Afterwards, the Supervisory Board, comprising owners of the Group, had little impact on the policies implemented by the executive management. Decision-making power was shifted to the employed management.

Esko Pajamies designed the "Bonanza" group in 1966. It was one of Asko's models that became successful in Germany and in Finland.

Eero Aarnio designed several chair classics to Asko and easy to assemble plastic furniture to Upo.

Asko and the Jet Set

"Imagine! We had 14 shops in Germany, and all in top locations. Asko was almost as well known as Siemens or Mercedes Benz. Everything seemed so grand," so Sirpa Asko-Seljavaara later described Asko GmbH's position in Germany in the 1970s.

According to market research conducted in 1968, nearly 30% of Germans and 60% of those living in cities which had an Asko shop were familiar with the company and connected it with high quality furniture. Asko's reputation helped Asko GmbH make a profit after its initial struggles. The turning point came soon after the 20% devaluation of the Finnish currency in 1967, which improved cost levels.

Manipulating currencies seldom results in a long-term competitive edge, but Asko's success in Germany was not merely a transient, devaluation-induced peak. In 1970, Asko's proportion of furniture exports from Finland to Germany was 93%. Asko had been able to compile an attractive export collection for Germany. Finnish design was a trend and experience gained from the German markets provided Asko with the opportunity to rise a couple of steps higher in the late 1960s. Until then, Asko had just been one importer of Nordic design furniture. Now, the company image acquired some glitter.

The Ball Chair designed by Eero Aarnio for Asko in 1966 was made of fibre glass. The media attention it gained surpassed any previous and future aspirations of the Finnish furniture industry. Ball Chairs appeared in James Bond films. Frank Sinatra had a Ball Chair, David Frost had a Ball Chair, Monaco's Princess Grace had a Ball Chair – every superstar of the era had a Ball Chair. Simon Spies, king of package tours, was photographed sitting in the Pastilli Chair designed by Aarnio for Asko. His colourful life outshone even Aarnio's bright dyes! Superstars of the era were charmed by other Asko designers as well, not only Aarnio. Ludvig Erhard, Chancellor of the Federal Republic of Germany, relaxed in Ilmari Lappalainen's "Matleena" Rocking Chair and in Japan, Princess

Michiko liked to rest on Lappalainen's "Pulkka" Lounge Chair.

Jet Set clientele brought glamour to Asko, which attracted solvent customers. Asko now had the perfect opportunity to reach these customers, although popularity based on a few top models was short-lived. Asko had experience of this from the mid-1960s when it had entered France and Belgium with a very thin collection. After the promising initial success, Latin-Asko had to be wound up because new top models could not be launched at a sufficiently brisk pace. Asko's German collection had more depth. In the late 1960s, Asko stopped using its own designers and focused on a Top20 collection for export purposes. Top models were sought from selected international freelancer designers. This system worked.

In the 1960s, Asko had tried to improve its distribution network through collaboration with some of the biggest retail chains, but the results had been unsatisfactory. In the 1970s, a better solution was discovered. Asko started partnering with smaller dealers whose modest floor space did not crowd out Asko's collection. Asko's reputation spread and sales figures increased, which attracted additional partner candidates. Asko had 14 shops and over 40 dealers in Germany.

Structural change in furniture markets was the only thing threatening to cloud Asko's bright prospects. Already, in the late 1960s, the furniture retail trade had started to escape from city centres to gigantic halls constructed on the outskirts of cities. In Germany, all of the Asko shops were located in the city centres. This forced Asko GmbH to mount a critical review of its situation. Iiro

Santalahti, CEO of Asko GmbH, calculated that Asko's competitive edge was and would continue to be design and high quality. Asko could not compete with out-of-town discount stores. Fortunately, this did not seem necessary. In 1969, average sales per square metre of floor space were DEM 3,500 in Asko, whereas the German average for all furniture sales was DEM 1,500. This strengthened the belief that Asko could well opt out of this development.

Asko's reputation in Germany was good and its concept was successful. Of course, there were also problems. Asko's 250 German employees were not pleased with lengthy delivery times, lack of finishing touches and miscommunication. The operative management addressed these issues to the best of its abilities. Despite the problems – or perhaps due to the corrective actions taken – Asko's furniture exports to Germany increased at an annual rate of tens of percents in the beginning of the 1970s.

Asko and Ikea

Sweden was the natural export partner for most Finnish furniture exporters, but not for Asko. For some reason, Finland's leading furniture company did not find a way of operating with ease in Sweden. Asko had established a subsidiary in Sweden in 1963 to import furniture and distribute merchandise to retail shops. Asko had also agreed to produce furniture for Ikea's mail order business. Sales were satisfactory as long as the price was right – which meant cheap. Cooperation with Ikea damaged some of Asko's relations with the other Swedish furniture businesses. But the collaboration was profitable, although Ikea was very apt at exploiting its subcontractors to the maximum. In the spring of 1966, Asko's representative reported from Älmhult that negotiations on the technical specifications and prices of beds produced for Ikea were such that the Managing Director of Asko's Swedish subsidiary had taken sick leave.

Asko survived the negotiations but, only a little later, Asko's cooperation with Ikea ended due to conflicting views on pricing. Ikea's Ivar Kamprad and Frans Meltovaara, who ran Asko's factories in Lahti, were both men of strong will, refusing to compromise.

After the breakdown, Asko applied the same concept in Sweden as in Germany. New retail shops were opened according to Asko's financial resources and increases in sales, both of which were limited. In Stockholm, an Asko shop was opened in 1966. During the following two years, shops were also opened in Uppsala and Västerås. The basic concept was successful; the top models that sold well in Germany sold well in Sweden as well. Asko gained a loyal clientele. Unfortunately, it was not very wide. Three shops were not enough to increase sales volumes sufficiently, but Asko did not have the resources to expand its chain.

Hit items from the 1970s: "Disco" furniture and "Pastilli" chairs.

Ikea was successful and, in 1968, announced its desire to enter the Finnish market. These facts further encouraged the view that Asko should learn from Ikea's example.

Asko designed an "Asko-Ikea", a retail shop of gargantuan proportions compared to Asko's existing shops. In addition to size, the Ikea concept would also be mimicked in self-service, the abandonment of cash discounts and interest-free instalment payments and charging handling and shipping expenses from the customer. If these had been implemented, costs could have been reduced to the same level as Ikea. The problem, however, was in production. Prices for furniture made in Asko's factories couldnot be reduced to Ikea's level; reducing production costs would have necessitated the use of subcontractors producing inferior quality. Although that was how Ikea operated, Asko was not ready for such a fundamental change. Thus, the plan was discarded.

Competition in domestic markets had to be reviewed. The first out-of-town superstores were attracting people with cars in Finland. Asko Centres were Asko's response to this trend. The first Asko Centre was built in 1969.

But despite the new Asko Centres, Asko was slowly losing its market share in Finland. However, the company management saw no reason to fight for each percent. Resources were limited and substantial growth was to be found only outside Finnish borders.

Shop in a shop

At the beginning of the 1970s, Asko's focus was on exports. Business was flourishing in Germany. Why not succeed in the UK? After all, the UK was a traditional export destination country of Finland and of Asko. The group had long term relationships in the UK and already exported much of its production to the UK. For years, Upo had supplied refrigeration equipment and household appliances to the UK. Further, Asko's plywood factory exported most of its production to the UK. In 1972, Asko decided to create a British clientele.

The day of 15 June 1972 was the high point of Asko's furniture export. A new Asko shop was inaugurated in Mannheim, Germany, and at the same time a large audience had gathered to witness the opening of Asko's furniture department in William Henderson & Sons in Liverpool. More than furniture, people were attracted by the LFC team which participated in the event. Asko's management was convinced that customers would discover the high quality furniture. A collaboration agreement with the House of Frazer included opening nine new Asko departments during 1972.

For Asko, the shop-in-shop concept was a short cut to new markets, cutting the tedious route of opening stores of its own and finding successful distribution channels by itself. Furthermore, Asko did not have the financial resources for such an enterprise.

Asko's "shop in shop" department in Rackham's department store in Birmingham.

House of Frazer had 80 department stores. With this collaboration, Asko was expecting to reach young, open-minded and sophisticated clientele with sufficient income to purchase expensive high quality furniture.

Unfortunately, before the last shop-in-a-shop was opened, the failure of the concept was already evident. The lightly coloured birch wood appealed to the German customer, but deviated too much from traditional British furniture materials.

The larger audience gave the furniture the cold shoulder and even the open-minded had to cut down on spending due to a downturn in the country's economy. Bernard Bosher, PR manager for Asko's product, blamed some of the results on Asko's and Finland's image.

Finnish design was well known in Britain, but according to Bosher Finland had an image problem. The little that was known about Finland was connected with coldness and proximity to the Soviet Union. Bosher encouraged Asko to campaign against these prejudices and to invest in Britain, but the idea of increased risk did not appeal to Asko's management. The economic situation was declining in Britain and exchange rates were unfavourable. Considering the prices and volumes, the shop-in-a-shop concept would never be profitable. The contract with the House of Frazer needed to be revoked as soon as possible. Asko's failure in the UK in 1972 was the final blow to any plans for expanding Asko's own distribution channels to new countries.

Competition intensifies in the 1970s

In the summer of 1973, Asko Group's Board of Directors had good news for the owners. Asko and Upo were both performing well despite setbacks in the UK and in Sweden, and increased competition in the domestic market. Production was running at full capacity. Aukusti Asko-Avonius had founded the growth of his companies on development, which had now reached its peak. Hundreds of thousands of Finns were moving from the country to the suburbs. Construction was booming as never before, buying power increasing at a record speed and employers competing for the best workers. To secure its 7,500 employees and improve their satisfaction, Asko Group built a mighty health care centre, invested in occupational safety, improved internal communication and built housing for its employees. These actions were approved, even by the investors. Credit was received without difficulty when the Group's gearing ratio improved from alarming to satisfactory – even good for Asko – due to capital increases.

Finland had joined the European Free Trade Association (EFTA) in 1961. In 1973, Finland made a free trade agreement with the EEC. These agreements strengthened Finland's economical integration with the West European countries. EFTA and EEC enhanced exports whereas competition on the domestic market was becoming increasingly tight. In the long run, the economic integration of

Western Europe accelerated the speed of structural change. Continent-wide developments progressed towards larger production units. However, this development took time and did not affect Asko Group's businesses until a few years later.

By the late 1970s, foreign competition was significant. In addition to fierce competition, the Asko Group was hit by two crises; the international oil crisis which was causing an economic recession in Europe and the crisis in company leadership.

Asko-Avonius' inheritance spent on losses

Many of the companies founded by pioneering entrepreneurs in the 20th century continued to grow under professional, employed management. In some cases, such as that of AGA AB, the Swedish multi-industry corporation, the development was quite the opposite. AGA AB was left drifting by Nobel prize-winner Gustav Dahlén's successors, who were professional leaders lacking Dahlén's intuition and skill to react swiftly to change. The development of the Asko Group after Aukusti Asko-Avonius' death is very similar to that of the AGA Group. The decline in the late 1970s can be partly explained by external factors, such as increased competi-

Upo's freezer line in Nastola.

tion and economic recession. However, some blame can also be bestowed on the management's diminished if not complete lack of innovativeness and capability for swift reactions.

Without Aukusti Asko-Avonius and Arvi Tammivuori, actively seeking new lines of production was no longer the development method of the Group. Now, the approach was conservative and ideas with verve were almost shunned.

The owners feared that the bank would enforce reorganisation. Hence, in the face of the oil crisis and the subsequent economic recession, they wanted to refrain from high risk investments. Avoiding risks became the Group's new strategy headed by K. K. Kankaanranta, administrator of Asko-Avonius' estate, who was appointed CEO in 1976. He was a skilled business lawyer and enjoyed the trust of the owners and the Finnish Union Bank. However, these strengths did not compensate for his defects. He lacked business management training and experience in profit responsibility and strategic leadership. Thus, he was clearly the wrong choice for managing a Group which would have required determined and fundamental improvements during difficult times. The group management did not focus on the best lines of business and business development was bestowed on lower organisational levels.

As for finances, all efforts were channelled into maintaining solvency at the expense of investments. Asko Group's investments plunged to a level that was insufficient for replacement investments and remained there for several years. Production equipment deteriorated. This development caused the production managers to rebel, but the Group management did not dare risk failure. Bets were placed mostly on furniture sales. Asko GmbH opened two new shops and increased its network of retail sellers in 1977. Although the shops were grand, business was not going well. Asko's own shops were generating losses and investments in expanded partnership networks did not generate the expected result. Sales volumes grew, but the decline of Asko GmbH that had started in mid-1970s could not be reversed by contracts with new dealers.

The Group's inflation-adjusted turnover took a downward turn in 1974. By 1979, Asko's furniture business lost one fifth of its turn-

Upo's chilled cabinet in a British grocery store.

over and Upo's metal business nearly one third. Without the positive development of Upo's plastic business, the decline would have been significantly steeper. Although the plastic pipes' proportion of the company's turnover increased and generated positive cash flow, the cash flow of all of the other business sectors was negative.

During the period from 1974 to 1978, the number of Asko Group employees decreased from 7,500 to 5,600. However, this was insufficient to improve turnover and profitability. Asko Group's fixed expenses were 50% higher than its competitors' and the Group was generating heavy losses. In the fiscal year 1978, Asko Group recorded a loss of FIM 100 million. This was over 10% of total turnover.

The principal investor takes over

”Asko-Upo is in a dire situation – – its assets are melting away at an alarming rate – – Operations can no longer be continued as before.”

In 1978, Asko Group's principal investor, the Finnish Union Bank, had conducted a comprehensive corporate analysis of the Group's current state and future prospects. The results were discouraging. Over 6% of turnover was spent on interest. With an operating margin lower than 5%, the Group was unable to cover its loan expenses without additional loans. The Bank's analysts estimated that heavy losses could not be avoided in the future and predicted that – unless radical changes were implemented – Asko would run out of funds in just a couple of years. Furniture production and sales were specified as the most acute problem areas. The inadequate collaboration between the two had resulted in Asko being unable to use its capacity to its full potential. The sales organisation had a life of its own and production never knew which items to manufacture, and when and how much. It was further recommended that the household appliances unit should focus on its most profitable products. In order to simplify its financial structure, the Bank's analysts suggested that Asko divest its minor businesses and as much of its property and real estate as possible.

At home, Asko's situation was gloomy; abroad it was downright hopeless, “ – – the international network of subsidiaries generates losses and many of the units are bankrupt.” According to the Bank, Upo's network of international subsidiaries had to be dismantled and Asko GmbH's operations given serious consideration. The Bank's analysts called for decisive action the Group had been unable to implement before, due to the fact that the Group management lacked realistic financial targets and the tools for measuring achievement. Asko's management was unable to distinguish between profitable and unprofitable operations.

The analysts further emphasised that swift actions would benefit all interest groups. Asko's owners were suspicious of the Bank and unwilling to accept the results of the analysis.

Asko's Management Quartet in mid-1980s, from left to right:
Jarmo Rytilahti, Pertti Lares, Niilo Pellonmaa and Jouko K. Leskinen.

The Bank concluded that Asko could not be turned around without external intervention. It offered to bring in a reliable private investor, but the owners rejected the idea. Thus, the only other alternative was for the investor to take control of the company. In order to improve the Group's balance, a convertible bond was issued in the fall of 1979. In practice, this meant that the family surrendered its decision-making power as the majority shareholder to the Bank. According to the terms, the Bank was entitled to convert the bonds into a 55% share of stock.

Asko was not the only family-owned company in Finland to be pulled under the control of commercial banks following poor results and financial travails in the 1970s. At the time, banks were suspected of industrial power politics and accused of intentional “piracy” in the media. Such opinions also received support among Asko's owner-family. There was also an alternative explanation for the phenomenon. Due to the tightly regulated money markets, commercial banks protected from interest competition were compelled to balance their protected operational environment by continuing to finance some of their most prominent customers – for employment purposes – many years after the related business motives had ceased to exist.

The terms of Asko's convertible bond further included a clause stating that the Group's reorganisation would be realised under the leadership of a professional manager nominated by the bank.

In the following years, Asko's business operations were developed according to the guidelines stated in the corporate analysis. Minor businesses were divested, resources focused on furniture and household appliances, and the unprofitable international operations dismantled. However, financial performance did not take a permanent positive turn. In late 1982 the bank had serious doubts about Asko's survival. Hence, the bank tightened its grip. In 1983, the Finnish Union Bank submitted Asko under its control. Niilo Pellonmaa, a member of the bank's Board and already the Chairman of Oy Uponor Ab's Board, was nominated Chair of the Group's Board of Directors.

Asko becomes a development company

The reorganisation cycle was initiated in 1983 by dividing the Group into six independent business units. The Board of Directors specified financial targets and provided the units with the necessary authority to invest in and develop their operations in order to achieve the set targets. The major investments concerned Uponor, although development opportunities were improved in other business units as well. Once again, promising innovations received support at management level. Compared to the level at the end of the 1970s, the investments by Asko Group increased ten-fold.

