

Personal Memories: An Itinerant Life between Post-War Germany and the Period of Political Correctness

Enka Glanzstoff, a Giant of the Industrial Mass Production

Diolen was the brandname of a polyester fibre top product marketed by *Glanzstoff*. In my memory its industrial production in two fundamental process steps, melt spinning and drawing, represents an unforgettable experience.

On the "Spinnbühne" (how the Glanzstoff- workers called the spinning room level), the different spinning chambers were arranged in a long row. The spinning process was quiet, only a distant humming from the winding room penetrated from the bottom of the spinning chambers. At the top of the spinning chamber the hot and fluid polyester resin was pumped through the holes of the spinneret and on its way down to the bottom of the chamber the filament bundle was cooled down and solidified by an air stream with constant temperature and humidity. Then the yarn bundle left the "Spinnbühne"- level and entered the take-up-room below. There a system of a take up-godet and an idle roller led the filament to the traverse guide, which laid the yarn onto the rotating yarn package driven by the take-up roll.

The Diolen production was an endless process, i.e. the spinning machines could not be stopped. So it was necessary to replace full packages by new tubes while the speed of the oncoming filament was several thousand m/min. For a newcomer it seemed like magic when a skilled operator with a suction gun threaded the fiber bundle round the godets, rollers and pins through the traverse guide and finally on the new spool.

In order to obtain a yarn with high tensile strength and elasticity the spun yarn underwent the so called drawing process, the second fundamental step of Diolen production. When I entered the drawing room I was struck by a buzzing noise coming from the spindles of the drawing machines arranged in several seemingly endless production lines. The yarn of the full bobbins coming from the spinning factory was stretched between two godets and an intermediate heating plate. The ratio of the surface speeds of the two godets defined the drawing ratio of the end product. The drawn yarn passed down to the spindle assembly, where it was wound up on a bobbin fixed on a spindle rotating with about 20 000 rpm. A special machine element was the ring and traveller system which laid the yarn on the bobbin while at the same time inserting twist into the stretched fiber to bind the different filaments together. The up and down motion of the ring created the typical biconical cop form of the full bobbin of drawn yarn, ready for further processing.

Coming from a research institute the encounter with the industry of *Glanzstoff* Oberbruch was an entirely new experience which, with regard to ambitions and way of working, strongly influenced my professional life. But not only the working environment but our life in North West Germany was so different from what I was accustomed to.

When in an evening of the year 1970 I arrived for the first time at Oberbruch, a small village in the Niederrhein region, I discovered a new world. Born and educated in Bavaria I was used to scattered villages with houses in various colors grouped around a church and a marketplace in the center. At Oberbruch the houses were exclusively red-brick buildings, similar to the nearby Netherlands,

aligned along a main street. The space between the houses were often closed by gates creating a little gloomy impression as if the village was a little fortress.

The reason for my trip to the border between Germany and the Netherlands was a job interview for the position of the manager of the Physical/ Mathematical laboratory of *Enka Glanzstoff* Oberbruch. *Enka Glanzstoff* was the world market leader for synthetic fibers mainly for the textile industry. Essential products of the wide Glanzstoff range were Rayon, a cellulose fiber, and synthetic filaments out of Perlon, chemically Polyamid 6, and Polyester, with the brand name *Diolen*. Rayon cord is an important reinforcing component of the tire carcass. Around 1960 *Glanzstoff* broadened his product range for tire reinforcement materials by the production of steel cord.

As head of the Physical/Mathematical laboratory I worked together with a team of about 15 physics laboratory assistants, who most of their time were not in the laboratory but in the different production units. Their principal role was to assist the engineering and production departments in troubleshooting activities. They identified the causes of manufacturing problems by measuring the critical process parameters and controlled the success of the corrective measures.

A Different Way of Working

The first characteristic which made my work so different was purely the dimension of the *Glanzstoff* Oberbruch factory. Spread over 100 ha this factory with more than 7000 workers was more than a production unit it was an entity for itself, an impression which was reinforced by the fact, that the factory was surrounded by houses for the managers and their families with recreation facilities as tennis courts.

Not only the environment but also the way of working in the *Glanzstoff* factory was fundamentally different to what I was used to. Before I joined Oberbruch I started my professional career after my studies of physics as a scientific assistant with *DFVLR* at Oberpfaffenhofen, a center for aerospace research near Munich. My project was a theoretical and experimental investigation on spin stabilized satellites. This analysis was general research with a similar character as the experimental work I had to do for my diploma. There was no rigid organization concerning the timeline and I had a high amount of freedom for this scientific work.

The work of the *Glanzstoff* Physical/Mathematical lab was exclusively operational, i.e. providing technical assistance to make sure that the manufacturing runs continuously. So the rhythm and the planning of the tasks were dictated by the problems hampering the production process.

The daily starting point was the "white cloud". *Glanzstoff* was dominated by chemists wearing white lab coats. Each morning they met in the factory forming the "white cloud", adjusting production to the planning and identifying the quality issues. "Sprinkled" into the "white cloud" were the people with the blue working coats, the engineers and the technicians, who together with the quality people and the Physics/Math lab decided how to tackle and solve the quality problems.

Already before the "white cloud" formed in the factory the Physics/Math lab team met in order to make an update of the different ongoing measurements and projects. There was a wide range of measurements: temperatures, humidity, mechanical tensions, flow velocities, rotational speeds, usually simple measurement quantities. The problem very often was to measure in the specific

manufacturing conditions. For example to measure the temperature of the spinneret demands either special spinnerets with a bore hole to use a thermocouple or a contactless temperature measurement with a precise calibration of the system spinneret surface and radiometer. More complex tasks were for example the analysis of the high speed spinning and drawing process with a high speed camera, analysis of oxygen partial pressure in the polyester condensation autoclave, normally inaccessible, determination of the necessary climate conditions for storage of steel cord,.....various tasks covering a wide range of measurement parameters.

But common to all these tasks was to solve a production quality issue and consequently it was paramount to obtain the results fast. Furthermore it was not acceptable to disturb the flow of the production process. So the Physics lab people had a challenging job to do. They had to adapt the measurements and experiments ingeniously to the specific production environment and to plan and organize according to a tight time table in order to eliminate the quality problems as soon as possible. After the completion and evaluation of the measurement, the results and conclusions were documented and the protocol dispatched to the operational people concerned.

Besides these operations with a certain troubleshooting character the physics lab was in charge of developing new working tools and measurement devices for the production and quality control. Examples are a robust but sophisticated handtool with which a steel cord worker could easily link the two ends of a broken wire rope or a contactless measurement method to determine the tangle distance of entangled yarn and finally an apparatus allowing to determine the amount of finishes (Lubricants, antistatic agents) of the spun yarn by measuring the electrical resistance of a yarn package. In my team there were excellent technical experts as for example Jupp Welfers, who was in charge of these more complex tasks and we filed several utility models.

While the factory was working in 3 shifts round the clock 7days a week, the laboratory people worked from Monday to Friday with an alternating emergency service on Saturday morning. The working hours were 40 hours per week.

The Physical/Mathematical laboratory was part of the Physical Department , which included also the Measurement and Control Technology and the Spinneret Unit which developed and manufactured the spinnerets for the *Enka Glanzstoff* fiber production. Max Schwab, a physicist was the head of the department and we met every working day between 6 and 7 pm to discuss the results of the measurement projects. Schwab was an "old hand" in the fiber industry and from him I learned to work professionally and to develop the right feeling for priorities. Every Friday the Physical department together with the top management from production met the Technical Director Ensslin to exchange information about the main issues of the week and the solutions which had been obtained or were on the way.

Living Near the Netherlands Border

There were several entrances to the company's premises. Next to the entrance *Glanzstoff* -Straße the houses for the *Glanzstoff* executive people were situated. Our apartment was in one of the red brick houses in the Birkenweg, surrounded by a small garden. The Birkenweg was a dead end, so it was a quiet place to live and ideally situated to the working place. There were only 200 m to the entrance of the factory area and another 300m to the laboratory. One of the advantages was that duringx noon break it was possible to go home for a quick lunch. Typically a sulphuric smell was

hanging in the air caused by the manufacturing of the semi synthetic Rayon fiber. With time you got used to it, but today in our health conscious era nobody would accept this.

