Jenoptik (A):
The famous Zeiss in ruins

In late summer 1991 the management of Jenoptik GmbH, legal successor of the once famous collective combine “VEB Carl Zeiss Jena”, faced difficult decisions. The company itself was a mess: 27,000 employees, an estimated revenue of 22 million DM (about 800 DM per employee), no marketable products, out-of-date machinery, to name but a few of the problems. On the other hand, Lothar Späth, managing director of Jenoptik had a vision: He wanted Jenoptik and Jena to develop after the model of the Silicon Valley. And he had received a lot of money to realize this vision, in sum 3.1 billion DM. But was this enough to cope with the tremendous problems? And how should the money be used?

The Company’s History

The roots of today’s Jenoptik AG date back to the year 1846, when Carl Zeiss, one of the pioneers of the optical industry in Germany, established an independent optical workshop in Jena, specializing in fine mechanical optometry. A milestone in the history of the company – named after its founder Carl Zeiss – was the beginning of the cooperation with Ernst Abbe, a professor of physics at the University of Jena, in 1866. The combined efforts of Zeiss and Abbe led e.g. to the development of the calibrated microscope, which was produced by Carl Zeiss after 1872.

After the death of Carl Zeiss, Abbe inherited a major share of the company. As heir and successor he established the Carl Zeiss Foundation, primarily to secure the long term existence and independence of the company. The endowment supported non-profit projects as well as scientific research at the University of Jena. Additionally, Ernst Abbe revolutionized manage-
ment by introducing his own social and political ideals: a nine hour workday, paid vacation, paid overtime and profit sharing for the employees. After Ernst Abbe's death in 1905, the complete conglomerate merged into the Carl Zeiss Foundation.

During the first two decades of the twentieth century Carl Zeiss grew rapidly and became one of the world's most prestigious manufacturers of precise optical and mechanical solutions for industry, science, medicine and the military. Important products of Carl Zeiss were measuring instruments, photo cameras and lenses, binoculars as well as astronomical and medical instruments. After 1933, the company enjoyed a second period of high growth due to the increasing amount of orders from the German military. Not only because of its role as an important supplier of the German army, the Zeiss works were one of the principal industrial targets that were bombed and severely damaged during World War II.

The headlines of the New York Times on 13 April 1945 read: "The famous Zeiss plant in ruins". In fact, the business tradition of Carl Zeiss had come to a halt when Jena was occupied by US-American troops in April 1945. But the American occupation of Jena only remained an episode because – according to the agreement between the allies and the Soviet Union concerning the division of Germany – Jena belonged to the Soviet Sector of Germany. The Americans, however, did not like the idea of handing over a technologically advanced company like Carl Zeiss to the Soviets for free. Therefore, operating under the slogan "We take the brain", US-troops transported 84 managers and scientists, a large number of documents as well as specialized machines to the American sector of Germany in June 1945 when they had to withdraw from Thuringia. In early 1946, these former employees of Carl Zeiss founded a new company also named Carl Zeiss in the Swabian town of Oberkochen in the American Sector of Germany. This newly founded company was meant to continue the business tradition of Carl Zeiss. Nevertheless, Carl Zeiss in Jena also continued its operations. On 1 July 1948, the company was nationalized and renamed "VEB Carl Zeiss Jena". The Carl Zeiss Foundation was likewise nationalized and integrated into the "VEB Carl Zeiss Jena".

Thus, after the end of World War II, two companies named Carl Zeiss came into existence, namely Carl Zeiss Oberkochen (West Germany) and the VEB Carl Zeiss Jena (East Germany). These two companies developed very differently in the years following the war. While Carl Zeiss Oberkochen became one of the major players in the optical and fine-mechanic industry on Western markets, the VEB Carl Zeiss Jena played a similar role on Eastern markets. Although Soviet dismantling had created serious difficulties in the first years following the
war, the VEB Carl Zeiss Jena developed into an exceptional production jewel in the GDR - mainly due to its highly competent and skilled workforce. Over the years there were constant discussions between Zeiss East and Zeiss West regarding the use of the brand name "Carl Zeiss". Finally in 1971, an agreement was reached: The optical factories in Oberkochen, which belonged to the Carl Zeiss Foundation in Heidenheim (West Germany) would use the label "Carl Zeiss" on markets in the Western hemisphere whereas the VEB Carl Zeiss Jena would market its name and products on the Eastern socialist markets.