At the same time, a programme to enhance business operations was implemented. Production costs were reduced by increased automation and subcontracting. Previously, subcontracting had been employed only as a method to increase capacity. In the new scheme, subcontracting became part of production. The idea of self-steering factories was supported. Demands for cost reductions were particularly tight in production. As a result, some of the production was allocated to others. Changes were most prominent in appliance factories. Upo's vaunted electric motors factory was shut down as a result of calculations clearly showing accumulated savings if washing machine engines were bought from a large Spanish supplier.

The reorganisation and rationalisation process proved its effectiveness even during 1983. The margins of Asko's furniture business had been over 20% in the red, but rose to zero in 1983.

As a result of this positive turn, Asko's financial situation improved and the Group experienced organic growth and growth through acquisitions. For the duration of the late 1980s, Asko became a development company acquiring and then reorganising companies financed and partly owned by the Finnish Union Bank, in particular. The acquisition of Finlayson Oy, Finland's most prominent textile business, in 1986, doubled Asko's annual turnover. Finlayson had some PE pipe production which was divested to Asko's subsidiary, Uponor.

During the years from 1985 to 1989, Asko acquired a dozen new companies and new business sectors, such as textile, flooring and sports equipment. These acquisitions were made at a time when others were shifting their focus to a single industry. Once again, Asko was swimming against the tide. In 1989, the Group comprised 10 incorporated business units with 130 independent companies. Members of Asko's management were frequently asked what furniture, household appliances, plastic pipes, parquet floors, skis and pantyhose had in common. Niilo Pellonmaa, Chairman of the Board of Directives, usually replied that Asko no longer sought to enter new lines of business systematically but at the same time emphasised his confidence in the success of multi-industry corporations. Asko was like Volvo, which at the time profitably supplied cars and ketchup.

Although Asko was not following the trend, the conglomerate could not be described as a failure. During the period from 1983 to 1989, Asko had undergone a remarkable change. As a result of reorganisation, Uponor's growth, acquisitions and positive economies a company verging on bankruptcy and forced to divest its businesses and dismiss employees had ballooned into a profitable industrial giant with 13,000 employees. The furniture, flooring and foundry units were exceptionally successful, but the crown jewel was Uponor with its 40% share of the Group's total net sales, amounting to FIM 5.8 billion, and responsible for half of the Group's operating profit. Because of Uponor, Asko was still an international company, although its businesses abroad had been divested throughout the 1980s. In 1989, over half of the Group's total turnover was generated abroad and the Group employed 5,000 people outside Finland.

Attempted coup leads to the dismantling of Asko

The Finnish financial markets were deregulated during the 1980s. Currency loans were suddenly available for everyone and the opportunity was seized, since the interest rate in Finland was much higher than in the larger economies. Foreign currency flowed in, flooding the money markets and, in combination with the lifting of restrictions on foreign ownership, resulted in the late 1980s' "casino economy", comprising hectic takeovers and coups on the Helsinki exchange. The valuation factors of most Finnish stock were lower than those of the corresponding international companies. Investors saw this as a last chance to grab hold of undervalued stock before its value was corrected to its "proper" international level. Asko was listed on the Helsinki Exchange in 1987. Two years later it was the target of attempted hostile acquisitions, like many other Finnish companies.

During the 1980s, the Finnish Union Bank had been determined to extend the company's ownership. In 1989, Asko had nearly 3,000 shareholders. However, there were still some major shareholders, to whom Asko bore no strategic significance. There were also other factors attracting hostile acquisition. The company had been successfully reorganised, its separate business units were easily wrapped in packages for sale and it had a generous amount of liquid assets that could be used as surety for the temporary funds needed to acquire the majority of the shares. Furthermore, it was already known that a large number of Asko's shares would soon be available because Asko's biggest shareholder, the Finnish Union Bank, had to reduce its share on account of a law reducing the cap on bank ownership of corporate assets. At the end of 1989, it seemed that the majority of Asko's stock would be hijacked by professional takeover investors.

Between December 1989 and January 1990, Asko's executive management staged a counterattack, with Asko's subsidiary Uponor playing the leading role. Neste, the national oil company, owned 45% of Uponor's stock. In the prevailing situation, it was anxious to secure its ownership of the strategically important Uponor. Hence, Neste and Asko established a joint holding company to redeem the Finnish Union Bank's share of stock. At this time, Neste gave up its direct ownership of Uponor and subscribed for Asko's shares. As a result, Neste became the majority shareholder of the Asko Group and Asko the sole owner of Uponor, one of Asko's ten business units.

Neste's interest was, however, limited to Uponor. The national oil company had no interest in furniture, household appliances, foundry products, sports equipment or flooring. As a result of the change in ownership, the development company turned into a sales company. During the 1990s, Asko divested all of the businesses acquired during the 1980s and concentrated its resources on Uponor's plastic pipe production.

In addition to Uponor, only the flooring and household appliance businesses were left in 1999, plus property and real estate with an estimated value of MEUR 250. It had been evident for some time that, apart from Uponor, all other businesses would be divested. In 1999, Managing Director Jarmo Rytilahti, who had been in charge of divestments since 1991, publicly confirmed this development. Asko had become Uponor and, in the summer of 1999, the Boards of both companies announced the merger of Asko and Uponor from the end of the year.

Water central heating is a suitable solution for large facilities.

Uponor's access to international markets

The five periods in Uponor's history

With the night sky ablaze with fireworks and champagne corks popping, Asko became Uponor on the New Year's Eve 1999. As people welcomed the new millennium, what had gone before became history and, with it, the 81-year-old Asko. Or the name at least, since in fact it was the subsidiary of Asko, Oy Uponor Ab, that was discontinued, the parent organisation assuming the name Uponor Corporation. Thus, the former plastic pipe company became a multi-industry corporation inheriting business operations, property and an exchange listing from Asko. Everything else came from Oy Uponor Ab, which had for the past 20 years been developed with an eye to becoming a leading international player in plastic pipes. The adopted strategy was successful as, on the eve of the fusion, in 1999, Uponor was the world's largest plastic pipe manufacturer. And, although the British Glynwed soon took over this mantle, this did nothing to dim Uponor's glory.

The fifth phase in Uponor's history began in 2000. The first had begun when Upo's plant in Nastola was established in the mid-1960s, continuing until 1982 when Oy Uponor Ab was established. During the following 5-year period, the company stabilised its position as the leading plastic pipe manufacturer in the Nordic countries and took its first steps towards Europe.

The third phase was a period of intensive growth dating from 1988 until the beginning of the 1990s – the years of deep economic recession in Finland. During this third phase, Uponor developed into a global company with operations in three main market areas: the Nordic countries, German-speaking Europe and North America. It also acquired a new, rapidly growing industrial branch: hot water pipes for heating and tap water applications in buildings. At this point, Uponor's business operations were divided in two: housing solutions, i.e. pipes used in buildings and in their immediate surroundings, and infrastructure solutions, such as water, wastewater and gas pipes. During the latter half of the 1990s, Uponor's growth was partly based on the divestments of Asko's businesses. These sales also outlined the developmental direction of the Uponor Corporation, as the plastic pipe markets matured and Uponor's regional expansion came to a halt.

The 2000s has seen the fifth phase of Uponor's history. Acquisitions have been put on hold while operations have been focused on housing solutions. Following the days of rapid growth, this dispersed company has been persistently integrated into an efficient, coherent, profitable corporation. But to start from the beginning: in the beginning there was Upo-Putki and Plast-Kalle.

Upo-Putki and Plast-Kalle

In 1964, Upo's Managing Director, Arvi Tammivuori, persuaded Karl-Jan Govenius, M. Sc. (Eng.), to run the new plastic plant in Nastola, a small town in Southern Finland. At the time, Govenius was an experienced and enthusiastic plastics engineer in his 50s, who became known as "Plast-Kalle" – a nickname honouring his knowledge of plastics and his contagious enthusiasm. Govenius, an entrepreneur at heart, shared the way of thinking of Arvi Tammivuori and Aukusti Asko-Avonius, the founder of Upo: to probe new possibilities continuously, never stay still, always seek innovations.

The 1960s was a pioneering period for plastic. Its uses had not yet been mapped. Plastic could be moulded into practically anything, but it was the customers who had the last say in the issue. It was characteristic of Upo that nearly everything the machines could

Plast-Kalle and Tammivuori.

do was attempted at the Nastola plant. The Nastola plant comprised four units – injection moulding, film, extruder and fibre glass – which produced pipes and hoses, films, bottle crates, containers, milk pitchers, synthetic paper, safety helmets, rubbish bins, cartons, and during the 1970s also furniture. Many – or most – of the sales and profitability figures generously drafted by Plast-Kalle proved beyond optimistic, and production based on sheer enthusiasm was quickly discontinued. On the other hand, the wide product range ensured Upo Plastics' involvement wherever the markets would eventually begin to evolve. And there were some bull's-eyes! For a few years, Upo's plastic bags for milk were a hit product and its bottle crates were in use for decades.

However, the most reliable source of income was plastic pipes. In Nastola, bets were placed on PVC. It was cheap and easy to handle and had good resistance to shock, acids and alkaline environments. Thus, PVC was the ideal material for fresh water and wastewater pipes in buildings and in underground applications. Pressure pipes and indoor plumbing pipes were Uponor's first PVC products. The range was soon complemented with sewer pipes for underground applications.

By the mid-1970s, the international oil crisis, an economic recession in Finland and changes in the parent company, Asko, forced Uponor to reconsider its policy. It was no longer possible to continue on all fronts, even in Nastola. Investments in plastic furniture were the last reminder of the years of optimistic growth pre-

Fittings line in Nastola.

Heimo Eloranta's vision guided Uponor from the remote Finland to the global markets. He created a dynamic atmosphere which lingered on in the company long after his days as Managing Director had passed.

ceding the oil crisis. Plastic furniture never took wing, and hence the Nastola plant shifted its focus to plastic pipes – the most profitable product. When Karl-Jan Govenius retired in 1977, plastic pipes and the related parts comprised nearly 80% of total production. After film production was sold during the reorganisation of Asko Corporation in 1980, the Nastola Plant became Upo-Putki, which concentrated solely on plastic pipes.

Upo Dan and Kondom

In the 1970s, Upo-Putki was the most successful business unit of the Asko Corporation. By the end of the decade, its share of the domestic PVC pipe market was such that growth had to be sought abroad.

Companies tend to start by expanding to neighbouring countries, and Upo-Putki was no exception. It had already exported fittings to the Scandinavian countries and the UK, but any serious growth in the international markets required production abroad. This was already evident in Plast-Kalle's days. In 1977, with his successor Eero Heikinheimo, Karl-Jan Govenius discussed an idea concerning a joint fittings factory with Upo-Putki and the Danish companies Daoplast and S. D. Plastindustri. Although Daoplast later decided to withdraw from the project, the joint venture by Upo-Putki and S. D. Plastindustri, Upo Dan A/S, began fittings production in Hadsund, Denmark in 1979.

Unfortunately, Upo Dan did not succeed financially. It faced the same fundamental problem as all other Nordic plastic pipe manufacturers: there were no markets for increased production. Although the percentage of plastic pipes increased at the expense of metal pipes, the sharp decline in the construction business following the energy crisis affected demand for plastic pipes too. This change was quick. At the beginning of the 1970s, growth potential had seemed unlimited and only ten years later Nordic plastic pipe manufacturers were faced with considerable overproduction. Neither was there any light at the end of the tunnel; reduced demand stretched as far as predictions could see.

To add insult to injury, Nordic plastic pipe manufacturers gloomily monitored the moves of their European competitors. The Dutch company Wavin was particularly active in seeking growth in the Nordic countries. It already had a large factory in Denmark and had started production in Sweden as well. The Nordic pipe manufacturers could have come to terms with restrictions on production, but outsiders penetrating the markets made the situation unpredictable.

The Nordic raw material suppliers, Neste in Finland, Norsk-Hydro in Norway and Kema-Nord in Sweden, closely followed the manoeuvres of Wavin, of which Shell owned 50%. For the raw material suppliers, pipe companies were important as they consumed one third of total raw material production.

However, most plastic pipe manufacturers were small companies. Dispersed production did not fit well with structural changes in the construction industry, which had led to centralised wholesales. The big wholesalers needed big suppliers. It was evident that the Nordic pipe market was on the brink of fundamental change.

Once the situation had been analysed, it was time to act. Heimo Eloranta, the factory manager of the Nastola Plant, drafted an ambitious strategy whereby Upo-Putki would be an actor – not a target – in the inevitable structural change and emerge all the stronger. Upo-Putki pursued the leading position in the pipe markets. Later, Eloranta described the strategy in a Swedish publication as "a pure example of a KONDOM strategy", an abbreviation of the words "focus" ("KONcentrera" in Swedish) and "dominate" ("DOMinera" in Swedish).

Strong faith in Upo-Putki's advanced technology and its superior performance compared to the Scandinavian competition further boosted faith in the new Kondom strategy. In Finland, Upo-Putki had unrivalled control over the PVC pipe markets – other prominent Finnish manufacturers used polyethylene. No-one crossed this line. Thus, the competitive situation in Finland was considerably less severe than in the other Nordic countries. The balanced situation and profitable production enabled Upo-Putki's management to focus its time and energy on monitoring the international scene and to hone a bold strategy.

Tanks complemented Uponor's pipe systems and strengthened its position in its native Nordic markets.

Uponyl and Uponor

Upo Dan had shown that it was unwise to establish new facilities in areas suffering from surplus production. At the beginning of the 1980s, Heimo Eloranta and his superior, the head of Upo Plastics, Pekka Laine, began investigating the possibility of acquiring existing Swedish production. The first target was Davinyl AB, the fourth largest manufacturer in the Nordic countries, approximately half the size of the third-placed Upo-Putki. Davinyl was the ideal choice, but its owners did not warm to Upo-Putki's overtures.

The next window of opportunity opened in the spring of 1981. The Swedish KF Industri AB decided to focus on consumer products and sell its plastic pipes division Lubonyl, due to gloomy future prospects. Production in Lubonyl was very similar to that of Upo-Putki, and in this respect it was an ideal option. However, the problem was Lubonyl's size. Fristad facility's PVC pipe capacity was 38,000 tons, roughly equalling total demand in Sweden, and over 50% higher than the capacity of the Nastola Plant. Lubonyl employed 500 workers, whereas Upo-Putki had only 300 employees.

Although Upo-Putki was clearly the more profitable, it made little difference as in 1981 the parent company Asko had run out of liquidity. At first, Lubonyl was not considered for acquisition. Instead, until the fall of 1981, negotiations were held on the possible fusion of Upo-Putki and Lubonyl.

The atmosphere of the negotiations was positive as the main negotiators noticed that their views were as close to one another as the production of the factories. Heimo Eloranta and Sture Erixon, the Managing Director of Lubonyl, became close during the negotiation process and both agreed that this was an opportunity that should not be allowed to pass them by.

Both Eloranta and Erixon appreciated the advantages of a fusion. Improved production and sales efficiency would create considerable savings, although the greatest profits would be generated in the long run. The size of Uponyl would be superior to its Nordic competitors, and it could control and dominate its native markets in addition to possessing R&D resources enabling international success. To become as powerful as possible, Eloranta and Erixon contemplated inviting in a third partner – the Norwegian Mabo owned by Martin Botten. Mabo controlled the Norwegian pipe markets and also had production facilities in Finland and Sweden.

An alliance between the largest companies in the three Nordic countries could have easily restructured the markets in one go, reversing overproduction, restricting price competition and raising the threshold into the Nordic markets for Wavin and other "outsiders".

During the summer and early fall of 1981, the negotiations had advanced thus far. Mabo did not show any interest in the joint venture, but the contract for the Finnish-Swedish Uponyl only remained to be written and signed. Until suddenly, in October 1981, the situation changed. A competitor challenged the well-planned fusion: the largest Finnish company, the government-owned oil company Neste, announced its interest in Lubonyl. Neste was serious competition, and Asko did not have the means to compete with Neste over Lubonyl. However, Neste was not interested in taking over Lubonyl, even as a majority owner. This was good news for Asko. In the eyes of Neste's other customers, a subsidiary in plastic pipes would not have looked good. Furthermore, Neste was not interested in pipe production, but only in a means of securing demand for plastic raw material in the short term and being able to offer products at a competitive price in the longer run.

Hence, the carefully planned joint venture changed its name from Uponyl to Uponor, a plastic pipe company established by Asko and Neste. Uponor acquired Lubonyl from KF Industries and Asko sold Upo-Putki to the new company. Asko received two thirds of Uponor and Neste the remaining third. Neste benefited from the deal through a 20,000 ton raw material contract. Uponor would buy 75% of its raw material from Neste, half for the valid world market price and half on a first refusal basis. In the summer of 1982, it was evident that Lubonyl could not honour its part of the contract. Neste had aggressively penetrated the Swedish plastic markets, which outraged the local competition. To calm the situation, the Swedish government, which had approved the acquisition of Lubonyl, insisted that Lubonyl enter into a long term supplier contract with Kema Nord, the company's previous supplier.