The neighbours were of course the persons with whom you worked together during the day and when you played tennis at the nearby situated company owned tennis club you met your colleagues once again. So *Glanzstoff* was a big family and like in any family everybody knew almost everything about each other, which is a very particular situation. Only a small part of the management people was of Niederrhein origin. Most came from different German regions. So for my wife and myself it was easy to make first private contacts and to find friends.

After a certain start-up time in the company I had more leisure time and joined the soccer club FC Heinsberg which played in the district league B. A particularity which was new to me were the cinder soccer fields which were not only used for training but also for competition matches. These fields were very resistant to bad weather conditions, but a sliding tackling on such a ground caused painful skin abrasions. So it was better to restrict sliding only to the rather rare moments to score a goal. I was less tense than in the past and played some good games with a number of beautiful goals. I had no talent for tennis, which I practiced later, but I was certainly gifted for soccer, which I played from my very young years. Physically not very strong, I had a good ball control and was a tricky dribbler. This was not just an advantage because soccer primarily is a team play and it took me several years to adopt this.

But my soccer career came close to its end and so I started to play tennis at the company tennis club. Physically it was less challenging than soccer and not so risky concerning injuries. Moreover this was an opportunity to have a sports activity together with my wife. In the *Glanzstoff* tennis club I used to play in the second competition team, but I never succeeded to become a good player. Later in France I participated at smaller tournaments, but usually I was out after the second round and I could relax. With my wife it was different, she was a natural tennis talent. It was not so much the technical perfection of her strokes which can be difficult for a late beginner, but the good mental stability in a competition which made her a strong player. She stayed "cool" - as you would say today - in difficult phases of a match and could so beat players which were more experienced than her. During the following years she won some smaller tournaments and was ranked number one in the clubs, where our itinerant life took us.

My wife took on the job of a secretary at the local editorial office of the daily newspaper *Aachener Nachrichten*. This was not exactly appropriate for her education as trilingual secretary but offered the opportunity of being in daily contact with the local people and events. The people were open-minded and spoke a typical dialect, the Niederrheinisch Plattdeutsch. The Rheinland is the home of the German Carnival, which is called by its passionate supporters the "fifth season". Every year some of the lab technicians took several days off from the first top event, the Altweiberfastnacht, when women assume control over the cities and their town halls, not coming back before Ash Wednesday.

The Niederrhein region with the major cities Mönchengladbach, Duisburg and Düsseldorf was neighbouring the Ruhr district. Essen is one of the major cities of the Ruhrgebiet and was the place of residence of my father's family.

At the end of the 18th century, at the time of the French revolution, Carl Friedrich Gotthilf Köppen had a shop for bookselling and book-printing at Dortmund in the Ruhr district. Edmund Köppen, born 1873, was his grandson and in 1904, at that time he was managing the coffee roasting business of

the brand *Tengelmann* in Heidelberg, he married Eugenie Stellwag. They had 3 children: Grete, my father Rudolf and his younger brother Werner. During World War II Werner died of an insidious infectious disease at the age of only 28. My grandfather and grandmother passed away in 1948 respectively 1968 and my father died in 1961. So when we lived at Oberbruch aunt Grete was the member of my paternal ancestors still alive. She had owned a grocery shop in Essen but at that time had already retired. While living in Bavaria we had only few occasions to meet her. But now we had the opportunity to see each other more regularly and my wife and I learned to appreciate Grete as a warmhearted generous person. She never married and after her mother's death she lived alone. Grete died on January 4th 1973, 100 years after her father's birth.

The Decline of the Market Leader *

In June 2013 I stood once again in front of the entrance *Glanzstoff-Straße*. I had had a meeting with a consulting firm in Aachen offering computer software using splines, which I needed to calculate progressive lens designs and I took this opportunity to make a 60 km trip to Oberbruch. But the gate to the *Glanzstoff* premises was closed, no people between the red brick factory buildings, no smoking chimneys, no typical sulphuric smell, *Glanzstoff* did not exist anymore. It had been transformed to the *Industry Park Oberbruch* with about 20 smaller companies from various industry sectors. The only fiber company I found was the Japanese carbon fiber producer *Toho Tenax*.

In the second half of the 1970s a crisis shook the fiber producing industry. It was the consequence of several structural changes. More and more Asian fiber producers learned to control the technology. Possibly *Glanzstoff* who owned the spinning machine manufacturer *Barmag* should have been a little more cautious in selling their technology. First consequences were increasing low price imports in Europe and later a rapid growth of the Far East textile companies. Today a high percentage of textile fabrics come from China, India, Korea and Taiwan. In addition the low wages in Asia made it much more attractive for the European apparel industry to outsource their production. The consequences for *Glanzstoff* as for other European fiber manufacturers were at the beginning part-time work, then downsizing, investment cut-back and restructuring. There were intermediate efforts to increase the efficiency of polyester spinning and investing in the manufacturing of modern high performance carbon fibers signing a license agreement with *Toho Rayon* in Tokyo. But the decline continued. In 1991 the parent company *Akzo* stopped their steelcord production for tyres. In 1993 rayon fiber *Cordenka* manufacturing was discontinued. Workforce fell to below 2000 people. Former technical equipment and installation division, central workshops and the different business units became autonomous enterprises. They were merging with new partners, initiating a change from a homogenous firm to an open industrial park. The former Group parent *Akzo Nobel* parted completely with the man-made fiber division which was moved to the Far East and integrated in a new company named *Acordis*, which was sold to an British American investment group which broke them down into several single enterprises.

So *Glanzstoff* Oberbruch which used to supply the whole world with synthetic fibers still in the 1970s, had disappeared from the market at the beginning of the third millennium.

* A detailed description of the *Glanzstoff* history can be found in the chapter "Oberbruch Industry Park" at Wikipedia.

First Years at Landshut

My Parents

I was born at Landshut on April 4, 1941. Landshut was (and still is) the capital of Lower Bavaria, but nevertheless a small city of about 50 thousand inhabitants.

My mother's roots were in the Lower Saxony in northern Germany. At the end of the 18th century Hans Heinrich Schlumbohm lived in Bispingen in the Lüneburg Heath. His grand-grandson was Wilhelm Schlumbohm, who in 1912 married Margarethe Brandt in the old Hanseatic City of Stade. My grandfather Wilhelm had an eventful professional career all over Germany from the South to the North with intermediate stations at Nürnberg and Ergolding, near Landshut, before he finally became general manager of the *Celler Presswerke*, a company manufacturing plastic articles at Celle, in his native region.

The Schlumbohm family had three children, two sons and a daughter, my mother Elisabeth. Elisabeth was born in Stade in 1915. My uncle Richard, born in 1918, died in the battle of Stalingrad. In his letter to my parents some days after Christmas 1942, only some weeks before the capitulation of the 6th army, he describes how he celebrated Christmas with his comrades and how they were longing for peace. The other son died shortly after birth.

As already described my father's ancestors came from the Ruhr district. In 1906 Rudolf was born in Heilbronn where his father Edmund was for some years responsible for the coffee-roasting activity of the Tengelmann company. Rudolf had a commercial education and from 1935 on was employee of the Biscuit and Chocolate Factory in Landshut, where he finally was promoted managing director of the Technical Departments. My mother was working in the drugstore Muggenthaler in the Zweibrückenstrasse. My father became one of Muggenthaler's best customers and finally married my mother in October 1938.

Landshut is a historical medieval city, known by the Landshut Wedding one of the largest historical pageants in the world. It commemorates the wedding between Hedwig Jagiellon, the Polish King's daughter, and George the Rich, the son of the Duke of Bavaria-Landshut from the House of Wittelsbach in the 15th century. The scenery of the pageant are the two broad magnificent streets Altstadt and Neustadt, which are entirely preserved with their gothic style houses and their typical crow-stepped gables. During the first years of my childhood we used to live in a house in Stetheimer street at the periphery of Landshut. I still remember my first friends, when we moved right into the historical center of Landshut, the Altstadt. There my parents opened a rather big grocery store in the so called Grasbergerhaus, Altstadt 300, "unter den Bögen", which means "under the arcades", as one line of the Altstadt houses had arcades towards the side of the street. The Grasbergerhaus was built in 1453 and in 1475 became the home of the Polish bride Hedwig. It was a marvelous home. While the shop was on the ground floor, our home was on the first floor. Eight large rooms arranged around a hallway which, to my estimate, was 30 m long. At least it was long enough for me to do roller skating. Four families used to live in this flat. We had the chance to have 4 rooms for us. One of them was divided in a kitchen and a bathroom. At the end of the hallway there was one toilet for all the families.