After 1965, the VEB Carl Zeiss Jena became the core of a newly founded collective combine. This collective combine incorporated all 25 enterprises in the optical industry of the GDR. Over the years, the collective combine VEB Carl Zeiss Jena developed into one of the largest and most prestigious collective combines of the GDR with up to 60 000 employees. Nevertheless, the collective combine VEB Carl Zeiss Jena faced problems typical of socialist economies. Among other things, raw materials for production were seldom available or lacked the necessary quality. In order to meet the production plan which was determined by political institutions, the collective combine VEB Carl Zeiss Jena was forced into an almost complete vertical integration. The value added of the combine amounted to around 95 percent. One employee remembered:

"We produced our binoculars down to the last detail – with the exception of the leather case - and that is because the farms and the bulls did not belong to us."

Like many other enterprises in the GDR, the collective combine VEB Carl Zeiss Jena was widely diversified. It produced more than 1000 different products ranging from microscopes for students to elements of the navigation system of the Soviet SS-20 nuclear missiles. Similar to many other collective combines in socialist countries the collective combine VEB Carl Zeiss Jena became over the years a gigantic conglomerate - with a most cost intensive administration. This was also recognized by the directors of the collective combine. On 5 August 1988, Wolfgang Biermann, general director of the collective combine after 1975, wrote to Erich Honecker, Secretary General of the Central Committee of the SED, the leading socialist party in the GDR:

"From vague estimates it can be anticipated that, as soon as the general statistic work disappears - work which does not increase the national income, but only increases the consumption of paper -, about
3000 to 4000 workers can be laid off or made available for productive work in the collective combine."

By western criteria it was estimated that the collective combine VEB Carl Zeiss Jena – like other enterprises in East Germany – even had an employee surplus of approximately 60 percent.

The VEB Carl Zeiss Jena in 1989 and 1990

Between 1989 and 1991 the socialist systems in Central and Eastern Europe collapsed. This initiated a complete restructuring of the economies of these countries from a centrally planned towards a market system. This transition, however, was not an easy task in any country involved. In fact, it required simultaneous reforms in many areas and posed a problem for individuals as well as enterprises. The enterprises in East Germany faced particular problems. They only had seven months - from the fall of the Berlin wall in November 1989 until the economic, monetary and social union on 1 July 1990 – to adjust to the market system and to prepare for competition on the world market. This was a difficult if not impossible task, and it soon became obvious that East German enterprises faced tremendous problems.

The collective combine VEB Carl Zeiss Jena was also deeply affected by the radical changes in its environment. The Central and Eastern European markets – the principal sales area of the collective combine until 1989 – collapsed almost completely. Two main factors were responsible for that: First, the demand in the Central and Eastern European countries declined dramatically after 1990 due to the economic collapse there. Secondly, the manufacturing costs for East German products rose heavily after the monetary union. The interstate agreement on the creation of an economic, monetary and social union between the two German states resulted, among other things, in wages being changed in a ratio of 1:1 ("DDR-Mark" to DM), under pressure of the trade unions, and debts and liabilities in a ratio of 2:1. In view of the fact that a hitherto applicable exchange rate of 4.4 East German Marks for 1 West German Mark reflected the difference in productivity of East German enterprises compared with West German companies relatively well, the monetary union resulted in a drastic increase in costs for East German enterprises. This had a very negative effect on their competitiveness on both the Western and Eastern European markets because most of the East German en-
terprises could no longer compensate for the poorer quality and technology of their products by charging lower prices.

The markets in Central and Eastern Europe, however, were not the only ones to collapse. The same was true for the military sector, a second important customer segment of the collective combine VEB Carl Zeiss Jena. Due to the incorporation of the East German army "Nationale Volksarmee" into the West German army the military equipment of the GDR was sold or scrapped because the systems of the "Nationale Volksarmee" were not compatible with NATO standards. Thus, the military products of the collective combine VEB Carl Zeiss Jena were no longer saleable. The worldwide reduction of military power in the early 1990s made this situation even worse. In addition to these external problems, the collective combine also faced internal deficits. Among other things, its production processes did not adhere to world standards, and many products were severely outdated and could not be sold on the world market. This led to heavy losses, and quite naturally, liquidity problems of the collective combine in 1990.

The privatization of Jenoptik Carl Zeiss Jena GmbH

Considering these problems, the collective combine VEB Carl Zeiss Jena was facing a rather uncertain future. On 10 July 1990, it was transformed into Jenoptik Carl Zeiss Jena GmbH and the Treuhandanstalt, the German privatization agency, became its single owner. The newly founded company incorporated 13 of the former 25 enterprises of the collective combine. 30000 people were still employed by this company. The 12 remaining enterprises had been turned into independent companies. The Treuhandanstalt as the new owner took over the task of supervising the company, of hiring managers as well as consultants and of assuring liquidity. The main goal of the Treuhandanstalt, however, was the privatization of the company, not its restructuring.