Swedish becomes the official language

Oy Uponor Ab was established in February 1982. In the shareholder agreement, Asko and Neste stated their objective as good, responsible ownership: the owners promised not to coerce Uponor to act against its interests. In return, Uponor was expected to grow and manage without support from its owners. Instead of dividends, it was agreed that Uponor would pay royalties for the immaterial assets, such as brands, released for use by Asko-Upo and Neste.

From Asko, Uponor received the plastics competence of the Nastola Plant. According to Upo-Putki, this was crucial to success in the initial stages. Neste's international contacts and knowledge of the global scene contributed greatly to the smooth start-up of Uponor's businesses. In addition to existing contacts, the name of the well-known oil company lent credibility to the fairly unknown new player among investors as well as customers. Antti Pohjonen, who ran the Nastola plastics factory in the 1980s, confessed that the name of the minority shareholder was used at every possible turn. ”We had absolutely no scruples about playing the Neste card. When we went abroad, we'd say that Neste was one of our major owners and not mention Asko at all.”

In hindsight, Lubonyl integrated well into the company both financially and production wise. The personnel, however, did not integrate quite as smoothly. One of the major reasons for this was perhaps that acquisitions by Finnish companies were uncommon at the time. Hence, Heimo Eloranta and the other Finnish personnel faced suspicions well beyond the customary resistance in 1982 Fristad.

The Swedish employees of Uponor were concerned about losing their jobs and horrified at the prospect of a new foreign majority shareholder that was in no better shape than the former Swedish owner. And who could blame them? It was further anticipated that Uponor's Finnish management was much more likely to cut production in the Swedish Fristad factory than in Finland.

The Swedish media did nothing to allay these fears. In the 1970s, Finnish investments in the Swedish textile industry had led to the decline of the industry in Sweden, where production costs were high. Textile production had been transferred to Finland, where production costs were lower. Now the headlines predicted that Uponor ownership signalled Fristad's downfall. Had the media taken a closer look at the issue, it would have soon noticed that plastic pipes must be manufactured near customers and transferring voluminous production to Finland would have been irrational on Uponor's part. Instead, the Swedish owners of Lubonyl were accused of being unpatriotic and letting down their employees.

Trade unions representing the Fristad employees published a list of demands and preferences, most of which Uponor could meet as standard procedure. In addition to recognising the employees' demands, Uponor did its best to calm the employees' fears. Allocating main R&D responsibility to Fristad reassured the employees.

In quality and R&D terms, Nastola and Fristad were even, but the fact remained that the majority of Uponor's personnel existed, and turnover was created, outside Finnish borders. Hence, it was only natural to change the corporate language. Changing the language to Swedish instead of English undoubtedly facilitated the integration of the Swedish employees.

For Uponor, the Lubonyl acquisition was a complete success. After the initial struggle, the Swedish-Finnish cooperation progressed smoothly and most of the synergy gains were realised. Despite considerable initial investments, Uponor's profit performance did not suffer greatly. In 1982, the company recorded a minor loss, but in the following year both Nastola and the Swedish subsidiary, Uponor AB, witnessed greatly improved profit performance. This positive turn was largely the result of the recovery of the construction sector following the recession caused by the second oil crisis in the late 1970s.

To Europe!

Uponor's growth strategy stated two objectives. The first was to secure and strengthen Uponor's position in the Nordic markets, the second to gain a foothold in Europe. Since 1983, Uponor had implemented the strategy originally authored by Managing Director Heimo Eloranta, following the guidelines set by Niilo Pellonmaa, the Board Chair, and Jouko K. Leskinen, the Vice-Chair representing Neste. Since there was a consensus on the objectives, only methods were discussed. The size of corporate management was deliberately kept moderate and responsibilities, risks and authority were distributed to the subsidiaries as much as possible. However, the first priority was growth. Although not publicly announced, the aim was to place Uponor among the three leading plastic pipe manufacturers of the world.

Cooling pipes installed into an indoors ice skating stadium in Helsinki.

The success with Lubonyl paved the way for further acquisitions in accordance with the growth strategy. In Denmark, Uponor strengthened its market position as early as 1982, through the acquisition of its previous negotiation partners S. D. Plastindustri and Daoplast. This placed Uponor right on the tail of Wavin in the competition for market leadership in Denmark.

In the summer of 1983, Uponor announced two foreign acquisitions. The first was Wessel Industries, an Irish PVC and PE pipe company. It employed 70 workers and its annual production capacity was 4,000 tons. These rather moderate figures raised Uponor to second place among Irish plastic pipe manufacturers, with a 15% share of the markets. The other acquisition was a Nordic company. In the spring of 1983, Uponor agreed to acquire the Norwegian Haplast A/S, although the actual acquisition did not take place until the summer of 1984.

According to Deputy Managing Director Carl-Erik Kortman, who wrote the Haplast memo, it was necessary to gain a strong foothold in Norway in a single attempt. Otherwise, Uponor would not succeed in the markets dominated by Mabo. Haplast was very promising since it had already established its position in PE pipes for infrastructure applications. Furthermore, Haplast offered Uponor the possibility of access to the Norwegian gas pipe markets. According to the Finnish interpretation, accessing gas pipe markets was the underlying reason for the accompanying, thoroughgoing governmental investigation – the Norwegian authorities were careful not to rely heavily on an outside producer in their strategically important pipe production. Permission was granted, but Uponor never succeeded in gaining a stronghold in the Norwegian pipe markets through Haplast. Apart from Norway, Uponor's original strategy to gain leadership in the infrastructure pipe markets in all Scandinavian countries was successful.

In 1984, acquisitions in Germany and the UK provided access to broad European plastic pipe markets. The initial plan was to build a plant in the UK. However, as it became clear to the management that securing any notable amount of market share with an unknown company would be extremely difficult to achieve, these plans were buried. Instead, efforts were channelled into finding a suitable company for acquisition. Extrudex Products Ltd held a fourth of the UK's pressure pipe markets, and with its acquisition Uponor received 91 new employees. Its share in wastewater pipe markets (both building and underground pipes) was minor but promising, as Upo-Putki had been exporting fittings for sewer pipes to the UK since the beginning of the 1970s. Now fittings from the Nastola Plant could be included in Extrudex's product portfolio.

The product portfolio of Anger GmbH also included pressure and sewer pipes. Anger GmbH was acquired from Thyssen AG in the summer of 1984. Anger had roughly 120 employees and manufactured every fourth pressure pipe and every tenth underground wastewater pipe sold in Germany. The German pipe market was dispersed. Anger's market share made it the second largest infrastructure pipe manufacturer in Germany.

Uponor's star shines brightly

Uponor's acquisitions abroad attracted the attention of the Finnish media. With its FIM 600 million turnover in 1984, Uponor hardly made the big league, but considering its humble roots the company had made some bold moves. In just a couple of years, Uponor had increased its size five-fold and evolved into an internation-

Uponor A/S's 20-year anniversary celebrations in Denmark in June 2002.

al corporation. It had production facilities in seven countries and 80% of its 1,500 employees were located abroad.

Progress of such enormous dimensions was something quite new. Finland's leading national paper, Helsingin Sanomat, tried to explain Uponor's growth in terms of its big league supporters. "Competitors have followed Uponor's ascent in silent dismay. Uponor's minority shareholder is Neste, whose position and financial support have no doubt contributed to Uponor's sometimes precocious conduct."

The claim was refuted in Uponor, especially concerning financial support. Neste's FIM 20 million share capital covered only 10% of the acquisition of Nastola and Fristad. Thus, Neste's financial support could not be accredited with Uponor's success. Rather, Uponor's management felt the owners placed an unnecessary burden on profitability as, during the financially demanding initial years, Asko and Neste received royalties which constituted considerable additional income to Asko, in particular, which was trying to recover from serious financial problems in the beginning of the 1980s.

No financial support from Neste was hidden in the raw material prices either, although it was felt in Uponor that in some instances the case had been quite the opposite. The executive management would have gladly called for tenders covering the whole Group's plastic raw material needs, but now most were supplied by Neste without a single invitation to tender being sent.

In an interview with Helsingin Sanomat, the principal ideologist behind the growth strategy, Mr. Heimo Eloranta, gave assurances that Uponor was by no means remote controlled by Neste. According to Mr. Eloranta, Uponor closely followed its own, premeditated strategy, and each acquisition was reviewed from multiple perspectives. "Each of the companies we have acquired has possessed something unique involving plastic pipes, or at the least a very promising perspective for the development of something new."

According to Eloranta, the other viewpoint was purely financial; subsidiaries were expected to manage without financial support from the parent organisation. For the Swedish and Danish subsidiaries, this had been the case from the beginning. To spread the risks and responsibilities more evenly, the subsidiary established in Ireland was a subsidiary of the Swedish Uponor AB, and Uponor Anger in Germany the subsidiary of the Danish Uponor A/S. During the initial stages, Uponor A/S was largely responsible for financing the whole Group.

In the summer of 1984, Mr. Eloranta told an interviewer surprised at the relatively few people heading the Group that reinforcements were planned for the central management team in the near future, which at the time comprised three managers and two secretaries. However, there was no intention of implementing any considerable expansion in the management team. With his mentor Karl-Jan Govenius, Heimo Eloranta shared a very critical attitude towards bureaucratic structures and administrative expenses. As a rule of thumb, the expenses of the administration were not to exceed 1% of the Group's turnover. Although Uponor was gaining ground globally, it still intended to maintain a flexible, light central management team in the future, and – partly therefore – to rely on the local expertise of its international subsidiaries.

The Uponor acquisitions in 1983 and 1984 fully met the first criteria mentioned by Eloranta. Namely, they complemented the Group by bringing in new products and new directions for production. However, fulfilling the second criteria on financial independence was not so well met, and for a while it seemed this might never happen.

The Moment of Truth

Although attempts were made to discover all the related risks, due to limited resources and tight schedules, Uponor advanced in its 1983 and 1984 acquisitions having performed considerably less groundwork than in Sweden and Denmark.

In Ireland, the UK, Norway and Germany the strategy was more along the lines of taking the first opportunity that appeared to offer sufficiently promising production and financial possibilities, and a satisfactory level of general investment management. The second part of Eloranta's Kondom strategy, dominance, could not be achieved

Heikki Mairinoja succeeded Heimo Eloranta as Managing Director of Uponor.

The objective of Uponor's R&D is to provide systems easy to transport and install. If necessary, septic tanks can be transported to the site by car.

in the new market areas, but it was believed that sufficient control over the new pipe markets and subsidiary was a reasonable objective. Technology had been successfully transferred from Nastola to Fristad and vice versa; why should it not succeed elsewhere? Especially since the acquisitions were much smaller than Lubonyl.

However, things did not proceed happily and the risks were realised. All of the new subsidiaries required reorganising. The situation looked especially bad in 1985, when Uponor faced challenges in every new country at the same time. When financial trends began to decline in Sweden as well, the reassuring figures in Finland and Denmark were not sufficient to cover the losses created elsewhere. The group's financial statement was negative. As such, the loss levels were not alarming. However, the financial trend and number of problematic subsidiaries were a greater concern.

Germany was worst. Uponor Anger had been regarded as an opportunity to this largest infrastructure pipe market of the Baltic Sea region. It was known from the start that reorganisation was necessary and the margin from pipe sales needed to be improved. However, what was not known beforehand was that Uponor was viewed as an unwelcome intruder in the German public utilities pipe markets and that the German companies had united against it. Uponor Anger's success in bidding was incredibly poor. To win, it had to sell cheap. By the end of 1985, reports from Germany showed that during Uponor's one-year reign, Anger's turnover had decreased by 20% and its profitability had collapsed completely.

Not all of the problems could be explained by external issues. In Germany, Uponor's operational strategy, by which subsidiaries were granted considerable independence, showed its downside. Anger's local management was not in agreement with the Group's Executive Management. PE production was not initiated and the factory in Marl did not concentrate exclusively on infrastructure applications, as explicitly instructed by the Group headquarters. A crucial error was also made in submitting to the condition that Anger would continue to buy its fittings from the previous owner, Thyssen.

The financial state of Anger was such that the company should have been put into liquidation in 1985. However, this was not done because, in addition to admitting failure, Uponor would also have had to record losses of millions for a company it had only owned for a year. Thus, instead, it was decided that Anger was to be revived.

This was a tough job. In the following years, restructuring programmes were launched one after another, and managers came and went at an equal pace, without achieving a turning point. In 1987, Uponor's Director of Business Development, Jukka Rausti, made an effort to understand Anger's problems fully, and concluded that the biggest problem was the competitive situation. Margins continued to be unacceptably low and added value in production required new products. Upon Rausti's initiative, the manufacture of Uponor's successful innovations, the Ultra Rib underground sewer pipes and rotation moulded manholes, was begun in Marl.

Persistence was finally rewarded. Investing in more demanding production improved Anger's margins. Furthermore, the operational environment improved with Germany's reunification in 1990. New markets opened up for Uponor Anger. In the East, plastic pipe markets were not divided up as they were in the West. Larger growth potential was also available due to the fact that the Western contractors preferred the traditional brick sewer pipes, whereas in the East contractors were more open to new ideas. In the East, Uponor's manholes became a hit product. As a result of increased production efficiency and the recovery of the construction sector in the reunified Germany, Anger's performance was finally profitable in 1990.

Hot water – the source of growth

Between the years 1987 and 1988, Uponor took a huge leap forward which proved essential to the company's success in the forthcoming decade. It acquired two of the leading PEX pipe manufacturers, the German Hewing GmbH and the Swedish Wirsbo Bruks AB.

PEX pipes are small in diameter and mainly used in radiant underfloor heating, plumbing and heating applications. Light, flexible and easy to install, PEX pipes are resistant to wear and tear, chemicals and high or low temperatures. The secret of these characteris-

Started as an iron works community, the Wirsbo industrial complex has been located on the shores of Lake Virsbo for nearly four centuries.

tics is cross linking, the reorganisation of hydrogen atoms. There are three different methods for producing cross-linked polyethylene (PEX). The first is the peroxide method where polyethylene is heated together with peroxide (PEX-a), the second is a chemical method (PEX-b) and the third is deploying electron beam processing (PEX-c). The end results differ less than the production process. However, PEX-b is not quite as resistant as PEX-a (manufactured by Wirsbo) and PEX-c (manufactured by Hewing).

Compared to traditional plastic pipe production, PEX pipe manufacturing was more demanding. Developing the production methods took years of research. Towards the end of the 1980s, high-quality PEX pipes could be produced, although demand was rather moderate. As yet, PEX was only a promising prospect.

It was no coincidence that Uponor became interested in PEX pipes. A new project was initiated in the mid-1980s to study whether investing in the new small-sized hot water pipes would be profitable. PEX production was tested in Sweden. In Finland, experiments with polybuthylene – another polymer resistant to hot water – were conducted.

However, towards the project's end it was concluded that, for Uponor, PEX pipes had little to offer. The production of larger pipes was calculated in tons whereas tons were grossly unsuited to the small, light-weight PEX pipes tentatively measured in metres. This did not convince the men in production, and the fact that PEX pipes were sold in different colours according to customer preferences did nothing to improve the product's credibility.

A more serious concern, however, was that PEX pipes were used in residential hot water applications and there was no general expectation that the European building and construction markets would expand in the near future. Thus, attempts at rapidly increasing sales of radiant underfloor heating systems were considered futile. As for other possible applications, such as water pipes and hot water heating systems, the superior position of copper pipes seemed impossible to surpass.

Heikki Mairinoja, Uponor's Deputy Managing Director at the time, later recalled that the experiments with PEX pipes showed no indication of their future potential. Like other large companies, Uponor was prepared to let its smaller competitors handle the small pipes. According to Mairinoja, the fact that the idea of PEX production was never completely abandoned can be attributed to the disciplined strategic planning and persistence of Uponor's Director of Business Development, Jukka Rausti. Growth was Uponor's strategic objective, and as new growth areas were probed hot water pipes kept resurfacing. Rausti commissioned market research which concluded that the suspicions installers had entertained against plastic pipes were fading and that plastic pipes would begin to replace metal hot water pipes at an accelerating speed. It was estimated that PEX markets would increase by 50% in five years. A further insight inspired by the research results was that the growth in hot water pipes should be exploited to its full potential, because very

Thomas Engel (third on the left) invented PEX-a. Allan Hansson (on the left), Reinhold Scheuchl and Bengt Lagercrantz commercialised the product. This picture was taken in 1990 when 400,000 km of Wirsbo's PEX pipe had been sold. The amount corresponds to the length needed to go around the Earth four times.

Hewing's PEX-c production line in Ochtrup, Germany.

little if any growth could be expected in other plastic pipe applications. If Uponor did not take action immediately, it was in danger of being left behind.

Now that the full potential of PEX had been discovered, an exceptionally opportune moment presented itself in the autumn of 1987. The owners of the world's second largest PEX manufacturer, the German Hewing GmbH, had decided to pull out. At the same time, the world's largest PEX manufacturer, the Swedish Wirsbo AB, was for sale because plastic pipe production was not among the core businesses of its owner, the Finnish steel and copper corporation Outokumpu Oyj.