The rooms were about 3 m high. So in winter they were difficult to get warm. Central heating did not yet exist, so the living room was heated by a coal stove and the sleeping rooms were not heated at all. As insulating double pane windows did not yet exist, we had had beautiful ice flowers covering the windows in winter, but the bed coverings had to be very thick to keep us warm.

Most of my spare time I met with my friends in the courtyard or in the streets. The Altstadt and the narrow streets, called "die Gassen" in German, which linked the Altstadt with the Neustadt were an ideal playground. In bad weather the spacious hallway of our home offered special playing opportunities, roller skating for example, not always appreciated by the other families. I had a younger brother Peter: He was born in 1945 and the age difference was possibly one of the reasons that we rarely played together. But the main reason was that we were very different in character. While I was somewhat a loner despite my friends, my brother was much more social joining the boy scout movement at very early age. He stayed active with them for a long time. And he was not particularly interested in sports, which was my passion. So we developed very differently and the fact that I left Landshut after my studies was the reason why we had only little contact. Peter stayed at Landshut and made a successful career as headmaster of the primary school in Vilsbiburg.

Doing Sports, my First Passion

At that time TV was not affordable for normal families. There were only a few restaurants starting being equipped, which was an additional contribution to their profit, at least when the big soccer matches were transmitted. That period was the big era of the cinema. My weekly pocket money was equivalent to three cinema tickets on the cheapest places and certainly twice a week I went to a movie. My preference were western movies with the great "heros" of my time: Tom Mix, Randolph Scott, Gary Cooper, Burt Lancaster, Kirk Douglas, Glenn Ford, Gregory Peck..... What a generation! After 3 cinema visits my pocket money was almost used up, so there was certainly need for a non-expensive hobby and this was sports. Sports became an important factor for my whole life. As already mentioned I did some roller skating, but I found it a little boring. Only later when I played some ice hockey I practiced ice skating all winter on the Landshut ice rink. But the first sport which I practiced continuously and systematically was swimming. I became a rather good crawl swimmer and became one of the best in my age class. But finally I did not continue because I discovered my great sporting passion: soccer. Soccer was the most popular sport in Germany, particularly when Germany won the world championship title in 1954. This success was a major event for post war Germany, because after the World War II catastrophe and the years of economic misery this event became the symbol that Germany had not entirely vanished. This new self-esteem also became a guideline for the economic development of the following years, the years of the German Wirtschaftswunder.

In those days I played in different soccer teams in and around Landshut, for example ETSV Landshut 09, Rapid Vilsheim and FC Ergolding. It was a wonderful time which I shared with my friends Roland Widuch and Johannes Lang. After my retirement I was able to contact Roland who had made a management career in the industry, among others with IBM, and at the end of his professional career became General Manager of a software company near Stuttgart. Johannes Lang had become a teacher for special education and now lives at Regensburg.

Until the age of 35 I continued to play football in competition in different clubs playing in the district leagues of southern and northern Germany.

University and Difficult Years

I lived at Landshut until the end of my physics studies in 1968. 4 years elementary school, 9 years secondary school with the German Abitur (qualification for university entrance) in 1960. During my years in the secondary school I became fascinated by natural sciences and hesitated a long time to choose either chemistry or physics. Finally I took the decision for experimental physics and started my studies at the Technical University in Munich, which I left after the first semester in order to continue at the Ludwig Maximilian University, also in Munich. This period until 1968 was a wonderful time of discovering the view of the world governed by the laws of nature.

At this time I would not know that I would pass major a part of my professional career in activities where my knowledge of physics was not directly applied. But the way to analyze a problem, to find a solution and to implement it, which is so typical for the working method of a physicist, helped me a lot to organize the work and to implement new methods while working in the Marketing and Quality area. My interest in physics remained strong, so after my retirement I attended lectures about special and general relativity as well as quantum field theory at the University of Freiburg. These topics are the building blocks for the understanding of the fantastic evolution of our World.

Munich was about 60 km far from Landshut and the train took about 1 hour from my home town to the Bavarian capital. I could have had the opportunity to live in a student hostel at Munich, but I decided to stay close to my friends and the football activities and travelled twice a day between Landshut and Munich. Today I think this was not necessarily a good decision to miss this opportunity for new social contacts.

At the university there were no tuition fees except a rather small enrolment fee. I was lucky to receive a special top level study grant available in Bavaria, the Hundhammer scholarship. In 1960 the average salary per person per year was DM 6000,-. The monthly amount of the study grant of DM 250,- was enough to cover my cost of living. So it was possible to spend most of the semester holidays for recreational activities with my friends. During the semester I worked very hard to attend the lectures and to pass the seminar tests, but in the semester holidays, I did not work on physics except during the period before the exams. I was mainly doing sports, swimming and soccer. During the evenings we very often played Schaffkopf (a Bavarian card game) with small stakes, evident for a student. My situation was more favorable than for some of my friends who had to earn money for their studies working during the holidays either for administration or industry. My brother chose another option for financing his studies. He enlisted for some years for the German army.

During the last years of our school education it was our mother who took care of us. After the first successful years of the grocery shop, when my parents even could start a branch in Lower Bavaria the upcoming competition of food chains and specialized delicatessen shops were hard for the existence of small groceries. In the end my parents had to give up their business and my father became general sales representative of *Hammesfahr*, a tyre retreading company. This was a tedious job. My father had to travel the whole week trying to take orders. My mother was responsible for the management of the stock in the Schwesterngasse and the income was moderate. So I had only little time to spend with my father and did not notice how the relationship between him and my mother grew worse. Possibly there was also a certain indifference on my side. In the late fifties they separated and got divorced in 1961. In the same year my father died of a heart attack. He was only 55 years old. After the separation from her husband my mother worked as a secretary for the *Jenaer*

Glaswerke Schott & Genossen. Her boss was the Technical Director of the Landshut branch for electronic packaging, Dr. Fuchs, a physicist. I graduated from school in 1960, my brother did the Abitur 4 to 5 years later. So during the last years in secondary school there was only our mother who took care of us. Working 6 days a week plus doing the household was a terrible stress. Later, while we were at college there was some financial support because of my study grant and the fact that my brother financed his studies doing his military service. But the years of permanent stress had ruined her health and that left her only a few years to enjoy retirement until she died of a heart attack at the age of only 65 years.

My parents showed a very strong sense of responsibility for their children and during the difficult economic conditions in Post-War Germany they had to make great sacrifices. I am so grateful that they gave us a carefree childhood and a profound education which became the base for a solid professional career for my brother and myself.

I had a couple of friends from school and from my soccer activity. Some of my school friends I still meet today. Christian Lorenz, who had become a judge at the Landgericht, Ludwig Oswald, our class representative and later a primary school teacher as well as Ursula Köbl, who went teaching social law at the Freiburg University.

The DFVLR, a Major Experience for Orientation

I worked on my diploma thesis in the institute for X-ray physics at the Ludwig Maximilian University. The head of the institute was Professor Alfred Faessler and the title of my thesis was *Analysis of the $K\alpha$ - and $K\beta$ -X-Ray Emission Spectra of Sulphur and some Sulphur Compounds* [1]. In all the disciplines of my examination the results were excellent and now the world seemed open to me. I had only to decide either between the research work at the university or to offer my knowledge on the free market. I thought to do both, when I joined the *DFVLR, the German Research and Test Center for Aerospace* in Oberpfaffenhofen, west of Munich. A friend of my family, somewhat older than me, worked at the *DFVLR* and he described me the *DFVLR* as an opportunity to make the doctor grade in physics and being paid as a scientist of the Institute. So I joined the *Institute for Dynamics of Flight Systems* of the *DFVLR*. My first big project was the investigation of a nutation damper, a device which should avoid that spin stabilized satellites will lose its fixed orientation by external disturbing forces [[2] report *ESRO TT-152: Theoretical and Experimental Studies of Annular Nutation Dampers*]. The initial part of the investigation consisted of the mathematical analysis of the satellite-damper system using the laws of mechanics and fluid mechanics. To check the results and to determine the parameters of the fluid motion (difficult to describe theoretically) we constructed a passive motion simulator. The simulator construction, its driving mechanism and its measurement system was a rather sophisticated experimental device. In principle the simulator table was supported in its center of gravity by a special air bearing. So it represented a near approximation of a force-free satellite. The damper was a circular ring filled with mercury. The damping process was registered by a position measuring device transforming the inclination of the table into the intensity variation of a light source. The combination of theoretical and experimental results allowed to understand how a passive fluid damper could stabilize the position of spinning satellites (determine the influence of the geometrical damper parameters, of the damper fluid and the degree of filling.). When I left the *DFVLR* end of 1970 this project was almost finished, the English report was still under preparation.