The most obvious way of privatizing the Jenoptik Carl Zeiss Jena GmbH seemed to be a takeover by its West German sister company, Carl Zeiss Oberkochen. This would also resolve the long standing dualism between Zeiss West and Zeiss East. The quick and complete takeover of the Jenoptik Carl Zeiss Jena GmbH by Carl Zeiss Oberkochen, however, held the threat of a possible shutdown of the non-profitable production plant in Jena. Since the region
around Jena was economically completely dependent on the Jenoptik Carl Zeiss Jena GmbH, a closing of the production site and a lay-off of 30,000 employees would have endangered the future economic development of the whole region. Therefore, the Free State of Thuringia – one of the 16 federal states of Germany – was willing to take over a minority holding of 20 percent of the Jenoptik Carl Zeiss Jena GmbH. This opened the opportunity for the government of Thuringia to influence the changes taking place in Jena. Finally, on 25 June 1991 an agreement was reached between the Treuhandanstalt, the Free State of Thuringia, the Jenoptik Carl Zeiss Jena GmbH, and Carl Zeiss Oberkochen (Appendix 1).

This agreement led to the demerger of the Jenoptik Carl Zeiss Jena GmbH. The core business areas – i.e. those in the fine-mechanic and optic industry including the necessary production facilities, real estate, equipment and 2,800 employees – were to be integrated into the newly founded Carl Zeiss Jena GmbH, whereas the remaining business areas with 27,000 employees were assigned to the Jenoptik GmbH. The Jenoptik GmbH also became the legal successor, and through that the holder of all rights and duties, of the former collective combine. From then on, the Free State of Thuringia was the single owner of the Jenoptik GmbH whereas the Carl Zeiss Jena GmbH was owned by the Jenoptik GmbH (49 percent) and by Carl Zeiss Oberkochen (51 percent) (Appendix 2).

Through this agreement the Carl Zeiss Jena GmbH received obviously the "heart" of the former collective combine while Jenoptik awaited an uncertain future. Many employees who were taken over by Carl Zeiss Jena felt that they were moving "upwards" - not only because the premises of Carl Zeiss Jena were situated on the hills around the city of Jena, but also because their future seemed to be economically much more secure.

In 1998 retrospectively, one can say that the situation of the Carl Zeiss Jena GmbH was not as good as it appeared. The industry environment in the fine-mechanic and optic industry in which Carl Zeiss Oberkochen – since 1995 single owner of the Carl Zeiss Jena GmbH – operated turned out to be very difficult and cyclical. In the business year 1997/98 the group achieved a revenue of about 3 billion DM and a profit of 15 million DM. The Carl Zeiss Jena GmbH contributed a revenue of about 450 million DM and a loss of 20 million DM. In 1998/99 the group showed a loss of 85 million DM including 38 million DM from Carl Zeiss Jena.
The situation of the Jenoptik GmbH in 1991

After the demerger Jenoptik faced enormous problems regarding the size of its workforce, its production infrastructure, its financial situation and its product portfolio.

As legal successor of Jenoptik Carl Zeiss Jena GmbH the Jenoptik GmbH was required to incorporate the remaining 27,000 employees of the former collective combine. Workers’ councils and trade unions had negotiated with the Treuhandanstalt that at least 10,200 jobs had to be kept in East Germany's optical industry. Since 2,800 jobs should remain with Carl Zeiss Jena, Jenoptik had to secure a minimum of 7,400 jobs. Considering the fact that the last remaining business area of Jenoptik, optical-electronics, gave jobs to 1,400, about 6,000 additional jobs had to be created. And the rest of the workforce – almost 20,000 – had to be dismissed as soon as possible – not an easy task under German labor laws.

The production infrastructure in Jena was also not favorable – neither for Jenoptik itself nor for potential investors. Jenoptik was left with mostly antiquated machinery. Most production sites also needed modernization urgently. To make things worse, these sites were mostly located in the city center of Jena, on the hills along the Saale river as well as in the smaller cities of Gera, Saalfeld, Suhl and Lommatzsch between 50 and 100 km away – all in all, no ideal places for modern production plants which normally require large and plane areas. In addition to this, the grounds at most sites were contaminated.