Uponor's management group was facing a tough decision; should it invest in Hewing or Wirsbo or both? The significance of the resulting market share was understood and the idea of acquiring both companies was further supported by their complementary product portfolios. Hewing and Wirsbo were both innovative, with excellent product portfolios, and had well-functioning distribution channels in Germany, the most important PEX pipe market. However, the estimated risk in acquiring both companies was high and the executive management concluded that it must choose between them.

The final decision was in favour of Hewing. Originally, Outokumpu had acquired Wirsbo on account of its copper pipe production. Outokumpu's next step was to divest all businesses not belonging to its core areas. Thus, the acquisition of Wirsbo would also include the forge and steel pipe production. These were unfamiliar

In 1990, Uponor's PEX pipe factory started its operation in Apple Valley, Minnesota. This was Uponor's first green field investment. The factory has been expanded at several occasions. This photo was taken in 2006.

territory to Uponor. Hewing was smaller, but then so was the risk.

This was a sound plan. However, it was not accepted by the Board of Directors. Uponor's Board of Directors saw that there was greater risk involved in not seizing the opportunity to acquire the market leader. Other prominent plastic pipe companies had not as yet discovered the potential of PEX, but should Wirsbo be left to linger, interest was bound to arise. Niilo Pellonmaa, Chairman of the Board of Directors, and Vice Chair Jouko K. Leskinen announced that they would not consent to any investment unless it included both companies.

The Board got its way and financing was arranged. Uponor acquired Hewing first and Wirsbo soon afterwards, for a sum total

of approximately FIM 300 million .

Hewing had been established in 1974 whereas Wirsbo had existed for centuries. Uponor gave assurances that it fully appreciated Wirsbo's importance to the community and promised to develop the company. This promise was partly fulfilled by others, since Uponor sold Wirsbo's steel pipe production to the Finnish Rautaruukki Corporation and handed the forge over to the parent company, Asko.

Within Wirsbo, the suspicion and mistrust Uponor had faced six years earlier in Fristad was not repeated. According to Managing Director Åke Forssell, Finnish ownership was seen as a positive development. It was generally known that Uponor had acquired Wirsbo to develop its hot water business further, and being linked with both Uponor and Hewing opened up promising perspectives for Wirsbo as well. "The logic behind this acquisition was very evident, although I was surprised at how smoothly everything went", said Åke Forssell in the autumn of 2007.

In 1989, Åke Forssell was appointed head of Uponor's new Hot Water Systems Division and took responsibility for 900 new employees and roughly one fourth of the Group's total turnover. Having Forssell's expertise in PEX production at the Group's disposal was a considerable asset, since the technology and marketing of hot water pipes was new to Uponor.

Wirsbo and Hewing had been competitors, but otherwise competition in the PEX markets was not savage. The demanding, patented

Gas pipes on a freight train in the UK. Uponor divested its infrastructure business in the UK in May 2008.

technology kept serious competition at bay. Forssell's Division enjoyed a very strong position in the European hot water pipe markets.

Wirsbo also had promising potential in terms of exporting to North America. In the Northern states of the USA, the advantages of radiant underfloor heating in comfort and costs had resulted in something of a trend. Wirsbo estimated that USA sales could well multiply one hundredfold in a decade without requiring a miracle – a modest market share of a couple of percent of all heating pipes would suffice. The potential was alluring to the extent that Uponor decided to initiate PEX production in the USA.

Neste comes to the rescue of Uponor's growth strategy

"Uponor's turnover is over FIM 2 billion. It is by far our most important plastic raw material customer. Its international market areas are located in roughly the same geographical areas as our facilities. And finally, Uponor is strategically important to us in terms of volumes, R&D and growth in general." With these words, Jouko K. Leskinen, Head of Neste Chemicals, justified the changes in ownership to representatives of the media after Neste had fended off an attempted coup in Uponor's parent company Asko between December 1989 and January 1990. Through this intervention, Neste sought to secure its strategic cooperation with Uponor, which had continued uninterrupted since 1982.

At the time, Uponor's management group shared this view. Vertical integration, i.e. control over the supply chain in close co-operation with the raw material supplier, presented a way of securing Uponor's competitive edge in its main markets – pipe production for infrastructure applications. On the brink of European integration, cucumbers sold in market places had to adhere to directives – and soon plastic pipes also had to. Although, with plastic pipes the term used instead of "directive" was "Euro norm". Euro norms would apply to all products and production, opening up a European wide, unrestricted market area. It seemed that the old world was moving towards the system employed in North America, where savage competition had resulted in extremely close co-operation between plastic pipe manufacturers and their raw material suppliers. In the USA, the raw material contract alone could settle the fate of a plastic pipe manufacturer.

Uponor's strategy was updated in the Board meeting of December 1989. It was anticipated that the US principles would soon reach Europe, and the expected progress was recorded in the minutes of the meeting: "Europe will continue to integrate. Traditional PE and PVC pipes will become bulk products, and their markets will be controlled by producers who have joined forces with their raw material suppliers."

During recent years, Uponor's growth had been brisk. Between 1987 and 1989, Uponor's turnover and number of personnel doubled to FIM 2 billion and 3,000 employees, respectively. It is usual that such rapid growth creates a dip in company performance, but for Uponor the situation was quite the opposite. In the late 1980s and early 1990s, the Group achieved its best operating profit thus far. The profit percentage shot up to 9%, when in previous years it had remained somewhere around six and seven percent.

Obviously, the adopted growth strategy had been profitable and in the beginning of 1990s growth was further emphasised as the key to success. Metal, concrete and brick pipes were forced to make way for plastic pipes. It was anticipated that this "invasion of the plastic pipes" would continue, but at the same time the number of plastic pipe manufacturers would increase at an accelerated rate. In the future, unrestricted competition and increased numbers of manufacturers and production capacities would render company size and market share even more crucial than before. This supported the implementation of the growth strategy backed by Uponor's owners.

The European and North American plastics companies had been mapped and a number of prospective companies had been identified. But despite Uponor's good performance, its capacity for additional debt was reaching its limits. Following the acquisitions of Hewing and Wirsbo, the Group's equity ratio was only about 20%. This debt burden threatened to freeze growth.

Here, Neste came to the rescue and began to participate actively in the implementation of Uponor's growth strategy. In the years 1990 and 1991, Uponor actively sought acquisitions. Heikki Mairinoja later stated that many prospective acquisitions would have been abandoned without the financial support provided by Neste and the determined atmosphere it created. Thus, it could be claimed that Uponor's growth in early 1990s was partly realised with financial support from Neste.

Based on the number of acquisition negotiations, the peak year was 1990. Uponor entered into negotiations with infrastructure pipe manufacturers in the USA and with Du Pont's international gas pipes division. Uponor had long searched for a suitable company in France and negotiations were held with many prospective companies. Suitable candidates were also sought on the Iberian peninsula. At the same time, Uponor's Hot Water Systems Division was building factories in the USA and Switzerland.

Gas pipes provided a genuinely common interest for Neste and Uponor. Neste had a factory in Sweden producing high-quality polyethylene as raw material for gas pipes. Uponor's interest in gas pipes stemmed from the advanced technology required in their production. Gas pipes belonged to the more demanding infrastructure applications. In PE pipes for gas transport applications, leaks are unacceptable and quality standards high, which render the margins on gas pipes significantly higher than on regular PE pipes less strictly controlled and subject to more intense competition.

The number of gas pipe manufacturers was further restricted by the fact that the customers were large power companies demanding large volumes. Thus, small enterprises were eliminated from the competition. Uponor had learnt its lesson in 1988 when it had acquired the Yorkshire Imperial Plastics (YIP) in the UK. YIP increased Uponor's share in the British markets and offered innovative PVC pipe production. This acquisition was not so much motivated by increasing Uponor Ltd's production volumes and coming into possession of the so-called "oriented pressure pipe" as it was for gaining access to the British gas pipe markets. However, it soon became clear that YIP's capacity was not sufficient to enable

Gas pipes transported from Uponor's plant in Treuenbrietzen, Germany.

Ultra-Rib pipes were advertised by ETI and gained strong foothold in the North American markets.

Mondial pipes are used for pressurised water lines in North America. Due to its molecular oriented wall structure, Mondial pipes offer superior resistance compared to regular PVC pipes. In North America, Mondial is better known as Ultra-Blue.

participation in any of the more significant competitive tenders.

Thus, the only other alternative was to acquire a company which already had a strong position on the market. A window of opportunity presented itself in 1990 when Du Pont, the American multi-corporation, announced its intention to sell its Aldyl Division. Aldyl had production facilities in the UK, the USA and Argentina. Its share of the British gas pipe markets was nearly 50% and over one third in the USA.

The due diligence audit on Aldyl showed that the company was on a sound basis. However, maintaining its profitability required additional investments because its previous owner had stripped the company for profit and kept investments to a minimum. It was predicted that Aldyl's margins were more likely to decrease than show any increase.

The audit did not inspire Uponor's interest in Aldyl. Gas pipes were alluring, yes, but Uponor's headquarters feared that an acquisition of Aldyl's dimensions would shoot the financial risks through the roof.

Fortunately, Uponor had an alternative. Extrusion Technologies Inc (ETI) was a US company as well, but with fewer inherent risks. Its price request of USD 18 million was less than one third of the price of Aldyl. ETI was about the same size as Lubonyl, Uponor's first acquisition, had been. Its product portfolio included underground drainage, wastewater and pressure pipes made of PVC, which rendered it similar to Lubonyl in other respects as well.

ETI's production was familiar and corresponded well to Uponor's core competence. ETI's market share was about 10%. Earlier experience had proved that this was insufficient and further information on ETI's profitability only strengthened this view. On the other hand, the future prospects were very promising. It was generally believed that PVC pipes would continue to penetrate the US pipe markets and the construction sector seemed to be recovering from its recession. ETI was licensed to sell Uponor's Ultra Rib pipes and Uponor trusted that, with more investment in marketing, Ultra Rib sales could be significantly increased in North America. Uponor's product portfolio also included other items such as manholes and building maintenance and modernisation solutions, which could sell well in ETI's markets. ETI, it was believed, would provide Uponor's innovations with a channel to the broad North American markets.

Although it was necessary to import technology from Europe, the advantage of acquiring ETI was bidirectional. Now that Europe was heading for an operational environment resembling that in the USA, where raw material suppliers and plastic pipe manufacturers operated in close co-operation, ETI's experience in low-cost operations would be an invaluable asset to Uponor's European units. Being familiar with US business dynamics would give Uponor a clear competitive advantage compared over rivals operating on the old continent only. Thus, the acquisition of ETI was well-founded.

But once again, Uponor's Board of Directors was not convinced. Neste favoured Aldyl, Uponor's Management Group wanted ETI.

As the year 1990 was coming to an end it was time to make a decision. To continue their negotiations, the Board of Directors and Uponor's Management Group retired to Ruka, Lapland's southernmost Arctic fell. During skiing trips it became evident that Neste was unwilling to let such an opportunity slip by. "It is possible Neste sort of twisted Uponor's arm," Jouko K. Leskinen later commented on the affair. The negotiations resulted in a compromise – both had their own way. History repeated itself and Uponor acquired both Aldyl and ETI.

This would not have been possible without Du Pont agreeing to reduce its original price request and Neste offering to provide 49% of the total value of the new subsidiary. According to Jouko K. Leskinen, Neste's participation in the Aldyl acquisition provided the necessary reassurance. "Gas pipes are a risky business. I think it was a good idea that Neste participated openly from the beginning, reassuring customers of continuity."

Gallia and Iberia

In the late 1980s, Uponor had sought a company for acquisition in France. The markets for infrastructure pipes and hot water applications were significant and, logistically, France was optimal because Uponor had production facilities in Germany.

Obviously, the French markets could not be conquered from Germany. After serious consideration, Uponor's management came to the conclusion that the best method for establishing Uponor's position in France would be to find a local partner and operate as a minor shareholder for a few years, in order to learn the French business. Unfortunately, a suitable partner was nowhere in sight.

The acquisition of RYB was first negotiated in 1990. RYB employed 70 people and specialised in protective cable pipes, with a

50% market share. Cable protection pipes had promising growth potential in France. Some synergy benefits would also be gained because Uponor had some cable protection production of its own. However, low-cost cable protection pipe production was not one of Uponor's primary interests and RYB's attractiveness was further diminished by its high price. After the decision to acquire Aldyl and ETI was made, RYB was discarded.

However, RYB was taken up again in late 1991. As with Aldyl, Neste helped make ends meet. Neste's development company Noptor paid half of the acquisition price. The primary purpose was to gain access to the French pipe markets, but naturally Uponor wished RYB to be as profitable as possible. The original idea was to turn RYB into a low-cost provider focusing on a narrow market segment and taking advantage of the parent company's innovations. However, this plan was not successful. New products did not influence any permanent change in RYB's performance and sales of cable protection pipes did not progress as expected. Even RYB's role as a channel to the French pipe markets was not fully realised. During the 1990s, negotiations were held on several occasions, but they all came to nothing in the end.

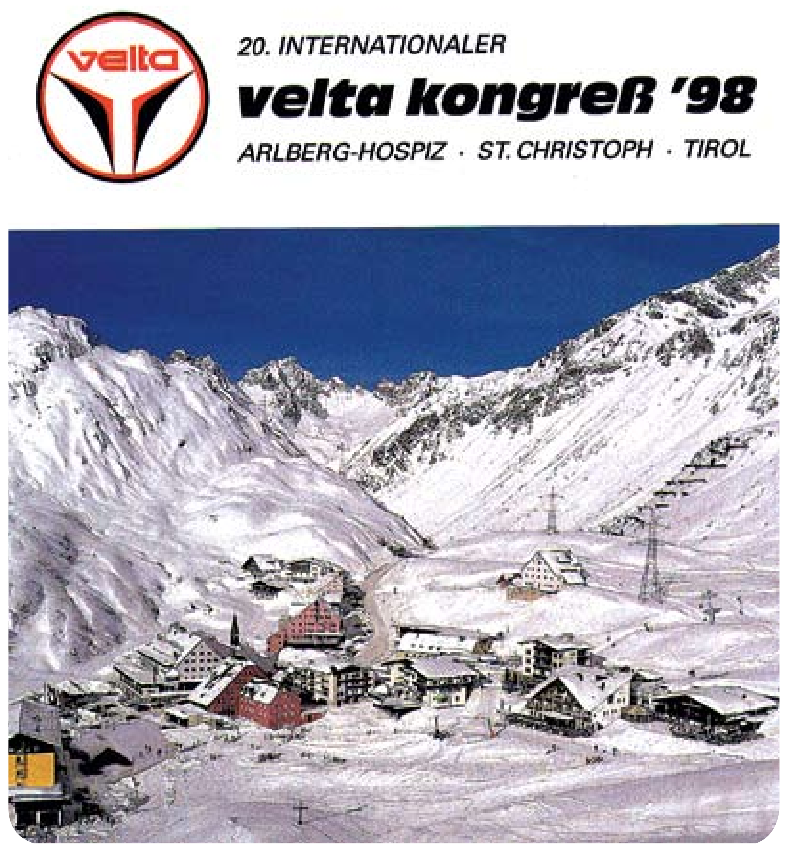
In addition to France, Uponor looked for suitable infrastructure pipe manufacturers in Portugal and Spain, where building and construction was second only to Germany. Uponor's Hot Water Systems Division had some production in Spain, thanks to the Wirsbo acquisition. In conquering Iberia, a somewhat more temperate strategy was adopted. In Portugal, Uponor's partner was Vista Alegre. In Spain, at first Uponor acquired a 20% share in Resiplast, which controlled one third of Spain's PE production.

Neste had a production facility in Portugal. Thus, it was only natural that it should try to find a solution based on which Uponor could fully exploit the PE raw material supplied by Neste, in order to manufacture pipes successfully on the Iberian peninsula. "However, we weren't all that keen. We were familiar with the profitability prospects and they were weak," Heikki Mairinoja stated.