The *Institute for Dynamics of Flight Systems* had been recently created and was about to determine its management structure. The special feature of this organization process was the strong participation of the scientific staff. So there were many political and not seldom controversial discussions between the different groups of interest. Finally the project of self-organization failed and the Executive Board of the *DFVLR* appointed the managing director for the institute. So in my memory the *DFVLR* was a research institute with highly qualified scientists working with a high degree of personal freedom. The work of the project teams was very creative but for some projects the time schedule was rather generous and the project organization was sometimes not very stringent. So with the time I developed some doubts if the research work would be the right work for me and I started considering to try the industry as a career alternative.

Bärbel

Working for the *DFVLR* I moved now to Munich. I rented a room in Pasing, a quarter of Munich lying on the railway line to Oberpfaffenhofen. Only at the beginning I returned to Landshut at the weekends. To follow my passion and to find new friends I joined the soccer club SC Wessling, Wessling being a small village near to the research center. For some years I played in the A-district league county of Starnberg, a period interrupted by a heavy meniscus injury and its surgery.

In the noon pauses of summer the flexible working hours of the research institute offered the possibility to take a swim in the nearby lake of Wessling and this was where I met Bärbel. She was working as trilingual secretary in another department of the Institut für Steuer-und Regeltechnik. She was a very pretty young lady with black hair with a steel blue touch and lovely brown eyes. During our noon excursions I had the opportunity to talk to her and liked her open, friendly straightforward attitude. Over time I decided to get to know her better and invite her for a dancing evening in a dance club in München Schwabing. What a brave act! What, if she would say no? But if she would say yes, there was still a problem, because I was a real lousy dancer? Finally I estimated that this was no serious problem as the popular music in the dancing clubs was Boogie and Rock 'n Roll, where with some feeling for the rhythm no special dancing experience was necessary and as a soccer player I was accustomed to move. A little more annoying was that, at an age of 27 years, I had no driver's license nor a car. Bärbel was living with her parents in Gilching in the country. As at that time the Munich commuter train system did not yet exist and it was somewhat complicated to go to Munich by train. So I was not sure, if she would accept, if I would propose to meet in the train. But she did and I was relieved and happy to see her, boarding the train arriving from Gilching at Pasing. We spent a wonderful evening, dancing was no problem at all and most of the time we talked.

Bärbel was only 25 years old but had already travelled rather a lot. She had an education in hotel management and diploma in English and French. Her education and her hotel jobs had taken her to London, to Geneva in French speaking Switzerland and to different places all over Germany between Garmisch Partenkirchen and Bad Harzburg. So listening to her she made me curious to move around, take other jobs, meet new people.

After our first rendez-vous Bärbel and I spent a lot of our time together and I moved to Gilching to be closer to her. During weekends we made hiking trips to the mountains and lakes around Munich, though I did not like walking, but Bärbel convinced me. All these excursions were a wonderful opportunity to talk about us, our interests, our opinions, our wishes and we discovered that we

shared some important viewpoints: personal independence, looking for a life not restricted to the same local area and the same business organization. The research center DFVLR in Oberpfaffenhofen should be only a starting point. In March 1969 we married in Herrsching, which was to be our home for about one year. At the end of 1970 we left the DFVLR and Bavaria for a first experience in the industry. *Glanzstoff* Oberbruch, situated near the border to the Netherlands was looking for a manager for their Physical /Mathematical laboratory.

The Customer is Always Right

In the first chapters of this chronicle I have described our stay in the Niederrhein region. I was excited about *Glanzstoff*, its industrial character, the young team of laboratory assistants and our efficient work. I loved the somewhat melancholic landscape and the red brick houses of the villages, the straightforward open-minded joyful people and the trips across the Netherlands border to Venlo, Sittard and Roermond . But considering the long-term aspects the perspective for the professional evolution of a physicist in a company, dominated by chemists, was not clear. Moreover we felt a little constricted by the ghetto in which the *Glanzstoff* management people lived. So finally we decided to quit *Glanzstoff* and the Oberbruch region for a new challenge.

At that time I found an interesting offer of a rather small privately owned company, *Buck*, at Bad Reichenhall, in the Bavarian Alps near the border to Austria. They were looking for executives managing projects for the German Defence Ministry. I should explain that in the first years of my professional activity I had no clearly defined plan to build a professional career. I was convinced of my scientific technical capacities and skills and I had the feeling that with my wide education as physicist there was no challenge that I could not meet. I was guided by my interest to face new challenges in new organizations with new people. And in the case of *Buck* life near Salzburg, one of the most famous cities of old Europe was extremely attractive. So we crossed Germany from the Netherland's to the Austrian border.

The *Buck* research unit was situated in Fronau a very small village of only some houses offering enough space for secret military projects. Fronau was embedded in the marvelous Alpine Area with blossoming meadows, cool woods and picturesque mountains. A special highlight was the military training ground Reiteralpe, a table mount about 1700 m high where an area was reserved to the German army and where *Buck* could test its developed products. After a dizzying ride with the cable car we arrived at the top station of the Reiteralpe and there was still a 30 minutes walk to the mountain lodge. The walk on the rocky paths to the lodge was a unique event. In the crisp clear air there was no other sound than the birds singing. Between the mountain pines colourful meadows extended, meadows full of columbines, alpine roses and different kinds of gentian, flowers only existing in the mountains. The lodge was a small cottage for final preparation of the projectiles for the launch and where some people could spend the night.

My first project was to develop projectiles to deviate missiles equipped with infrared seekers. In simple words the projectile was a small rocket which after explosion set free hundreds of flaming flares forming an extended object of infrared radiation. Such defense weapons could be used for example by a fighter jet attacked by a missile locked on the target by a infrared tracer. The rocket and its propulsion system were standard. The object of development was the heat emitting cloud. But the standard rocket defined by the launcher system was rather small and the space available for

about 1000 flares only roughly 5000 cm³. A propellant charge shot the rocket in a height of about 100 m where an axial igniter destructor charge dispersed and ignited the flare cloud. The flares were circular sector shaped and consisted of a combustible paste on a carrier foil. The specification was to deviate the missiles equipped with an infrared seeker by a heat cloud of a certain minimum intensity burning a certain minimum time.

For the first time I learned the stringent execution of the different phases of a technical project: concept, definition, development and production. The results of these different project stages were tested on the military training grounds of the German Bundeswehr all over Germany. The concept tests were done on the training ground on nearby Reiteralms. As the launching section of the projectile was fixed by the compatibility with the existing launcher, these first trials concentrated on the expelling and ignition of the flares. We tested two different kind of flares, the first type with phosphorus as combustible material, the second type consisted of flares coated with metal powder layers like boron powder for example. The concept testing was nothing but perfect, from the projectile launching, over the explosive disassembly, the quantitative ignition of the flares until the formation of the heat cloud. For preparation and organization of the test I had the support of an excellent mechanic, Baumgartner, a very talented young man. There was only one feature which was not entirely complying with the specifications. It was easy to set a phosphorus flare on fire, but unfortunately it burnt also very fast, so the burning time of the flares was too short. Therefore the main goal for the development phase was to obtain a longer burning time complying with the specifications.