The infrastructure of the region did not suit the prerequisites of potential investors either. All production sites lacked modern systems for power and industrial gas. Local management was unavailable, and Westerners showed little willingness to live and work in Jena as the living conditions did not meet Western standards. Especially the housing conditions were very poor. Although there was a large number of skilled workers available in the area of Jena, craftsmen who were needed urgently to solve the infrastructural problems were hard to find. This was mainly a result of the way construction was done in GDR times. In East Germany, new buildings were mostly erected as so-called "Plattenbauten" made only of concrete slabs. As a consequence many different professions, e.g. the one of bricklayers, were no longer needed and had slowly vanished.

The financial situation of Jenoptik was not favorable either. Jenoptik had to take responsibility for all liabilities stemming from the former collective combine VEB Carl Zeiss Jena. These
liabilities added up to 992 million DM in 1991. The company, however, did not have a real chance to make up for these liabilities. Even paying the interest would hardly be possible because Jenoptik did not have any marketable products that could generate cash.

To make things worse, all core business areas, in particular the ones in the fine-mechanic and optic industry, had been taken over by Carl Zeiss Jena. Also the trade name Carl Zeiss was given to the newly founded Carl Zeiss Jena GmbH, and in its remaining business area, opto-electronics, Jenoptik's technology was rather outdated. Furthermore, the traditional markets in Central and Eastern Europe had collapsed, and sales channels to Western countries had not yet been established. As a consequence, revenues were estimated to be only around 70 to 100 million DM per year in 1991 and 1992. In 1990, the Jenoptik Carl Zeiss Jena GmbH, including the later Carl Zeiss Jena GmbH, had still generated revenues of around 850 million DM.

Last but not least, Jenoptik was required to take over all business units which once had belonged to the collective combine and which had mostly served as internal suppliers for all different kinds of products, e.g. plastics and metal parts or cables. None of these business units had very good future prospects, however.

Späth's vision - a chance for Jenoptik and Jena?

During the negotiations that led to the demerger of Jenoptik Carl Zeiss Jena Lothar Späth, a former prime minister of Baden-Württemberg, one of Germany's 16 federal states located in southwest Germany, had been appointed managing director of Jenoptik. The Treuhandanstalt was convinced that there would be no room for a second industrial core in Jena beside Carl Zeiss. Therefore, in the eyes of the Treuhandanstalt, Späth's main task was that of liquidating Jenoptik. Späth, however, had different plans. He developed a business concept for the joint long-term development of Jenoptik and the region around Jena. This concept, however, seemed rather utopian considering the problems given at that time.

Späth's starting point was his conviction that Jenoptik and Jena depended on each other: A positive development of Jenoptik would promote the development of Jena. But this positive development could only be achieved if Jena itself developed and expanded its potentials.
Späth borrowed his idea from a study that the Stanford Research Institute had published in April 1991. This study analyzed the relationship between technologically driven companies and their environment, using the Silicon Valley as an example. Späth and the government of Thuringia were fascinated by the "cluster effects" that an existing potential could have. Jena – that was Späth's vision – should develop after the model of the Silicon Valley. The well trained scientists and engineers in and around Jena were to become the decisive competitive advantage for the company and the region. Close connections between science and industry should provide for an uncomplicated transformation of scientific research into innovative products and later on into new industries. In particular, the local Friedrich-Schiller University played a central role in the planned technology transfer. Technologically advanced and innovative companies mainly in prospective industries like electronics, medical, laser and computer technology should be attracted to invest in Jena. Start-ups in these areas would also be supported. The idea behind this was that a mixture of existing and new companies would ensure mutual exchange and further development of the region of Jena.

The Free State of Thuringia and the managing director Lothar Späth agreed that this concept could help save Jena from the destiny of many other East German cities: shut down of once economically dominant industries and rising unemployment rates. To support his plan, Späth demanded a one-time financial aid from the Treuhandanstalt and the Free State of Thuringia to reduce the liabilities stemming from the collective combine and to cover restructuring expenses. Since Späth was highly respected in Germany because of the tremendous economic development which Baden-Württemberg had taken under his rule, Jenoptik received these subsidies. It was agreed that the Treuhandanstalt and the government of Thuringia would provide 3013 million DM, 1721 million DM of it in cash. About one third of the money was used to cover burdens that Jenoptik had inherited, i.e. to pay back liabilities and to pay pensions to former employees. In total, Jenoptik received 1891 million DM in public funds to cover its restructuring expenses. An additional 115 million DM came from Carl Zeiss Jena (Appendix 3). Späth hoped, that with this financial basis a solid starting position for the implementation of his plan would be secured.
Appendix 1: The privatization and demerger of the collective combine "VEB Carl Zeiss Jena"
Appendix 2: Ownership structure of the Jenoptik Carl Zeiss Jena GmbH and its demerged parts
Appendix 3: Sources and appropriation of funds received by the Jenoptik GmbH