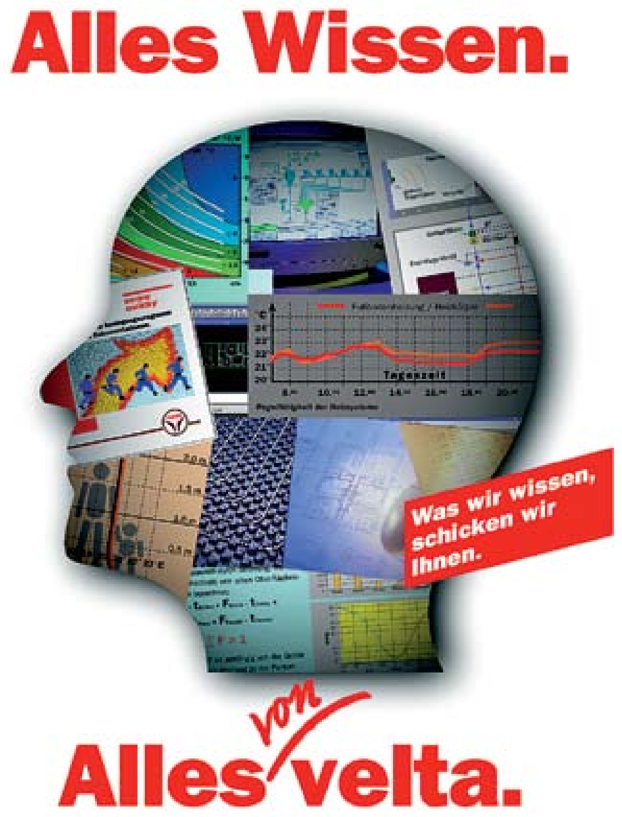
Multi brand – multi channel

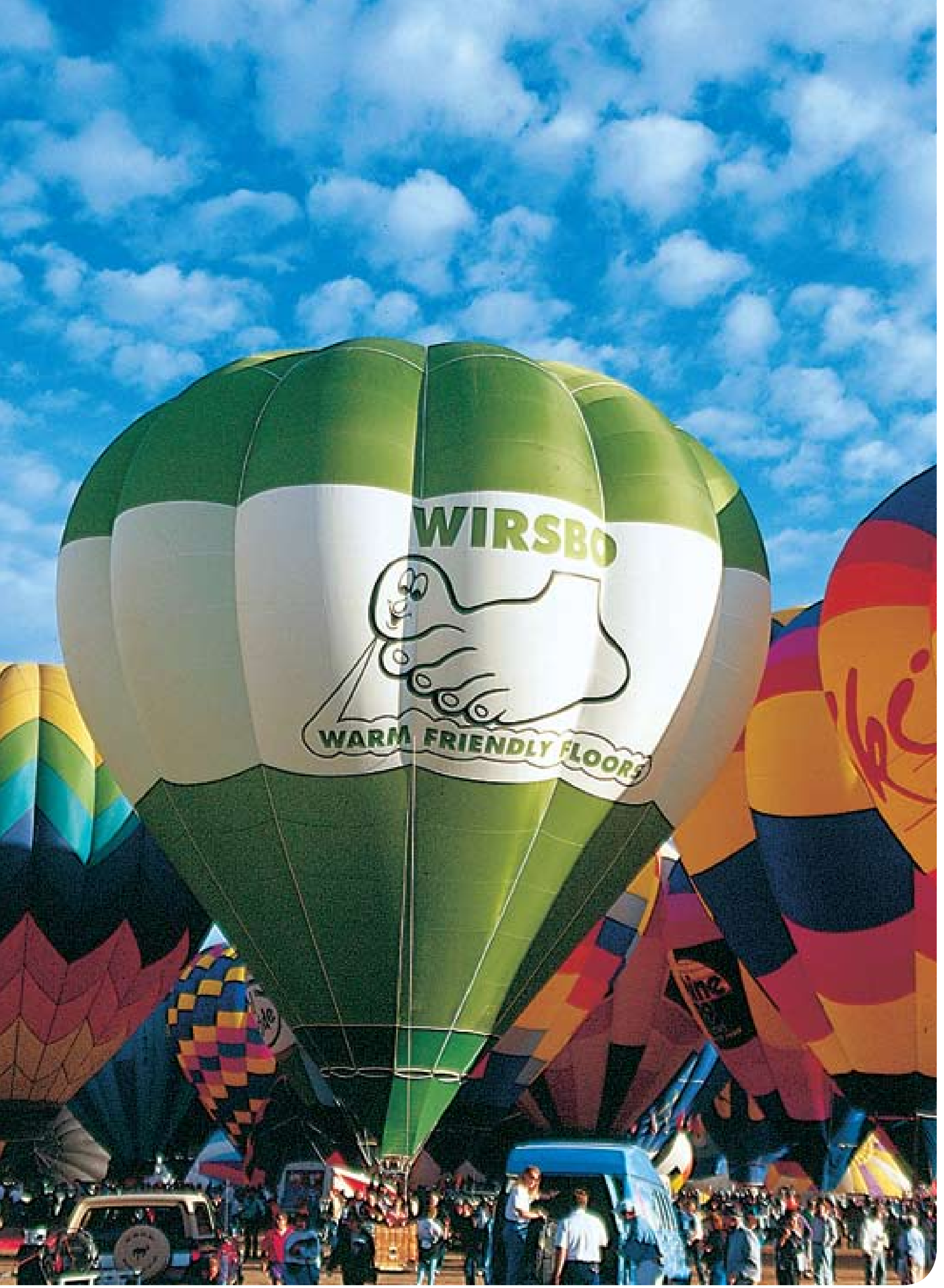
In 1988, Uponor's hot water pipe business got off to a flying start. The Group's share of hot water pipe markets in Germany and the Nordic countries was 60%. In Switzerland, it was even greater. Furthermore, there was nearly unlimited growth potential since PEX pipes' share in housing technology applications was only a few percent. Uponor had no second thoughts about success – compared to copper, PEX pipes offered considerable advantages. The installation of PEX pipes was less expensive and they were better equipped to resist damage – water rich in iron did not corrode PEX pipes. Underfloor heating gained in popularity as a comfort-

The Austrian Alps provide Velta with an excellent setting for building good customer relationships.



Velta's marketing was customer-driven.





A hot air balloon sponsored by Wirsbo participated in an event organised in New Mexico, USA.

able and energy efficient heating solution. Despite a slow increase in construction, renovation and modernisation projects were on the rise. Plastic was an optimal choice because flexible plastic pipes could be more readily installed into existing structures.

Thus, the external situation was excellent. However, internal conflict was approaching the crisis point. Uponor's Hot Water Systems Division had been created by uniting two rivals under the same roof. These companies had traditionally regarded each other as a threat and benchmark of their success.

From the Finnish perspective, everything had seemed clear. Through the acquisition of Wirsbo and Hewing, Uponor had acquired long-term growth. In the short term, Uponor had acquired two organisations with partly overlapping business operations and overproduction (PEX capacity surpassed demand in Central Europe). The solution was obvious: to combine the business operations of the two companies and reap the synergy benefits.

However, all attempts at combining the business operations were fended off by strong, stubborn organisations holding on tightly to their independence. Local overproduction could be solved by closing one of Wirsbo's plants in Germany. Solving the core issue – agreeing on a rational operating structure for the Hot Water Systems Division – called for discreet and flexible management skills. Forcing the old rivals to co-operate would have been damaging to the whole company and its customers, not to mention draining all energy from the management group.

Customer training by Wirsbo at the Apple Valley facility in Minnesota. John Barba's training sessions were always sold out.

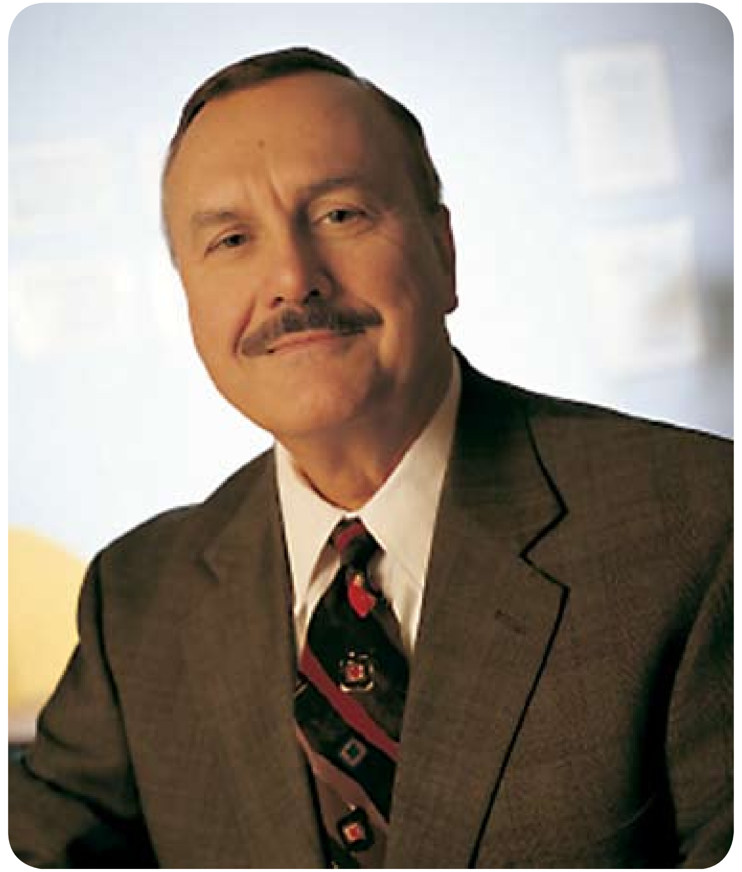
In the end, the answer was simple. Wirsbo and Hewing were left more or less intact and allowed to continue their operations as before. Heikki Mairinoja, who had been appointed CEO in 1989, later made the following comment on the role of the Group's executive management: "- – we just tried to coordinate what could be coordinated. And to ensure capacity was developed in the correct direction. And, of course, we were trying to make sure that companies within one division would not be at open war with each other." This might sound exaggerated, but at the time open war was not far off; an external consultant had to be invited to settle the disputes between Wirsbo and Hewing in Germany. But time heals and in the years to come the old rivalries faded. Heikki Mairinoja further emphasised the importance of internal training for the positive development of ground rules.

The operating model of Uponor's Hot Water Systems Division was named "multi brand – multi channel". In practice this meant that Wirsbo and Hewing, Velta and Polytherm and all the companies acquired at a later stage were allowed to continue their business operations using their own brands, trademarks and delivery channels. Åke Forssell, head of Uponor's Hot Water Systems Division, described the advantages of the adopted method as follows: "In a typical situation, Hewing's customer would be the second largest local dealer, and Wirsbo's would be the largest. There were some differences between their products. The system components, for one, were very different. Had the customers of both suddenly been informed that due to changes in ownership all products would in the future be delivered via only one channel, I trust we would have lost at least one of the customer companies. And that would have been against Uponor's growth strategy. Applying this operational model, we were able to maximise growth before our competition reached the markets."

"Multi brand – multi channel" fitted seamlessly into Uponor's tradition. From the beginning, Uponor had distributed authority to local management and individual business solutions, and operational cultures were accepted. Thus, it was not this model that required getting used to so much as the Hot Water System Division's method of conducting business, which dramatically differed from the other business units. Whereas vertical integration had taken place between raw material suppliers and production, in hot water systems co-operation was carried out at the other end of the supply chain – the customer. In the hot water systems sector, it was not sufficient to have suitable products available at competitive prices. This was a pioneering business and its first task was to create demand and at the same time build strong brands.

Wirsbo's and Hewing's sales organisations organised seminars where products were introduced, their advantages presented and instructions given on their handling. The objective was to alienate installers from the traditional copper and steel pipes and make them see the benefits of plastic pipes. Emphasis was given to the fact that Uponor did not offer mere PEX, but provided the installer with complete systems.

Frank Bailor was at first the Managing Director of the North American Hot Water Systems company and later the manager of the European Utility Division.



The system was successful. PEX strengthened its hold on the pipe markets. However, sales efforts, starting with the creation of a customer base, would not render results any time soon and were far from inexpensive. For the Finnish management, accepting the considerably higher expenses of the Hot Water Systems Division was by no means self-evident. System-based thinking and customer commitment – the branding ideology – was something new in a business where management competence and operational success were measured in terms of tonnage and how cheaply these tons could be delivered to the customer.

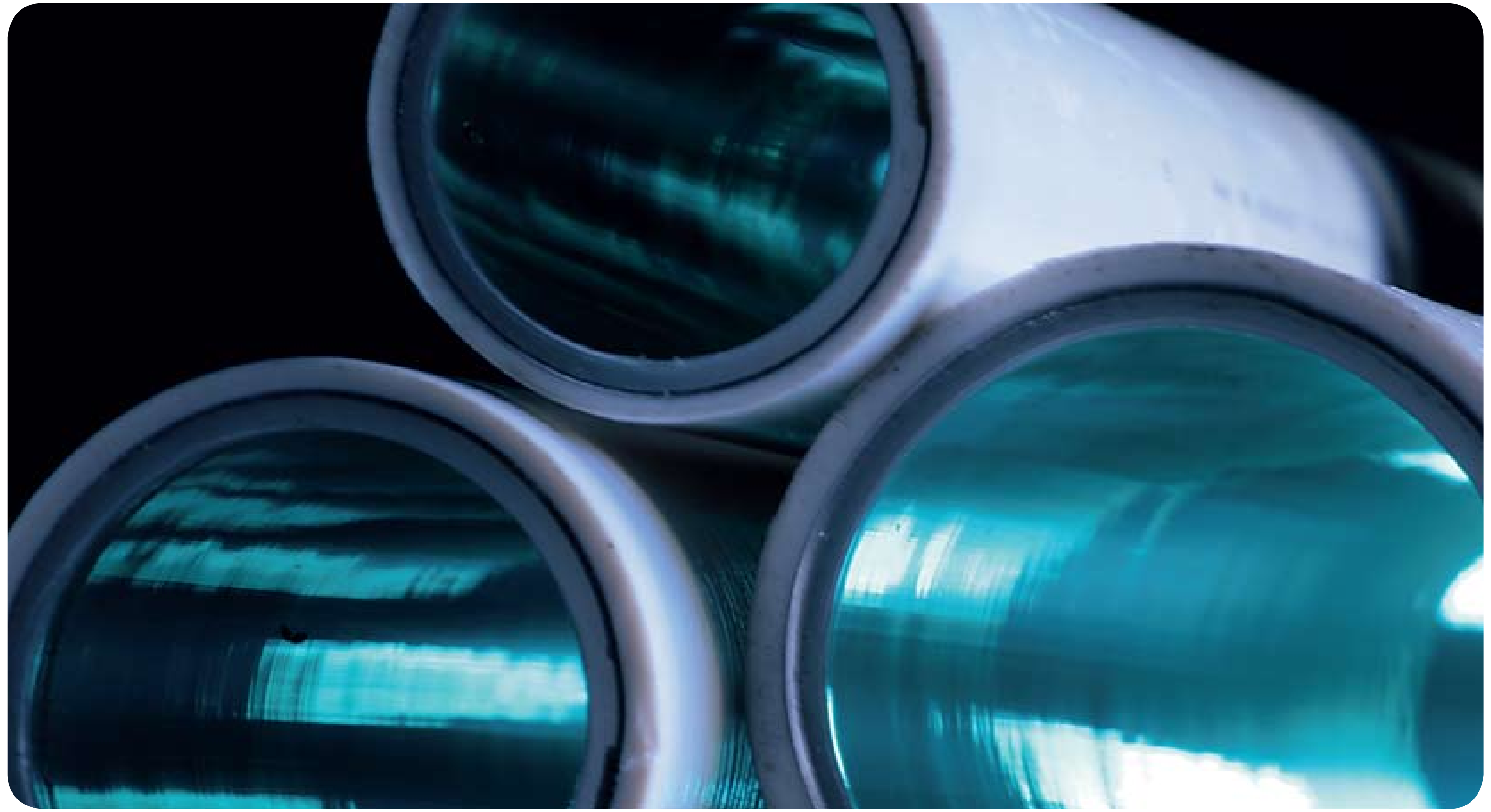
Heated discussions were exacerbated by the difficulties the Hot Water Systems Division had run into in the USA. Wirsbo's PEX pipe plant was built in Apple Valley, Minnesota, in 1990. The timing was inopportune since residential building in the US had taken a sharp downward turn. With declining demand, it became apparent that the first thing required was to create demand. According to Åke Forssell "Creating the markets and introducing systematic marketing was the only route to growth."

The worst years for the Hot Water Systems Division were 1991 and 1992. Uponor had invested heavily in the hot water markets and its expectations were high. However, the period before any returns on the investment could be expected seemed painfully long. At first, financial performance in Europe was disappointing and US investments had only amounted to losses. To balance the situation, the Hewing plant in Switzerland had to be closed in the autumn of 1991. Giving up on the US markets was not yet considered, although the future of the Apple Valley plant was by no means certain. Ever so slowly, the Uponor Management Group was beginning to lose faith in any turn for the better emerging.

Uponor's Board of Directors joined the chorus wondering how it was possible that superior market position and financial success did not coincide. The Board suggested the management group should find suitable partners to undermine copper pipes' market position more effectively. It questioned the adopted "multi brand – multi channel" model, its latter part in particular, and voiced the question of whether or not the operations of Wirsbo and Hewing might be more profitable should their independency be limited to brand names.

But in 1992, the Hot Water Systems Division's fair performance silenced all criticism. The turning point was first evidenced in Europe. Due to this, Uponor did not yet want to give up on the US markets, although the deadlines for a turnaround had been passed one after the other. Frank Bailor, who was familiar with the local markets, was appointed new Managing Director of the US subsidiary. Achievements were made in Bailor's era, and the Minnesota plant finally became profitable in late 1993. Apple Valley celebrated by organising a "We are in the black" party for the entire personnel. A sigh of relief could also be heard from Uponor's headquarters. Only a little later, in 1994, the headquarters also had reason to celebrate: demand for PEX pipes had surpassed supply and capacity was rapidly increased in all plants.