After the successful test I was nominated head of the physics project department. These tests were not only a welcome training for me to organize a project, but also the occasion for a first profound contact with the customer. For *Buck* there was only one customer the German Armed Forces, the Bundeswehr. The *Bundeswehrbeschaffungamt (BWB)* in Koblenz was in charge of the defense procurement including the development and tests in cooperation with external firms as *Buck*. So the *BWB* official was a very influential man and pampered by the special care and attention of *Buck's* top management and commercial people. I met this person for the first time at the launch test of the concept phase. I was naively not aware that the technical success was only a necessary condition to convince and overwhelmed by the flawless test results I did not devote the appropriate time to him, which he could expect as the single customer. During future project progress I always had a hard time to establish a good working relation with him. It was a first lesson for me that technical expertise is not enough to succeed in the professional career.

Living Between Berchtesgaden and Salzburg

We had rented an apartment in Bayerisch Gmain, a small community close to Bad Reichenhall. Driving through the Saalach valley it took me about 20 minutes to get to the lab by car. I think, that Bayerisch Gmain was the most picturesque region we ever lived. Embedded in the massifs of the Alps it was situated directly at the Austrian border. So we made regularly weekend trips to Salzburg, which was about 30 min by car. The city center below the castle Hohensalzburg is a historical jewel, a protected UNESCO monument. The Getreidegasse, where the house of Mozart's birth in 1756 is situated, is probably the most famous part. The medieval house fronts and their windows are marvelously decorated and characterized by wrought iron craft symbols over the old shops. The houses in the narrow streets show no crow stepped gables as in Landshut and the roofs are not

visible. Another famous site is the Cathedral built in the baroque style. On the place in front of the cathedral every year during the Salzburg Festival the play *Jedermann* von Hugo von Hoffmannsthal is performed. As Buck invited customers to the festival spectacles we had access to the rare tickets and were able to watch Curd Jürgens performing as *Jedermann*.

Another Austrian attraction was the way of living, which is more relaxed than in Germany. It was characterized by the excellent cuisine and its wine culture. The Friesacher Heurige near Salzburg was a cozy wine tavern typical for this country and a preferred destination for local people and tourists. Even if there is a certain rivalry between Bavarians and Austrians we remember very friendly and warmhearted discussions in the Friesacher Heurigen tavern.

So basically we had a wonderful private life, we continued to play tennis, not in a club this time and I played some soccer matches for the Buck company team, where the meeting after the match enjoying some glasses of beer was as important as the match itself. But this period was also clouded by our sorrow to have children. Bärbel had a difficult surgical intervention and also I had to pass some exams, but later years showed that we were not lucky to have children. Probably in vitro fertilization would have helped us, but it was only at the beginning of its development at that time.

Finishing the project at Sea and leaving *Buck*

Our development efforts to increase the burning time of the flares were successful by covering the big part of the phosphorus flare surface with a less combustible passivation layer, leaving a smaller part of the phosphorus flare free for ignition. Another problem to solve for prototype testing was manufacturing of the flares on an industrial scale. The concept tests were still done with handmade flares, a very tedious work. The industrial process which we finally developed was the coating of extended foils by a squeegee coating machine and subsequent punching out of the flares.

In autumn we tested the prototypes in Eckernförde bay at the Baltic Sea. There was a large Bundeswehr testing ground. We were in competition with a defense technology company much bigger than *Buck* and I remember the first night when the *Buck* crew of development and sales people gathered behind the window of one of our hotel rooms observing the test shooting of our competitor. The solution proposed by our competitor was a point-like infrared source which had the problem that it had to be very intense in order to be equivalent with light intensity of the heated flare cloud. The next day there was the test shooting of our prototypes and it was a full success. The following day the test results measured by the army experts were communicated to *Buck* and all the major specifications regarding IR intensity and combustion time were fulfilled. In comparison to our competitor we had the advantage that our flare solution simulated an extended target.

Despite of this success I left *Buck* at the end of the year. The main reason was the uncertain future of the company. On one hand the defense technology seemed to be a market, even in the long term, with a steady demand by the state military organizations. On the other hand this demand was strongly dependent from the political situation from national, EU wide and global events. Buck was only a small company on a very competitive market, its future seemed not very clear and secure. So at the end of 1976 we decided to leave this lovely place at the German Austrian border and move to Munich, the Bavarian capital. In the 1990s after the end of the cold war, when worldwide and particularly in Germany the military spending was strongly reduced, *Buck* was taken over by Rheinmetall, a listed German defense supplier.

Postwar Politics and Some Remarks Concerning Today's Political Correctness

From Konrad Adenauer to Helmut Schmidt, Strong Personalities with Rough Edges

As for any young generation politics had no priority for us. Doubtless subject number one was sports. All my friends were active sportsmen, some played tennis or handball but most of them played soccer. When we met our talks dealt mainly with the results of the soccer Bundesliga or other sports events. Nevertheless when we went to college we developed a stronger interest in politics and political parties and added the national press to the regional press (primarily appreciated for its sports pages), for example the *Süddeutsche Zeitung*, and weekly magazines like the *Spiegel*. Our political orientation was split between conservative standpoints represented in Bavaria by the CSU and moderate socialist opinions, which meant SPD. The third party were the liberals FDP, the radical communist party KPD had been prohibited (reestablished as DKP in 1960) .

The German postwar political parties were distinguished by strong personalities. Germany's first chancellor was Konrad Adenauer, former Mayor of Cologne, taking his responsibility when he was already 73 years old, having passed the last ten years of the third Reich as retiree. In the roaring twenties he had lost his fortune speculating with shares of *Glanzstoff*. After Erhard and Kiesinger followed another remarkable chancellor, Willy Brandt, which had passed the years of the Nazi regime in Norwegian exile supporting the left socialists in Germany. As chancellor he opened the German foreign policy to the states of the Soviet Republic and concluded the treaties with the Warsaw Pact states, whose main goal was the mutual renunciation of force. His successor was Helmut Schmidt, a very smart guy, who was the leader of Germany in its battle against the terror organization RAF culminating in the high-jacking of the Lufthansa plane Landshut and its spectacular liberation by the special forces unit GSG 9. But there were other strong personalities as Erhard and Kiesinger from the CDU, who both became also chancellor of Germany, Bahr and Wehner prominent supporters of Willy Brandt. And there was Franz Josef Strauss, the most sparkling personality of the German post war policy.

In the debates in the German Bundestag these people were fighting for their opposite viewpoints with regard to the foreign policy during the period of cold war, the right social policy in a flourishing German economy, the question of Germany's rearmament in order to take international responsibility.... There was an exchange of arguments followed by crucial votes. These men (yes, there were only a few women) were ready to take responsibility for their country, they were proud of their nation, and did not follow any ideological directives. It was fascinating to follow a debate head to head between Wehner and Strauss.

This patriotism was also present in our young people, may be particularly in the group of my friends because we followed with great enthusiasm the success of the sports heroes of postwar Germany. We identified ourselves with Fritz Walter, Helmut Rahn and their teammates winning the first Soccer World Championship after World War II, with Hary, Germar und Kaufmann, the great generation of German world class sprinters, the German ice hockey team winning the olympic Bronze medal at Innsbruck with some top players from Landshut,

The "Wirtschaftswunder" during the 1950s and 1960s substantially increased Germany's reputation abroad. We appreciated our German identity, different from a part of the German people today at

the beginning of the third millennium, when they deny the German history and tradition, and indoctrinated by school, politics and mass media seeing themselves as member of the “people of perpetrators” which has to atone for the “sins of the past”.

We were well aware of the terrible crime of the Nazis, but for us this was not the total German history. Germany's roots date back to the east franc empire under Otto I in tenth century. Until the 19th century it exists as the Holy Roman Empire of the German Nation, which is the association of territory states, unified in 1871 by Preussen to a national state with the substantial involvement of Otto von Bismarck, the Prussian Prime Minister. Germany for us was the country of Goethe, Schiller, Kleist, Heine,....Bach, Händel, Brahms, Liszt, Orff...., Kepler, Leibniz , Röntgen, Planck, Einstein, Hahn.... For us, despite the horrible period of the Nazi Regime, it was also the country of the poets , scientists and philosophers .

Information concerning the Third Reich and the Holocaust in the press, as well in our school education were scarce and superficial. It was certainly a big problem for the adults to explain why a whole nation adhered to the insane ideology of National Socialism. Probably a big part of the atrocities in the concentration camps were not known, but the disappearance of Jewish families and events like the “Reichskristallnacht” could not be ignored . Considering Germany and its evolution with the years I am afraid, that the German people are characterized by a certain search for consensus and a lack of individualism, which makes them vulnerable for ideologies.

The Period of Political Correctness

Today Germany is under the influence of another less horrible ideology which paralyzes the open and critical political discussion, the so called “political correctness”. Having its origin in the student movements of the 1960's its left-liberalistic-ecological ideas have been developed by a generation of politically red-green oriented people today occupying many leading positions in the media and politics . Simplified “political correctness” means a list of behavioral measures what you should think and say in public life, supervised by politics and media, the philistines of political correctness [3]. Some of these rules set high moral standards, some of them are doctrines , often of sociological nature. As for any ideology the political correctness is not a base for discussion, the rules are definite, critique and discussion are excluded. If you are violating this rules you risk to become socially isolated. A brochure of the German Umweltbundesamt names and shames scientists doubting the anthropogenic character of global warming . Eva Herman, popular German TV newsreader got fired because she had said that in the NS regime the family was respected in contrast of today's Germany, where, as a consequence of the 1968 movement, the traditional role of the mother is denied and so the birth rate is declining. Thilo Sarrazin, board member of the German Federal Bank, wrote a book “Germany abolishes itself “. One of his thesis is, that the immigration of muslim people combined with their high fertility lowers Germany's average intelligence and education level. The German president Wulf dismissed Sarrazin. The “ghostwriters” of Wikipedia write that Sarrazin had resigned from his post, what is not true. The newspaper Westfalen-Blatt terminates the contract of a columnist because she responded to a father who was concerned about participating with his two daughters at a homosexual marriage. She advised not to take them with him. Sometimes the opinions may be border-line, some people may totally disagree, but western civilization has fought a long time for its right to express opinion freely. Particularly Germany should be sensitive having passed a period when it was dangerous to express one's opinion.

So in today's political life the debate with arguments is more and more replaced by public defamation of the opponent. In Germany the way to condemn a person violating the rules of political correctness is to call him a Nazi, i.e. a person who is still infected by the ideology of the German past. This works extraordinarily well: German politicians, journalists and state subsidized experts, the philistines of political correctness, are united in fighting against right wing extremists. So for example a public survey organized by the Allensbach Institute shows, that 45 % of the population say, that in Germany you have to be cautious to express your opinion concerning the current immigration problem [4].

All the bigger German political partys nowadays have left- ecological programs and the differences between them become smaller and smaller. The person, who has created this political uniformity and who is representing it, is Angela Merkel. Any party trying to preserve tradition and values, opposing the disappearance of Germany in an amorphous European administration, taking position against spoiling the people's income for big banking houses and large corporations is defamed as right-extreme party. Only recently after the unlimited flooding of Germany by people coming from Asia and Africa following the invitation of Angela Merkel, political resistance is awakening. A conservative party AfD has been founded and now rates about 15 % in the polls.

One of the roots of the development of the "mainstream" Germany is the student protest movement at the end of the 1960s. The reasons for the students' revolt were manifold. Generally it was not a German but more an international phenomenon. It was characterized, among others, by the protest against the Vietnam War, the support of Martin Luther King's fight against racial discrimination, the idolization of Mao Tse Tung and Ho Chi Minh and communist ideas. In Germany additional conflicts were the confrontation between the war generation and the post war generation, the uprising against authority in politics and education. One of the consequences of this movement was, that the perception of the family changed. The traditional family was now only one of several options. For example women discovered professional careers as a preferable alternative. The role image of women and men changed. The contraceptive pill was a welcome aid for easier realization of these alternative life plans. In the 1970's the birth rate in Germany fell to less than 1.5 and remained almost unchanged until today. Therefore Germany has the serious demographic problem of an ageing population. This fact was known for a long time, but no German government dared to put the historically critical topic of family planning on its agenda. So today Germany doubtless needs immigration. A reasonable solution to preserve Germany's economic strength, seems to be qualified immigration like in Canada or Australia. Besides that the German constitution grants asylum to all persons fleeing war and persecution. But unlimited uncontrolled flooding with refugees as provoked by Merkel and concealed by humanitarian considerations, will ruin German economy and particularly the German social system.

Rodenstock, my Entry into the Spectacle Lens Business.

At the end of the 1970s *Rodenstock* was number 2 on the world market of spectacle lens optics together with *Essilor*. The world leader was *AOC (American Optical Corporation)* a US company strongly concentrated on the US market and on mineral lenses. The *Rodenstock* product portfolio included spectacle lenses, frames and ophthalmic optical instruments. The head of the research and development sector, as well for spectacle lenses as for ophthalmic optical instruments was Dr. Günther Guilino, one of the most prominent scientists in the ophthalmic optics industry. He was looking for a scientific associate with the perspective representing him for part of his functions at the

lens development department. As we had the intention to stop our itinerant life and to settle down a world famous big company like *Rodenstock* seemed to be a solid base. My application was accepted and from 1977 on I was a member of the *Rodenstock* team for the development of spectacle lenses.

My first major task was a simple field investigation to determine the night driving capability of photochromic spectacle lenses. During the 1960s the US company *Corning Glass Works* invented the photochromic mineral glass material which darkened when exposed to sunlight. In the evening when the intensity of the daylight decreased, the photochromic lens became clear again. Now one important legal issue was, if the return to the clear state was fast enough to allow driving a car in twilight conditions. It was not possible to simulate the natural conditions in a laboratory so the test had to be executed as a wearer test. 5 photochromic lens types had to be tested and compared under different weather and environment conditions. From mild weather in the city of Munich to the low temperatures of an excursion by cable car to the summit of the Zugspitze. All these different conditions had to be tested to certify the lenses for night driving.

As one spectacle consists of two lenses one test wearer was not enough and to cover the different weather conditions in a reasonable time also weekend measurements were necessary. I needed a reliable and flexible assistant. My wife agreed and so, equipped with several frames, mounted with different photochromic lens types, a luxmeter and a mobile transmission measuring device we spent many hours walking around and analyzing the darkening and clearing of the different lenses, always under the curious observation of people. The results allowed us to support the launch of the newly developed brand *Colormatic 2* as the first real night driving compatible photochromic lens.

The top priority *Rodenstock* project however was the development of the first progressive lens of German origin. The German industry was a reference for the ophthalmic optics business in the world and particularly for the German optician. Therefore the introduction of the progressive lens by the French manufacturer *Essilor* in the 1960s and 1970s under the trade name *Varilux* met with scepticism by the German market and had to face resistance by certain German scientific experts. Nevertheless some opticians attracted by the technical challenge and higher margins took the risk to try this new type of lens. The second generation of *Varilux* proved its superior benefits for the wearer and became an increasing success on the market. The *Varilux* lens was distributed by *Ehinger*, which later became an *Essilor* subsidiary and the second biggest German manufacturer, Carl Zeiss. So *Rodenstock*, the German market leader, urgently needed its own product and started to promote the product *Zoom* from *BBGR*, an *Essilor* daughter. *Zoom* however was a lens of the first generation and could not compete with *Varilux 2*. So *Rodenstock* decided to start a development project for their own progressive lens. The man in charge was Dr. Rudolf Barth, a physicist who developed the design concept of the variable periodicity and, together with the manufacturing experts at Regen, the production process based on modern CNC machines.

When I arrived in 1977 at *Rodenstock* the theoretical mathematical preparations were practically finished and Guilino and Barth concentrated on the final design optimization and the drafting of the patent. Parallel to the design optimization I was in charge of the physiological analysis of the new lens and the preparation of the adaptation by the optician. This included in particular measuring the optical distortion and the visual acuity across the lens surface, the development of the centering recommendations and centering devices and finally the evaluation of the visual comfort of the wearer with wearer tests. These wearer tests were comparing the new lens *Progressiv R*, with the major lenses of our competitors based on the double blind test principle, i.e. at the moment of the

interview neither the wearer nor the person examining the wearer using a questionnaire knew the special lens type worn by the test person. In order to obtain statistically reliable data more than 100 persons participated at the test. After more than 2 months testing there were 2 remarkable results : First the overall assessment of *Progressiv R* was better than for all the competitive lenses tested and second the wearers appreciated particularly the aberration-free far vision part. This was a major point for our marketing strategy. *Varilux 2* which was the prototype of the modern progressive lens was conceived as a totally aspheric lens design which substantially improved the comfort and the adaptation of the progressive lens. One less favorable characteristic was that in the far vision periphery the lens geometry showed a surplus of positive optical power. To compensate for this *Essilor* recommended, at least in Germany, some systematic corrections for the far vision and near vision power, when ordering the lens, which complicated the work of the optician. So we positioned the *Progressive R* as the refraction correct lens, a progressive lens needing no power adjustment when ordered. This was a very definite and as the launch showed successful marketing position for the first progressive developed in Germany to attack the French leader.