Unipipe secured for Uponor a strong position in the rapidly growing composite pipe segment.



The Quick & Easy fittings were developed by Wirsbo. They offer exceptional operational safety and are popular all over the world.

Major growth in building services technology

Slow to warm up, the success of the Hot Water Systems Division gained speed in the following years, meeting the growth expectations bestowed upon it. The results of the market research commissioned ten years before had been correct. Furthermore, the growth in PEX demand was not only the result of favourable construction trends – plastic was replacing copper in buildings. In the mid 1990s, the annual growth rate in demand for hot water pipes was 15%. Organic growth played an important part when Uponor Hot Water Systems' turnover increased over threefold between the years 1989 and 1998. At the same time, the Division's share of the Group's total turnover rose from around 20% up to 40%.

In part, this rapid percental growth can be attributed to the fact that Uponor's infrastructure applications witnessed very moderate growth, if any. In 1995 and 1996, Uponor engaged in several negotiations to acquire companies that would contribute to the increase in locations where Uponor already had activities. In the USA, Uponor participated in the bidding competition for PW Pipe. Had Uponor won the contest it would have increased the market share of Uponor ETI. The management group was ready to bid more than the Board was prepared to back up. Uponor did not win PW Pipe, but attempts were made to improve ETI's position by building a second production plant and allocating some of the manhole production that was very profitable in Europe to the company.

A similar round of fruitless negotiations was held in Norway and France. Uponor came second in the bidding competition for Seperef, the water pipe company of the French Compagnie générale des eaux in 1996. The acquisition of Seperef would have increased Uponor's share in the infrastructure applications markets close to its major competitors in France and Spain. It was also anticipated that the acquisition of Seperef would have a positive impact on the operations of RYB, Uponor's subsidiary in France. When a Belgian

competitor with French ownership won Seperef, it caused Uponor—which had made a very good offer—to suspect some degree of trade policy influence in the decision-making process.

However, experience gained from the large water companies was not lost. Hard work was rewarded in the UK. In the late 1990s, the local Uponor Ltd concluded a supplier contract with Severn Trent Water Ltd, the third largest water company in the UK. Severn Trent became one of Uponor Ltd's supporting pillars, raising Uponor's share in the British water pipe markets above 30%. The other major contract was signed with British Gas. British Gas was the single-most important customer of Uponor Ltd. In the gas pipe markets, Uponor's attempts had succeeded and it was now the unrivalled market leader in the UK. The contract with Severn Trent complemented its gigantic contracts with British Gas, breaking Uponor's top contract size records one after another. Like gas pipes, contracts on water pipes were made for several years at a time and covered all of the customers' needs.

However, despite these victories in the UK, gaining access to new markets via acquisitions was becoming increasingly difficult. Buyers' markets were a thing of the past. Suitable companies were scarce and bids were high.

And if competition in the pipe company markets had become more intense, so had competition in the pipe markets. The decade of booming construction in Germany began to show signs of fading around 1997 and 1998. Uponor noticed that it had to cut down surplus production of some pipes manufactured in large volumes.

Jukka Kallioinen, Head of Uponor Anger in late 1990s, was able to state in hindsight that: "We all panicked a little when the German markets started to slow down. We had built our German PE capacity up to 140,000 tons, I think. And then demand plunged to 60,000 tons." From Germany, the problems spread to neighbouring countries to which the surplus was dumped at any price.

One third of Uponor's capital was tied into infrastructure solutions production. However, the return on investments was low. Something had to change. There were two available methods for improving profitability. Either Uponor had to gain market leadership, or it would need to specialise.

In the late 1990s, Uponor was searching for functional models for both alternatives. It negotiated co-operation and structural reorganisation with the French Alphacan and British Glynwed. However, these negotiations had no concrete results. The other alternative was to specialise; differentiate its production and products from those of its competitors. Experience accumulated in the Hot Water Systems Division was transferred to infrastructure pipes, and efforts were made to apply the systems method and customer orientation there as well. This was a rocky road, especially for units whose market situation was low such as Uponor RYB in France. Uponor's Board of Directors had lost faith in RYB. The following was recorded in the minutes of a Board meeting in the autumn of 1997: "– – reviewing the company's development, we can come to one conclusion only; small business units such as RYB can no longer contribute to the growth and development of new and more demanding businesses."

PEX pipes could be "walked in" into Velta's installation panels.

Uponor ETI in the USA was regarded as another lost case, where attempts at reorganisation or development were deemed fruitless. Importing technology from Europe to the USA had not been successful. Even under Uponor, ETI's profitability level had remained poor. Advantages to the parent company had been at best modest, contrary to the high expectations during the acquisition. By now, Uponor was competent in the low cost dynamics of the American markets, but as such this know-how was not beneficial in Europe. The dynamics in the old and new continents were too far apart. European integration did not result in a "United States of Europe" with similar common markets as in the US, or in enhanced co-operation between plastic pipe manufacturers and raw material suppliers. On the contrary, many European raw material suppliers either lost interest in the plastic pipe industry completely or at least significantly in the late 1990s.

The sale of ETI and RYB was decided on in 1998. Uponor did receive some tentative offers for ETI. These did not lead to negotiations, because the price level did not correspond to the investments made in ETI, particularly since, in the late 1990s, ETI's performance had clearly improved. The French subsidiary was even more challenging. Buyers showed no interest in RYB. Thus, RYB started manufacturing protective covers for optic fibre cables. This

Jukka Kallioinen made a notable career in Uponor's European infrastructure business.

Keith Lyons was at first the Managing Director of Uponor's Gas Pipe business in the UK and later the manager of Uponor's Hot Water Systems Division.

technology was transferred from Northern Ireland, where Uponor had acquired Radius Plastics Inc in 1998. Considerable expansion was anticipated in the markets for fibre optic cable pipes on account of the Internet.

In the late 1990s, hot water pipes comprised the core business area of Uponor. Other plastic pipe manufacturers were willing to obtain their share of market growth, of course. PEX attracted new manufacturers, big and small alike. Although exotic in the 1980s, the patents on the technology had expired and know-how had spread. The market leader, Uponor, responded to this intense competition by acquiring small, innovative manufacturers and partnering with distribution companies selling Uponor systems.

In PEX production, Uponor was interested in maintaining all three, the underfloor heating, plumbing and radiator applications, and in all product segments. It acquired the least expensive PEX-b production and started to manufacture polypropylene pipes in Poland. These PPr pipes were also called "poor man's hot water pipes" and they sold well in Eastern Europe. However, the most extensive addition to Uponor's PEX capacity was the expansion of both the Wirsbo and Hewing factories. In North America, a new hot water pipe plant was built in Canada. And a new mega factory to manufacture all of Hot Water Systems Division's polypropylene pipes and some of the PEX systems was to be built in Sochaczew near Warsaw.

Unicor's headquarters in Hassfurt, Bavaria.

The plant was built, but before it was ready the plans changed. Wirsbo's innovation enabled considerable increases in capacity without the need for new factories. Furthermore, it seemed wiser to increase plumbing systems' component production – metal and plastic fittings, in particular – than to increase PEX capacity. These components played a crucial role when composite pipes became Uponor's fastest growing business.

Unicor completes housing solutions

In 1999, Uponor made the acquisition which secured its position as the leading supplier of plumbing systems for the housing sector in the 2000s. Uponor had been interested in a German company called Unicor Holding AG for some time. The company had successfully exploited the booming domestic construction markets and witnessed rapid growth. It had been established in 1984 and had started as an equipment manufacturer in Hassfurt, a small town in Bavaria. Some ten years later, it had five factories and 780 employees.

Roughly half of Unicor's net sales were from composite pipes.

Composite pipes are multilayer pipes, and Uponor was interested in the new technology. Such pipes have three layers. The middle layer is made of aluminium and protected by plastic outer and inner layers. The resulting pipe is light and resistant, yet more rigid than PEX pipes. Composite pipes are used in plumbing and heating applications and, thus, compete on the same markets as PEX pipes, but usually not for the same customers. It could be said that composite pipes and PEX pipes complement each other. Flexible PEX pipes are best suited to underfloor and primary installations, to be embedded, whereas composite pipes are deployed to best advantage in applications where pipes remain visible. The acquisition of Unicor secured Uponor's ultimate strategic goal, to become Europe's leading plumbing and radiator pipe supplier. The fact that sales of composite pipes increased at an annual rate of 30% did nothing to dampen Uponor's interest! "Our customers had already asked us to start supplying composite pipes, and many installers and wholesalers were very enthusiastic about them," Åke Forssell stated.

The interest was mutual. Unicor was the world's leading manufacturer of composite pipes. However, intensive growth took its toll, and Unicor was heavily in debt, which is typical of growth companies, and lacked sufficient equity, which is typical of family businesses. Unicor was interested in Uponor's financial and technological resources and existing distribution channels. No doubt the declining trend in the German construction markets further enhanced Unicor's desire to find a suitable partner.

Åke Forssell and Horst Rahn during the Unicor acquisition.

The acquisition negotiations were unusually long. Much time, skill and clever tactics were required from both counterparts. The first contract negotiations were held in 1997. The companies reached a consensus on the financial arrangements important to Unicor and a model whereby Uponor would first buy 40% of Unicor's shares and be granted an option for an additional 50% two years later, at a price determined by Unicor's profitability level.

Uponor had some bad experiences of minority ownership and the Board requested that the management group investigate once more whether there was any possibility of acquiring a majority share of Unicor in a one-off transaction. Uponor offered the owner families DEM 100 million and an additional DEM 50 million to invest in the development of the company. But some of Unicor's owners were reluctant to give up their decision-making powers. In the summer of 1997, the contract was finally closed. Uponor acquired a 40% share from one of the families and an additional option for 10.1% two years later. This would make Uponor the majority shareholder.

The terms of agreement were revised in the summer of 1998, and it was agreed that Uponor would acquire shares that would guarantee majority ownership by the beginning of 1999. Unicor's Managing Director and founder Horst Rahn and Dieter Pfister, one of the key shareholders, accepted the accelerated schedule.

Underlying the need for such precipitate action were the shares issued to personnel. As a result, there was an abundance of new shareholders whose objective was to list the company on the German exchange. Uponor, whose parent company, Asko, was already listed on the Helsinki exchange, had no such desires.

Uponor redeemed its option and received a 10.1% share of stock in early 1999. Few months later, Uponor agreed to acquire the remaining shares from Rahn and Pfister. This raised Uponor's ownership to 90% which put an end to the small shareholders' plans to list the company. Uponor offered to buy the Unicor shares at the same prices as from the previous majority owners and, by the autumn of 1999, Uponor had acquired over 99% of Unicor's shares.

Along with Unicor's acquisition, Uponor received 1,000 new employees. Thus, Germany's importance grew. Nine plants were located in Germany, one fifth of Uponor's turnover was created there, and almost one third of Uponor's employees spoke German as their mother tongue. Although Uponor had to pay more for Unicor than had originally been estimated in 1997, the end result was good. With Unicor, the share of hot water systems amounted to nearly a half of Uponor's total sales. For a while, Uponor was the world's largest plastic pipes company with its EUR 1 billion turnover and 5,500 employees.

Becoming the world's largest plastic pipes company was, of course, a great achievement but, more importantly, Uponor had now gained what it had pursued – market leadership in composite pipes. Composite pipes complemented Uponor's systems and sold well. Unipipe, which was based on Unicor technology, soon became an integral part of Uponor's housing solution sales.

Oras becomes the new owner, Asko appoints the CEO

In 1998, Neste put its shares of Asko up for sale. Neste was an oil company which had sold its chemicals branch in the mid-1990s. In Neste's new strategy, Asko's subsidiary Uponor was of no strategic importance.

The Asko stake was sold in September 1999. Most of them were purchased by Oras Ltd, owned by the Paasikivi family. The remaining shares were acquired by the Finnish insurance companies – Asko's old shareholders. Once the deal was closed, speculation on who would succeed Neste as the biggest owner was dampened. Oras – a water tap supplier – was not among the most likely candidates. Its participation surprised the markets as well as Uponor. At this point, only 10% of Uponor's turnover was from Finland. Hence, it was not expected that the purchaser of Neste's shares would be from Finland.

When the deal was publicly announced, Oras emphasised its role as an industrial owner not looking merely for beneficial investment opportunities. Like Uponor, Oras had a strong position in the Finnish markets and was now an international company. Oras made four out of every five water taps sold in Finland and its turnover abroad represented 60% of its total turnover. The two companies had overlapping interests in housing technology. The Paasikivi family was confident that this was an area of unlimited potential.

Neste was also very relieved by the turn of events. Some of Glynwed's owners had been interested in Neste's shares. Glynwed was the world's largest plastic pipe manufacturer and, according to CEO Jukka Viinanen, Neste was not eager to sell a large part of its long-term partner to a competitor whose interest was most likely not based on industrial aspirations.

At the time, the British Glynwed's majority shareholder was an investment company. Its value would have increased significantly with Uponor or the fusion of the world's two leading plastic pipe companies, Uponor and Glynwed. Had the merger taken place, Uponor would have become listed on the London stock exchange instead of Helsinki, as part of the more powerful market leader. This idea was not new to Uponor. Cooperation had been discussed with Glynwed on several occasions during the 1990s.

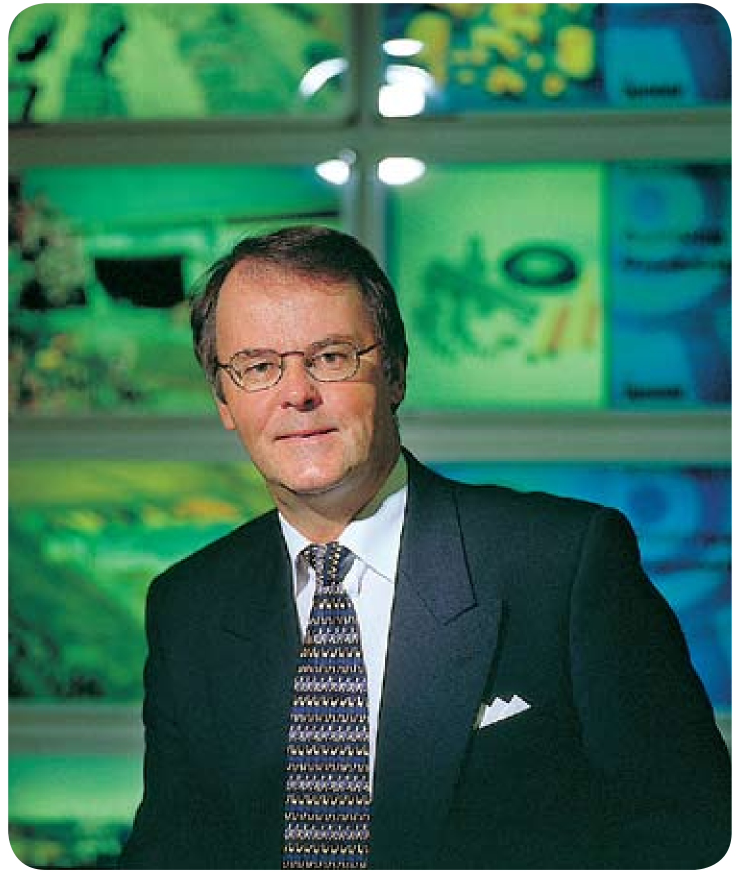
However, Oras was a plausible buyer with long-term plans for Uponor. This was important to Neste. In the UK, such arguments in favour of the Finnish buyer might well have sounded like "trade politics". Abroad, there were some who suspected Oras of being Neste's dummy company. In view of Oras's size, this acquisition was a rather bold move and it was suspected that in due course Oras would agree on a deal Neste could not engage in for reasons of image. During the following few years, Pekka Paasikivi, Chairman of Uponor's Board of Directors, was contacted several times with trading offers. "These were usually suggestions for mergers or acquisitions, where Glynwed would acquire the majority of shares." According to Paasikivi, Uponor's owners were not tempted by these offers. "We were not the only owners who declared that Uponor would not be merged or sold to anyone."

Asko and Oy Uponor Ab merged in the beginning of the year 2000 and Asko's CEO Jarmo Rytilahti continued as Uponor Corporation's CEO. Although Jarmo Rytilahti had been a member of Uponor's Board of Directors for several years, the appointment came as a surprise to most of Uponor's employees.

While Uponor had acquired companies, Asko had divested its business units. However, the process within Asko was not yet finished. Thus, Uponor's Board of Directors thought that Jarmo Rytilahti would be the right person to see the project to its conclusion and divest Asko's old household appliance and flooring businesses, which had been transferred to Uponor in the merger. Rytilahti's previous experience as CEO of a public limited company was seen as an asset. Furthermore, Uponor's strategy was being reviewed and the new strategy included certain aspects that required changes in executive management.