Close to the Eye Care Practitioner and a Difficult Launch Decision

One particularity of the ophthalmic business is the fact, that the product is not sold directly to the end user but to the dispenser, i.e. to the optician or more generally to the eye care practitioner (ECP, in the US, for example, spectacle lenses are also sold by optometrists and ophthalmologists). The optician fits the lens in the frame in the correct physiological- optical position in front of the eyes. To support the optician's work, the product development department was also in charge to prepare the technical devices for the correct prescription and adaptation of a new lens type and to write the marketing brochures explaining the lenses and providing the optician with the arguments to sell the product to the wearer. This was an extraordinary experience obliging me to analyze and understand the market situation and to define together with the sales and marketing people the market positioning of the product. To this end I was in continuous and close contact with opticians and their professional associations. There were two associations in Germany at that time, the ZVA an organization defining and representing the professional goals and the WVAO developing the scientific technical expertise. Almost every week I held a lecture for one of the regional groups of the WVAO about the various products *Rodenstock* was developing and selling. For me more important than the lecture was the opportunity to meet the opticians afterwards with a glass of wine. So I learned much about the needs of our customers, their concerns and their way of thinking. This experience was extremely helpful for my future occupation in marketing. As a result of this intense lecture activity I was nominated extraordinary member by the WVAO, not evident for a non-optician.

A major topic of these evening lectures was the introduction of *Progressiv R*, explaining its characteristics and its advantages for the optician's work and for the comfort of the wearer. Before its launch we encountered however an unexpected problem. The new CNC manufacturing process of the progressive surface was ready to build up the stock for the launch, when one of the experts of the development department discovered a tiny systematic cosmetic irregularity in the polished surface, the "Anschnitt". It was caused by the first stroke of the grinding process and was still visible after the polishing. Visible for the experienced eye of the expert who had to assess customer claims using rather sophisticated evaluation conditions. Nobody of the test wearers had criticized this

irregularity. The launch program was fixed, the marketing package was ready, a launch postponement meant loss of market share and turnover. The pressure from the sales people was very high. The manufacturing organization and its quality experts considered the "Anschnitt" as acceptable, insisting that in the tests nobody had noticed the irregularity.

In recent past *Rodenstock's* spectacle lens development resources had been grouped together in the department Physiological Optics under my responsibility. As the technical experts in contact with the client we now had to approve the launch. After a thorough discussion with Günther Guilino and the R&D quality experts we decided that as a challenger on the market we could not accept the risk and asked manufacturing to eliminate the problem before we would launch. We had some nasty discussions with the production people, but when we finally launched, at a delay of some months, we had a top quality product, ready to attack the market leader *Varilux*. The new lens was a big success on the market and for some years *Progressiv R* was number 2 in the global PPL market share ranking.

New Challenges

In the months following the launch of *Progressive R* the new product remained the main concern. Launch of new lens materials and coatings and calculate the back surface tables for extending the power range plus supporting the sales force with new argumentations covered a big part of our capacity. For a premium progressive lens not only the optical characteristics but also the cosmetic features had to be top. So we developed the *MDM-System* making it possible to manufacture *Progressive R* particularly thin and light weight. Contrary to the competing system *Precal* for *Varilux*, *MDM* allowed the optician to assess how big the thickness reduction would be and to decide if it was useful for the wearer or not. Other projects concerned a new series of aspherical lenses, at the beginning for the correction of cataract patients, later more generalized for weak and medium ametropia as well as a special lens with less visual strain for the work in front of a computer screen. Under the mid and long term aspect Physiological Optics started research work on double sided progressive lenses and application of gradient index optics for spectacle lenses.

The number of research and development projects increased rapidly, particularly for the calculation of new aspherical designs. Moreover Dr. Günther Guilino wanted to concentrate his activity on the spectacle lens and to leave his responsibility for the R&D of *Rodenstock* Instruments. He proposed a new organization to separate the resources for the aspherical geometry calculation from the rest of the Physiological Optics. This proposal was discussed among the senior people of the department without assistance of an external consultant. After several tedious and exhausting discussions a new organization scheme emerged. My future area of responsibility would have been reduced, particularly concerning the design of new aspherical surfaces. And this just when we started to explore some promising concepts of double sided progressives ([5]). I reckoned, that the perspective of the new organization would not be very attractive for me. The alternative was to leave *Rodenstock* and thus also leave the business of ophthalmic optics with my close contact to the opticians and my good knowledge of the spectacle lens market. To join the competition was not easy at that time and particularly difficult in the relatively small market of ophthalmic optics. This was a really difficult decision, because of the private aspect regarding my family.

Settling down in Munich,.....Almost

After the first experiences in a Research Institute and in the industry, *Rodenstock* represented the opportunity for a steady and solid career and family life, because all our relatives lived in the neighborhood of Munich and Landshut , about 60 km far from Munich. The family owned company was the market leader in Germany and had an excellent reputation. The organizational structure was flat, ensuring a good teamwork and information exchange. Particularly my relations to Günther Guilino and the other senior people of the development department were excellent. So after one year my wife and I decided to stay in Munich and to set an end to our previous itinerant life. We built a splendid Bavarian house in Pischelsdorf about 35 km North of Munich. On the ground-floor walls made of brick there was a wood construction for the first floor. Entering the house the living and dining room were on a slightly higher level and covered with dark-red tiles contrasting with the golden brown of the wooden beams of the roof. Living and dining room with lead glass windows were separated by a tiled stove. To start our daily work in time we had to get up at about 5 am in the morning to take the commuter train. Bärbel was working in the international marketing department of a Munich pharmaceutical company *Klinge*. Often in the evening and almost every weekend we played tennis at the Tennis Club Jetzendorf. Here Bärbel developed her tennis career. She had a great talent for motion and was mentally strong in difficult match situations. So she became the number 1 female player of the club and won several smaller tournaments. Even if I was a relatively technically gifted soccer player I was not talented for tennis. I played with big enthusiasm and ambition but by the second tour I was knocked out of the tournaments.

At that time Bärbel's parents lived at Fürstenfeldbruck near Munich. Both were born in Bohemia, Austria, Franz Otto Burian in 1896 and Berta Burian, née Leis , in 1908. From 1918 on Bohemia was part of the Czech Sudetenland . Franz Otto was agronomist and managed the agricultural estates of Austrian noblemen. In 1945/1946 when the Sudeten-Germans had been expelled, Franz Otto and Berta Burian and their daughters Bärbel and Helga settled near Munich where Franz Otto became administrator of the big estate of the psychiatric clinic Haar. In 1979 Franz Otto Burian died and we asked Bärbel's mother, Berta, to live with us in our new home. The house was relatively big , so she could live in two rooms and we had a harmonious family life. She was a very warmhearted person and supported us, when we lost a big amount of money through the fraud of our financial advisor. When we discussed the situation that I possibly would leave *Rodenstock* and so the Bavarian region it became clear that Berta would not move with us. Her other daughter Helga and her family lived near Munich and at an age of nearly 75 she did not want to leave the area, where she had lived for about 40 years after World-War II. This fact was certainly the most difficult point when taking my decision to terminate my contract with *Rodenstock*.

Berta rented a separate apartment in a retirement home in Munich and lived there until her death in the year 1996. We visited her regularly there and we could see that she was well integrated in the community and had many social contacts. I think if she would have come with us to France she would have been too isolated , particularly as she did not speak French.