Heikki Mairinoja, who had been with Uponor for 15 years, was appointed Deputy CEO. However, he moved on after a short period in the office as did another of Uponor's influential men, Juk-

Jarmo Rytilahti participated in the reorganisation of Asko and initiated structural changes in Uponor in the 2000s.



Uponor Group's Board of Directors in 2000. Pekka Paasikivi and Hannu Kokkonen seated in front. Standing behind them Horst Rahn, Matti Niemi, Jukka Viinanen and Niilo Pellonmaa.

ka Rausti. Jukka Rausti had been appointed Manager of Uponor's Hot Water Systems Division in early 1999, after Åke Forssell's retirement.

After Rausti resigned, Director of Business Development Kari Norbäck was the only member left from the original management group who had been in office since late 1980s. In 2000, the management group comprised two members in addition to Rytilahti and Norbäck: CFO Jyri Luomakoski and General Counsel Marja Hanski. The three pipe business divisions were headed by Keith Lyons, Frank Bailor and Jukka Kallioinen.

Unicor's founder, Horst Rahn, was elected to the Board of Directors in the spring of 2000. His negotiating partners there included Chairman of the Board Pekka Paasikivi and CEO Jarmo Rytilahti. According to Pekka Paasikivi, Uponor's strategic guidelines were discussed in a drastically altered situation compared to the previous year: "Horst Rahn had said, around the time of Unicor's acquisition, that he had agreed to sell to Uponor merely because he was certain that all of the others would have immediately integrated Unicor. Rahn was under the impression that Unicor would be able to continue operating as before, acquiring companies and integrating them in Unicor. Only 6 months later, Paasikivi and Rytilahti were appointed and they declared that this was not going to happen. On the contrary, the Group needed to be consolidated and a single brand strategy would be implemented."

Increasingly market-driven

In 2000, Jarmo Rytilahti finally finished divesting Asko's old businesses. After five years of hard work, Asko's household appliance and flooring businesses, which had been transferred to Uponor in the merger, were sold. As a result of these divestments, Uponor could record a capital gain, and because the sold companies took their debts with them, these divestments resulted in a significant decrease in the amount of interest-bearing liabilities. Uponor, which had been very much in debt, was suddenly solvent. The Group's equity ratio was close to 50%. And the year 2000 was a good year for businesses as well. In the UK, a major deal was closed with British Gas, amounting to MEUR 265 when the option years were included. The composite pipe business acquired the previous year was very successful. And with Unicor, the Group's total annual turnover was EUR 1.35 billion – despite divestments this was around the same as in the previous year.

Uponor could now afford acquisitions, but was in no hurry to accomplish them. In an interview with Jarmo Rytilahti, a reporter from a Finnish economic journal asked out of habit about Uponor's next acquisition. Rytilahti replied that Uponor had become picky. New acquisitions would be carefully pondered and would have to fit into Uponor's new strategy.

Uponor's Snow & Ice Melting System installed at the Gardermoen airport in Oslo, Norway in 1999.

Ever since the 1980s, Uponor's objective had been to become a leading plastic pipe supplier – measured in production capacity as well. Under the new ownership, using up as much raw material as possible was not as much of an issue as maintaining a leading position in the markets where Uponor wished to operate, and in the products and systems it wished to manufacture. For Neste, the priority had been tons first. For Oras, profitability carried more weight. Emphasising profitability – and dividends – was also a result of Uponor's position as a listed company providing its investors with a steady, preferably steadily growing, flow of dividends.

Market-driven operations had already been rehearsed before.

When Neste sold its chemical business in the mid-1990s, Uponor's raw material based growth strategy fell out of date. By the end of the 1990s, strategic co-operation with Neste no longer guided Uponor's acquisitions. It was now decided that the strategy needed to be market-driven. Uponor's new management decided it was time to clear away any reminiscences of the past that did not fit in well with the 21st century business environment and return expectations fit for a listed company.

Uponor's strategy was reformed as PEX production became increasingly mainstream and PEX-b material – which was the cheapest and easiest to manufacture – was already in bulk production, with only price making a difference. In the mid-1990s, Uponor had faced around 15 competitors in the hot water pipe market; 5 years later there were 50. Many of the new enterprises had no PEX production of their own, but sold products manufactured by others under their own system brands, letting the manufacturers bid against one another. Increased competition could not be prevented in the field of composite pipes either. Advanced technology in system and pipe solutions could no longer be counted on to provide the competitive edge.

Uponor's Snow & Ice Melting system was installed in Salt Lake City's Olympic Village in 2002.

Uponor was the first to develop a residential fire sprinkler system connected to the plumbing system.

Uponor's new strategy was presented by Jarmo Rytilahti and Kari Norbäck in late 2001. This was also the first occasion on which the company publicly announced its mission, vision and values reflecting the changes in the operating environment and ownership.

Uponor's vision revealed a future emphasis on residential and commercial building and the related housing technology. This was no great surprise, as it was an area common to both Uponor and Oras and did not contradict the objective of improving the Group's profit margins. Housing technology's growth rate had been faster and the profits larger than in the Group's municipal infrastructure branch.

According to its mission, Uponor provides solutions for sound living. This motto crystallised the main guidelines for product differentiation and how Uponor intended to differentiate from its competitors. According to market research, people were becoming increasingly interested in comfortable and healthy living and supported environmentally friendly views. The new strategy was Uponor's response to this mega trend.

According to the Group's brand strategy, the emphasis should be on methods rather than products. Uponor moved closer to its end-users. Builders and installers were not so much interested in the technical specifications than in finding a comfortable and reliable housing solution. Hence, Uponor used its own and its partners' products to compile complete solutions for builders. A full system solution would include radiant underfloor heating, optimal energy savings, plumbing (water and wastewater), clean air, IT communications and fire safety. And installation, maintenance, funding and insurance could be received from the same desk.

However, the publicly announced strategy did not include Uponor's internal objectives. These included increasing its operating profit from below 10% to 15% and an organic increase of 10% in annual net sales.

These were bold objectives but there was potential for profitable growth. Europe's somewhat gloomy markets were compensated by the thriving business in North America. This business also offered other interesting prospects. Commercial building was expected to experience steadier growth than residential building. This would help alleviate dips in residential building trends. Demand for maintenance and renovation services would increase everywhere, as well as the focus on environmentally friendly solutions. Demand for wastewater systems in sparsely populated areas was beginning to show signs of growth and Uponor had some very good solutions to offer. Beneficial innovations were being developed in Uponor's R&D processes: electronic IT and control systems, sprinkler systems and Uposun solar panels. Uponor's solutions had been enhanced with innovations facilitating installation and improving the pipes' technical specifications. Professional installers had taken a liking to Uponor's Quick & Easy fittings, and Uponor's fully sealed, airtight water pipes would transport potable water, even through contaminated stretches of earth, if necessary.

Uponor's stand in 2002.

Eliminating loose ends

In addition to improving its business operations, the financial objectives set in 2001 forced Uponor to engage in a critical review of its business. Some units were making a profit only during peak periods. It had been decided that hopeless cases could be divested but, in practice, any unit could be regarded as an opportunity to gain more market share with potential for expanding into a profitable enterprise, provided sufficient investments were made in development work and patience was exercised in waiting for an opportunity to strengthen its market position. However, following the new strategic guidelines, it was decided by early 2002 that all subsidiaries manufacturing utility pipes which could not achieve the set goals, based on their current market shares, would be divested.

Prior to 2003 only Uponor's property businesses had been divested.

Consolidation had been anticipated in Europe, and some major changes had already been witnessed. Of Uponor's competitors, the Belgian ETEX had acquired Glynwed in a major transaction and Wavin had acquired the Norwegian Icopal, also pursued by Uponor. Acquisitions were aimed at achieving rapid and significant growth or gaining a considerable share of the local market. None of the bigger companies seemed to have any interest in the smaller companies or modest market shares. Uponor had made some preliminary queries about possible buyers for its infrastructure solutions plants in Central and South Europe, but the results were discouraging. The likelihood of divesting them all at once was minimal and finding a suitable buyer separately for each company would require a lot of resources.

However, there were other ways to improve efficiency. The underlying concept was to eliminate overlapping operations and cut down the number of brands and distribution channels. This was the complete opposite of the previously adopted multi brand – multi channel approach. Fifteen years earlier, different brands and numerous channels had maximised growth in Central Europe and provided a peaceful solution to the Group's internal conflict. This time, the Group's management discovered that due to recent changes in the operating environment, the model's weaknesses outweighed its benefits. Maintaining several brands was unnecessarily expensive.

Of course, the brands were not abruptly limited to one. In 2001, Uponor was designated the Group's master brand while the strongest brands – Wirsbo, Unipipe and Ecoflex – remained independent sub-brands and system names. Velta and Polytherm, the large sales organisation in the German speaking Europe, continued as independent units.

In Germany, the idea of combining brands and channels met strong opposition. In a meeting of the local salespeople held in the winter of 2001, a unanimous statement was made. Heino Stüfen, a respected Velta chief, acted as the primus motor. The meeting concluded that merging Uponor Rohrsysteme with Wirsbo-Velta GmbH would be irrational and result in modest savings and huge losses.

These greetings from the German salespeople were not the only criticism of the management's plans. All through its growth phase, Uponor had allowed the acquired companies to continue under their own leadership using their own traditional systems, organisations and business culture. Headquarters from Finland intervened only when problems arose and the subsidiaries were unable to tackle them alone. Uponor's managers abroad had become used to the fact that headquarters did not interfere with their operations. Pekka Paasikivi later cited a metaphor he had once heard about Uponor: "I heard someone say that Uponor is a real nice guy, first they buy your car and then they give the car and keys back to you."

The decentralised operating model had enabled light central management and independence for the management teams of the divisions and subsidiaries. On the other hand, the Group had no common operating culture with shared values and codes of conduct. Now the time had come to create them. Defining and implementing a common company culture with shared values required time and energy.

Pekka Paasikivi and Jarmo Rytilahti had met in the winter of 2003. They concluded that it was time to rejuvenate the Group's management. Rytilahti wished to take advantage of his option to retire at the age of 60.

Heino Stüfen, Velta's long-standing managing director.

Accelerated structural change

Jarmo Rytilahti's successor was nominated in the winter of 2003. Jan Lång had experience in international management from his earlier post with Huhtamäki Group, the world's leading packaging company. Looking back on his appointment, Jan Lång noted that the expectations were clear from the beginning. "The first priority was to enhance profitability; this was the signal the Board of Directors already gave during the interviews. The second priority was to increase the Group's overall efficiency."

Reorganising the Group was Lång's first task. Traditionally, each division had its own board, but Lång dissolved these and established a new executive committee. The new executive committee had five members: Jyri Luomakoski (CFO), Kari Norbäck (Director of Business Development), Dieter Pfister (Head of housing solutions in Europe), Jim Bjork (Head of North American businesses) and Jukka Kallioinen (Head of the European infrastructure division).

To gain a broader perspective, Lång toured all units of the Group. "The first couple of months I spent going over the company, getting to know the people, the business, the operations. I needed to understand what the success factors in this business were."

Jan Lång was appointed CEO in August 2003 and the new strategy was published before Christmas. Traditionally, strategic planning was reserved for the management group, but Jan Lång honed his new strategy together with Deputy CEO Jyri Luomakoski. The two men calculated Uponor's optimal financial profit within a three-year time frame and the organisational structure necessary to achieving it. No time was wasted and the process resulted in an articulated plan of action. Excel sheets created as part of the process clearly showed that optimal results could only be achieved by divesting the least profitable businesses, i.e. utility pipe manufacturing in all markets, excluding the Nordic countries and the UK.

It was self-evident that these structural changes could not be realised without expenses. The total budget was about MEUR 55. A majority of this budget was recorded in the fiscal year 2003, weighing the financial result down to the 1985 level. In the future, financial targets were set much higher. These targets became publicly known when the December 2003 strategy was presented and Uponor's financial targets were publicly announced for the first time in its history. The published numbers included organic annual growth of over 5%, a profit margin of over 12%, return on investments of over 20% and an equity ratio of a minimum of 50%. Half of the annual profit would be distributed in dividends.

The published figures for growth and profitability were more modest than the Group's earlier internal targets because the reorganisation process was heavier than had been initially anticipated

Jan Lång, CEO.

two years before, and the operating environment showed signs of becoming more of a challenge. A declining trend in building and construction was feared in all markets.

In accordance with its new strategy, Uponor focused its operations on areas where it already had, or could, achieve a leading position. Reviewed from this perspective, the most promising business areas included plumbing, ventilation and cooling systems.

Some of the ongoing development projects were defined as outside the core business area. "One example was pipe renovation. This is related to installation engineering and is based on a very different functional model from our core areas", Jan Lång explained.

Towards the end of Jarmo Rytilahti's era in 2003, Uponor had divested its sewer businesses in Germany and Poland and had also finally succeeded in finding a buyer for Uponor ETI in the USA. Divestments were continued according to Lång's reorganisation programme. The divestment process was extensive, because there were several units all over Europe and North America.

In the winter of 2004, Dieter Pfister, one of the management team members, acquired Uponor's cable and plumbing protection pipe business in Germany and began afresh as a businessman. In the autumn of 2004, two of Aldyl's gas pipe plants in the US were divested. The purchasers were mainly the same investors who had acquired ETI the year before.

Jyri Luomakoski, who had closed the deal, claimed that Aldyl's final balance statement was actually not that bad considering its profitability, which had decreased from its previous, better years. The company had also had its share of bad luck. "One time we received a whole freight car full of erroneous raw material. We used it for gas pipes which then cracked when the temperature dropped below freezing. It turned out that a plastic bag company had received our gas pipe raw material and we had landed the material for plastic bags. The raw materials shared some features, which explains the mix-up. But we had to recall the sold pipes and exchange them for new ones. Luckily, the raw material supplier agreed to bear the total financial burden for the mix-up."

In 2004, infrastructure pipe factories in Spain and Portugal were closed. These factories employed 120 workers. The small Furuflaten plant in Norway was sold through MBO in 2004. Another subsidiary sold to its executive management was Uponor France, the former RYB, in 2005. In the last seven years, the company had made a positive result only once, in 2000 during the peak in communications cable pipes. As part of the new efficiency enhancement programme, factories were closed down in Sweden and Poland as well. In Finland, the water and sewer pipe renovation business, defined as external to the core businesses, was divested through a MBO. Uponor Anger, Uponor's last manufacturer of infrastructure pipes in Central Europe, was sold in the spring of 2006. The factory employed 80 people in Germany and the Czech Republic.

The result of the reorganisation was a new, lean and compact Uponor. In 2000, Uponor had manufactured pipes for practically

Wirsbo's PEX-a production lines in Uponor's biggest production facility in Sweden.

Jyri Luomakoski, CFO and Deputy CEO.

all purposes; six years later Uponor concentrated on housing solutions. Other pipes were sold only in the Nordic countries, the UK and in Ireland. At the turn of the century, the Group had 45 production facilities in 15 countries. When Uponor Anger was sold, there were 17 factories in 9 countries. In total, the closed and divested units had employed over 1,000 people. Thus, before its reorganisation Uponor had employed over 5,500 workers, whereas now the number of personnel was 4,200.

On turnover, the impact of structural change was less severe. Turnover had been EUR 1.1 billion before the change was implemented. This was surpassed in 2006. In four years, organic growth replaced what had been lost in divestments.

Profitability, the actual financial indicator of the programme's success, saw even better development. The Group's financial performance took a positive turn in 2004 and practically all of the financial targets were achieved in 2005, one year ahead of time. Profitability was measured against operating profit, but a more significant improvement was witnessed in net profit when the debt decrease programme implemented throughout the 2000s finally pushed the Group's gearing ratio below zero, enabling a shareholder-friendly dividend policy within the solvency objectives.

However, the positive development was not entirely due to discarding the non-profitable businesses. Success was boosted by unexpectedly high demand, especially in North America, where business had been much livelier than anticipated in 2003. Improved

Jim Bjork held several leading posts in Uponor's North American businesses since the beginning until the year 2006.

efficiency in housing solutions contributed to the improved performance as much as, if not more than, the divestment of municipal infrastructure pipe businesses.

Supplier and logistics chains were developed and production allocated to larger units serving a larger geographical area. Composite pipe production in four facilities was combined into one factory in Germany. Furthermore, Uponor discontinued its production of inexpensive and technically inferior PEX-b and PPr hot water pipes. Although they had been popular in East Europe, the future aim was to focus on the company's core strengths.

One Unified Uponor

In view of the market situation and our business model, it is evident that integration – and not merely on the national level, but European level, if not even wider – is the key to sustainable business development exploiting the competence and skills we posses as a whole." This is how Jan Lång worded the launch of a new programme, the One Unified Uponor.

The tools comprised a new organisational model, business functions covering the whole Group, a single brand and an ERP project.

Uponor's new organisational structure was implemented in March 2004. In a sense, the new organisational structure was reminiscent of the company's roots because divisions were made according to geographical areas, much like during the early years of the company. Housing solutions and infrastructure solutions divisions were replaced with four regional organisations in Uponor's traditional strongholds: the Nordic countries, Central Europe, North America and Europe – West, East and South.

According to Jan Lång, the objective of this structural change was to improve decision-making efficiency and provide unobstructed passage for improvements targeted at the Group as a whole. At the beginning of 2004, three new executives were hired to launch the reorganisation: Paula Aarnio (Executive Vice President, Human Resources), Lauri Rintanen (Executive Vice President, Supply Chain) and Georg von Graevenitz (Executive Vice President, Marketing). Corporate functions included human resources, supply chain leveraging, marketing, technology and development, and finance and administration headed by Jyri Luomakoski. After Kari Norbäck resigned, no new Executive Vice President for technology and development was appointed until 2006. The executive committee's main focus was on reorganisation and the single brand strategy.

In 2006, the focus was shifted and committee members rotated to new positions. Jukka Kallioinen, who had previously been a regional manager, was appointed head of technology and development. After Uponor's branding reform had been completed, marketing lost its director when von Graevenitz was appointed regional manager. The housing solutions business of Europe – West, East, South was divided in two between Heiko Folgmann (Germany) and Fernando Roses (Spain), with the UK and Irish infrastructure business being the third part. Anders Tollsten (Sweden), who had previously headed the Nordic region, was appointed the head of Uponor North America, following Jim Bjork. In 2006, Sebastian Bondestam was appointed Uponor's new head of the supply chain.

To the outside world, Uponor's integration was evidenced by the single brand. Beginning in 2006, all of Uponor's subsidiaries, excluding the OEM, Hewing, began to operate under the Uponor

Rui Amandi, the long-standing manager of Uponor's Iberian operations, and his successor Fernando Roses (seated on the right).

brand, although some of the old system brand names remained, as part of the product labels.

A five-year transitional period had preceded the implementation of the single brand. Prior to its final implementation, a survey was conducted among 200 customers and employees. It showed that customer attitudes were generally more positive than had been expected, and among employees nearly everyone agreed that the 235 product families and 1,200 registered trade, brand and system names and logos found in the databases were somewhat overwhelming. With a single brand, all resources could be centred on one brand with maximal visibility and support.

Chairman of the Board of Directors, Pekka Paasikivi, saw a significant advantage in this development: "When Uponor had a stand at an industry fair in 2003, you couldn't tell whose stand it was. Those situations truly reveal whether a company has any message or not."

Along with the brand reform, Uponor's visual appearance was modernised and the new abbreviated slogan read "simply more". The new corporate ideology was, "We partner with professionals to create better human environments". A pronounced part of the mission was that Uponor considered its most important customers to be professionals in construction and building: installers, engineers, designers, architects and contractors. Products were shipped to wholesalers but the focus was on end-customers, the people who decide what to order from wholesalers.

According to Jan Lång, a single brand offered more business opportunities. After the reform, Uponor's complete product portfolio was available to sales personnel without any internal limitations. "Now all you need to do is select the best Uponor system. You do not need to consider whether it's Wirsbo or Unipipe; the solution can be based purely on market needs."

Wirsbo was a widely disseminated sub-brand with a strong hold on the Nordic countries and North America. In Germany, the brands and related organisations were extremely diverse and, in Jukka Kallioinen's view, the most severe criticism of the single brand strategy could be expected from there. "This resistance to change is not the result of people trying to shoot down the aspirations of others out of

Anders Tollsten started his career at Uponor as the regional manager of the Nordic countries. In 2006, he became regional manager of the North American operations.

spite. They genuinely believe that their current operational system is better." However, Uponor could not afford to leave the Germans out. "There is so much competence, resources and people."

At the beginning of 2008, Jan Lång was confident that the advantages of a single brand would become clear to everyone, but agreed with Kallioinen that learning something new is always bidirectional. "We are by no means ready. This is a long process. But I think we have taken the right path. Think about Velta, we have been able to take advantage of the competencies accumulated in its organisation during the years."

Dismantling the system of sub-brands and the related organisations and supportive functions enabled HR and R&D projects covering the whole Group. It further enabled the launch of a comprehensive ERP project in 2004. There is a variety of projects named "ERP projects" but, in Uponor, the ERP project was implemented to discover an efficient way of controlling the supply and distribution chains of its nearly 100,000 different products. When the project was initiated under Jyri Luomakoski's direction, over 30 different ERP-like systems were in use. The objective was to narrow these down to 1.

By 2008, several units had implemented the system. Jan Lång sees this as an important intermediary goal on the road to one united Uponor. "Our aim is to find a comprehensive solution. Or integrate, as we have been doing. During the past year we have accelerated the speed of this, and will continue to do so in the coming years."

In search of growth

Uponor defined its strategy, which was published in 2005, through three main pillars: corporate brand, operational excellence and growth. Until then, the emphasis had been on the first two. After 2005, the focus was shifted to growth. Uponor's goal in 2003 was to achieve an average growth of 5%. Growth in core business areas already exceeded 5% during the reorganisation, and in 2006 Uponor's net sales – excluding divestments – grew at an annual rate of nearly 15%. Financial targets had to be reviewed. The new target for operating profit was set at 15% and for average annual growth at 6%.

In 2007, Uponor's profitability remained on the same level as in the previous year and – measured in Euro – created a new record three years in a row. The increase in turnover, however, fell close to the set target, since global demand for building products plunged as a result of the US sub-prime mortgage crisis. In Europe, the decrease was even steeper than in the United States. Ironically, Uponor recorded the best year in its history while being compelled to give its first ever profit warning. This experience proved that reducing Uponor's average growth targets for a complete trend cycle was well-founded. The Group had to find growth in an industry slow to expand yet vulnerable to swift changes.

In all of the published commentary, Uponor's growth expectations were not considered sufficient. Some called for faster growth through acquisitions – as Wavin and Geberit had done. Uponor had already taken that route with an annual growth rate of tens of percents, but in 2008 no one wished to return to the old days. In the 1990s, many large plastic pipe companies were still connected to their raw material suppliers. In the beginning of 2000, nearly as many were supported by a capital investment company. They had gained their shares using debt as leverage, raised the general price level of the companies and placed the companies that had participated in the structural reorganisations in debt. Pekka Paasikivi, Chairman of Uponor's Board of Directors, supported the view that carefully managed growth was better than resorting to bold moves that could ruin any hopes of positive profit performance for years to come.

Uponor's first organic growth dimension was geographical. It attempted to penetrate markets where its market share was modest although demand for radiant underfloor heating systems and plumbing solutions should exist, such as the large West European countries France, Italy and the UK. Another geographical possibility comprised the developing markets of East Europe, in Poland and Russia, in particular. Russia was not affected by the US sub-prime mortgage crisis. There, building and construction increased at an annual rate of 15% to 20%. By the year 2007, Uponor had established a network of over 20 sales offices in Russia. Markets were created from scratch, in much the same way as in North America 15 years earlier.

Uponor has supplied heating and cooling systems to the stores of several leading German car manufacturers.

Uponor's product profile has traditionally focused on single-family housing solutions, although PEX and composite pipes can be installed in larger commercial buildings as well. The first breakthrough in high-rise buildings was in Spain and Uponor did its best to spread the trend. In 2007, plumbing and heating systems installed in high-rise buildings generated 20% of the Group's turnover. At the beginning of 2008, the 18th Uponor Academy was inaugurated in Germany. This training and education centre intended for customers was the first to concentrate on high-rise solutions. "It is our strong belief that radiant underfloor heating systems bring added value to living and life. Demand in the high-rise sector will increase as soon as our message is received. We will work intently on this in the coming years," said Jan Lång.

Another of Uponor's strategic growth projects is cooling systems. In 2008, these systems were not yet more than a promising prospect. However, they are well-founded on the Group's core competence. The same pipes that are used for heating can be used for cooling. It is also possible to choose between just the cooling system or both – the same system can be used for heating in the winter and cooling in the summer. According to Uponor, underfloor cooling systems are more comfortable, healthier, less expensive and more environmentally friendly than the traditional air conditioning solutions. The sector is expected to grow to the same size as underfloor heating markets in a decade.

In Jan Lång's opinion, Uponor's technological growth expectations are closely connected to the company's core competence. However, he does not fully exclude the possibility of new offerings. "This cannot be the end. There are always new challenges and new demands. We must retain our ability to change in the future as well."

During its history, Uponor has changed course and seized the moment. It has placed its bets wisely, on PEX and composite pipes, for example. Jukka Kallioinen, head of Offering and Development functions, sees no reason for Uponor's luck turning in the future. "Now, conserving energy and having environmentally friendly solutions is in the spotlight – our timing is perfect. That's the way it goes. Our heating systems are compatible with new energy sources, such as geothermal heat and solar energy. This presents us with a significant opportunity. We still have some technical and commercial issues, but I am confident that these will be solved in time."

Uponor's internationalisation

There has been much research on companies extending their operations abroad. Theories have been formulated to explain how and why companies seek growth abroad, and what the keys to success are.

Not very surprisingly, one of the defined key factors is a sound argument for expanding abroad. International operations must benefit the company and its owners. Another key factor is holding something special, something providing superior or competitive edge even though distances increase expenses and the competition has the advantage of local knowledge.

Uponor had a sound reason for extending its operations abroad. In the domestic market, growth was limited and additional growth had to be sought abroad. The applied model was also very straightforward. Exporting pipes or increasing volumes of exported fittings were both unprofitable options. There were only two viable alternatives: either build your own production facilities abroad or gain production through acquisitions.

Once it had become clear how difficult it was for new actors to create markets, acquisitions became Uponor's main – and often the only – tool for gaining access to international markets.

Expanding abroad benefitted Uponor's owners. As for Asko, Uponor's prospective growth was the only prospect available. When Uponor was taking its first steps into Europe, Asko had been compelled to return, beaten. As for Neste, the benefits were more obvious. Uponor became a strategically important customer of Neste's production plants around Europe and, furthermore, a partner in the R&D of its plastic, raw material. Downstreaming was so important to raw material suppliers that, in the USA, plastic pipe businesses ended up being totally controlled by their raw material suppliers. Nearly all of Uponor's European competitors were also participating in a similar episode of extremely close collaboration with their raw material suppliers; only plastic pipe companies partnering with a raw material supplier became large international companies.

Whether it was a prerequisite for growth remains under debate, but it certainly was an asset. For Uponor, Neste lent credibility and provided access to places otherwise inaccessible to the fairly unknown new actor. Neste also agreed to support Uponor's acquisitions financially, when its growth was in danger of freezing. Furthermore, Neste supported Uponor's growth aspirations from its beginning until the economic recession in the early 1990s. Neste also had an impact on the direction of growth. Neste's strategy for its chemical industry guided some of Uponor's acquisitions. In Uponor, it was claimed Neste created a certain "state of volition" and without it Uponor would probably not have expanded at the rate it did.

However, Uponor did not gain ground internationally using Neste's funds, but invested funds raised in the domestic market. At first, Uponor's target was to gain market control and dominate the Nordic markets. These targets were achieved, in the main.

Uponor inherited many success factors from Upo-Putki. Upo-Putki had invested in R&D, had experience in international trading and was familiar with neighbouring plastic pipe markets. Competence which could be relied upon formed the basis of a bold strategy. However, the most important success factor is most likely the fact that Upo-Putki was one of the Nordic countries' most profitable plastic pipe companies in the early 1980s. And it was certainly among the large actors which could take the initiative. Figuratively speaking, Upo-Putki's machines were in action while others were still having teething troubles.

Similarly, Uponor received the majority of its turnover from operations in Finland, Sweden and Denmark for a very long time. Uponor was able to control and dominate – in accordance with Heimo Eloranta's "Kondom" strategy – its domestic Scandinavian markets. It could also finance the next step; extending its operations abroad. However, control over international markets was rarely successful, and dominance was completely out of the question. In Europe, far from the familiar domestic markets, the risks were greater, and Uponor had to pay the price of experience.

However, Uponor had the advantage that its owners were patient, giving the company time to learn. Neste was more interested in supplied tonnage than Uponor's profit margins. It never asked Uponor to withdraw from Central Europe – not even when several years were spent "in the red".

Uponor grew nine-fold during the period between 1982 and 1992. It was an opportune period to expand through acquisitions. Globalisation began to quicken its pace in the 1980s. World trade was freed up, Europe integrated, money market regulation was dismantled, transportation and communications enhanced – and most importantly, it was an excellent period for buying plastic pipe companies. The plastic pipe industry had until now been based on local, small-scale production. Several small companies were for sale, yet the largest reorganisers were not on the move. By the late 1990s, reorganisations by investment enterprises were on a completely different price level, and none of the good companies were sold without competitive bidding.

Uponor acquired dozens of companies all over Europe and North America. Some acquisitions were good and some not so good. Good and bad experiences alike increased Uponor's competence and market intelligence. When these were combined with a determined search for growth and a Board of provident Directors, the result was a jackpot in 1988. The acquisition of Hewing and Wirsbo – two hot water pipe suppliers – provided Uponor with a line of business that grew without any further need for acquisitions. During 1997 to 1999, the acquisition of Unicor completed the foundation for Uponor's current operations.

Being successful on the international markets requires a competitive product portfolio. Uponor possessed advanced technical competence and this was enhanced and maintained through successful R&D. Uponor successfully launched several new products and systems which won the trust of its customers and secured a position for Uponor as a technological leader in the field.

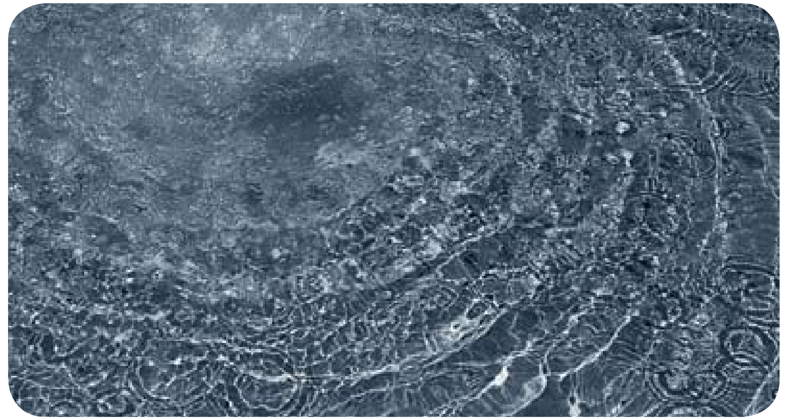
Uponor's acquisitions included companies with low market shares and profitability problems. These companies were revived by upgrading them with new technology, at times more successfully than at others. A successful example is Uponor Anger, which seemed ready for liquidation before rising from the ashes thanks to Uponor's rotation moulded manholes. However, there were many examples of unsuccessful attempts, in France and in the USA among others. If the markets did not appreciate the advantages of new technology, there was no demand. When everyone was used to concrete sewers, Ultra Rib was too much of an innovation to arouse interest.

Furthermore, it was noticed that it was difficult to get your message across when you had no marketing power to back you up. In the Nordic countries and in Germany, Uponor was a well-known, reliable supplier with professional sales personnel and a loyal customer base. In France, Uponor had nothing. The same products which sold in the Nordic countries like hotcakes, did not make French mouths water. Training was one method of creating demand, but technological innovations alone would not have taken Uponor far.

During the 2000s, Uponor reorganised and consolidated its business at accelerating pace, with excellent results. Corporate functions have become more efficient, the corporate brand is stronger and unprofitable businesses have been discarded. The restructuring programme that had lasted six to seven years had boosted Uponor's strengths by 2008, with significant prospects for future growth in housing solutions.

Before its reorganisation, Uponor was dispersed. Its various operating cultures and systems rendered many activities unnecessarily complicated. During the acquisition periods of the 1980s and 1990s, its operating model based on increased independence from subsidiaries and minor interference by central management had minimised problems otherwise caused by great distances. The subsidiaries continued their operations as before, without Group expenses that would burden their cost structures.

What constitutes Uponor's superior competitive edge, what is the key to its success? Perhaps it is the combination of a bold strategy, profitable domestic markets, optimal ownership, perfect timing, sound technology, the ability to learn and flexibility in implementing the necessary changes. Or, if required to give a short answer, you could present Aukusti Asko-Avonius' recipe for success: Anticipate the future. Act – don't wait to react. And be the first, don't let the others catch you up.



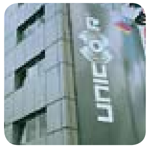






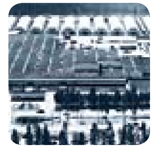









Here you will see 90 windows to the history of Uponor Corporation. They tell the story of an international organisation with a colourful 90-year manufacturing history. The foundations were laid by Aukusti Asko-Avonius and his innovative entrepreneurial spirit which helped Asko and Upo to become two of the great Nordic enterprises.

In the 1980s, the company was taken under investor control and developed into a conglomerate of ten different branches. Asko aimed to make its way abroad through furniture and Upo through household appliances. In the 1990s, the conglomerate was dismantled and resources were focused on plastic pipes. This proved to be a wise decision. In 2008, Uponor is the global market leader in its business segments.