One Year on Hold at Lunelle Contact Lenses

Bärbel and I finally had decided, in spite of the negative consequences for our family, that I would quit my present job, but stay in the spectacle lens business. My contract with *Rodenstock* contained

a non-competition clause, saying that I could not work for two years in the spectacle lens business. During these two years *Rodenstock* would pay 50% of my last salary. As the market was relatively small with very close contacts between competitors, it was not very clear to me how to proceed and I was not sure at all what was going to happen. The number of possible new destinations was very small, either the big German competitor *Carl Zeiss* or the French company *Essilor*. *Essilor* offered the opportunity to work in a really international company. Zeiss, like *Rodenstock*, was concentrated very much on the German market. At some occasions, like the WVAO meetings, I had already talked to the *Essilor* chief representative for Germany, Bernd Hagemeister. I called him up telling him very cautiously and somewhat camouflaged of my intention to change and if there might be some interest from *Essilor*. I had not the slightest idea how he would react, because of the existing harmony between the competitors in Germany. To my relief he was very open to this idea and some weeks later it was clear that I would join the *Essilor* subsidiary in Germany. Only later I learned that Bernd Hagemeister had a certain experience with this situation as he too had changed from *Rodenstock* to *Essilor*. As *Essilor* had no R&D activity in Germany, at the beginning I should be responsible for technical marketing aspects of the subsidiary's business, in particular prepare the communication for new product launches, brochures, technical leaflets and argumentations for the sales force.

But before I could start this work I had to pause because of the non-competition clause. *Essilor* negotiated with *Rodenstock* a reduction of the standstill period to one year. During this year I was an employee of *Lunelle* which was the contact lens daughter of *Essilor*. The subsidiary was situated in Hesse near Frankfurt/Main and so for one year I learned much about contact lenses, the *Lunelle* product program, and the fact that I personally had problems to adapt to contact lenses. For the rest of my time my wife and I were looking for an apartment at Braunschweig. It had been decided to start the small group Technical Marketing at Braunschweig, one of the two locations of *Essilor* Germany, the other being at Freiburg.

Near the East German Border

The general manager in Braunschweig was Peter Wolf, who strongly supported my start with *Essilor*. *Essilor* Braunschweig was not only a new company for me, but situated in a completely different cultural region near the iron curtain, separating West from East Germany. The subsidiary was producing organic single vision and multifocal lenses as well as the second tear progressive for the whole German market. I met a very experienced team, where my expertise was very welcome. My responsibility covered both subsidiaries, i.e. also for the products manufactured in Freiburg which was essentially *Varilux*. The drafting of sales brochures, publications in the professional magazines, lectures for the opticians and the WVAO was the same type of activity as in the years before, but now in the name of the company, which had invented and developed such innovative products as the progressive lens and the organic lens material. In order to evaluate the parameters of our products and those of the competitors we created a small measurement laboratory and we hired a young engineer, Erhard Kampmeier, for the management of the lab. Together with him we conceived a device to measure the isoastigmatism contour plots, describing the surface geometry of progressive lenses. At that time the battle about the performance of progressive lenses, using contour plots as proof, was an essential part of the technical discussion. Supported by a small engineering firm near Nuremberg we designed within about 6 months the 3D measurement apparatus for about 100 000,- DM. It was about 10 times less expensive than the big commercial

machines . Now we could establish the contour plots of each new progressive directly after its market introduction and were not dependent from information from the parent company in Paris. Other measurement devices, as for example for the evaluation of coatings, were already available and so the Technical Marketing had all the technical means to support the sales force on the market as well as the production and quality organization. In only a few months our expertise was fully recognized and there was a regular and continuous demand for the assistance of the new group.

Our private settlement was a little more complicated. For the administration of our house in Bavaria we appointed a property manager and in Braunschweig we kept looking for a new home in the City. We found a comfortable apartment, but for people accustomed to the rural lifestyle it was a little too noisy. So we decided that we should return to the country-side , where we rented a renovated farm-worker house in an isolated location near a farm. The new home was situated amidst oak and chestnut trees and in winter nights we had roe deer and red deer searching for chestnuts and acorns only a few meters in front of our windows.

Braunschweig was founded in the 9.th century by the Saxons. Its most prominent medieval personality was Heinrich der Löwe (Henry the Lion) of the House of Welf in the 12 th century. The fight between the Welf and the Staufer dynasties for the title of the Roman German Emperor was one of the outstanding events of the German middle ages. In World War II bombing destroyed Braunschweig to almost 50% (the center to 90%) and so only a few monuments as the castle and the dome as well as some half- timbered houses recall that Braunschweig was the largest timber-frame city of Germany. So it took not very long to visit the sightseeings of Braunschweig and we spent the weekends to explore the region north of the Harzgebirge which to a certain extent was similar to what we had experienced near the Netherlands border during our stay at Oberbruch. We discovered the picturesque small city of Wolfenbüttel, nearly not damaged by the war, which gives an idea of what Braunschweig has looked like before the bombing in 1944. But time to learn the region better was short because in the middle of 86, less than one year since we arrived at Braunschweig, Peter Wolf told me that Gerard Cottet ,CEO of *Essilor International* (chairman was Bernard Maitenaz, the inventor of *Varilux*) was interested for me to come to the head office at Paris to strengthen the Innovation Team under William Lenne.

For my wife and me the possibility to work and live at Paris was a dream. As we both spoke an acceptable French we were not afraid to meet difficulties to adapt and integrate. The news were less exciting for our landlord at Warxbüttel, because we had stayed only for some months in the newly renovated home.

Before we were looking for a new home in France we sold our Bavarian house in Pischelsdorf. The administration did not work as it should . The first renter, seriously selected still by us personally, disappeared in direction South America. He was in financial trouble, as we learned later, which was confirmed by the fact that he took our curtains including the curtain rods.

Arriving in Paris.

Essilor's head office was situated at Créteil, which was a community in the southeast banlieue of Paris. As a big part of the banlieue and different from Paris it was not beautiful and characterized by a large number of apartment buildings of more than 25 stories. These buildings were mainly built in the years after the war until 1975 when the population of Créteil grew rapidly. The architecture of these buildings was practical but because of its dimension cold and impersonal. I remember when Bärbel and I drove through Créteil she was really depressed by the impression to see our future home there. But there were also more attractive parts of Créteil like the area around the lake of Créteil. I lived there during the first weeks of my work at Paris in a Novotel whereas Bärbel still stayed in Germany. In the evening hours I kept looking for a new home in the country. A big number of the people working in Paris is living in the country, and as we were looking for the independence of a house I was absolutely obliged to search on the countryside. This period was a little adventure. The places having real rural character were too far from Paris, so I visited homes in smaller communities in an area 20 to 30 kilometers southeast from Paris. Though not knowing the region, I searched without a real estate manager and I discovered at the same time new homes and new villages. I was offered farm houses, an apartment in an old castle which had to be restored, houses in the new impersonal dormitory settlements which were built continuously around steadily growing Paris. And finally one evening luck stroke in Yerres, a small town of about 30 000 inhabitants in the département Essonne. The French administration divides the country in 27 regions (of which 5 are situated overseas) and the regions are subdivided in departments. Every department has a 2 digit code. The code for Essonne was 91. The house situated in a quiet side street was built in Louis XVI style with dormers emerging from the black slate roof. The outer walls were built of natural stone. The house was built by a now retired craftsman Monsieur Bonneville, who had restored French chateaux in the past (and there are plenty of them in France) and who was a carpentry specialist. Dining and living room were in a line connecting the two gardens in front and behind the house. Between the two rooms there was a big open fire place framed by rich beach wood decoration and from the end of the living room a wooden staircase was spiralling to the first floor. The distance from Yerres to Créteil was about 10 km and it took me about 30 minutes to go there by car, an almost ideal situation for Paris.

Essilor International and the German subsidiary had agreed that my mission in Paris should at first be limited to 2 years. After that *Essilor International* and I would decide if the mission should be extended. I was reporting to William Lenne, Director of the Innovation department, comprising Marketing, Communication and the Research departments. Michel Gillet was in charge of the Marketing department, named DVO (Developpement Verres Ophtalmiques). He was one of the "companions" of Bernard Maitenaz during the memorable period of the *Varilux* invention and market introduction. Starting in the 1950s with the first industrially manufactured progressive *Varilux1* until the end of the 1970s with the successful battle to implement *Varilux 2* as the most successful correction of the presbyope, Michel Gillet was on the frontline explaining the principle and functions of the new lens, showing how to measure and to adapt it and to help the optician in the case of problems. Numerous brochures, argumentations and publications were of his origin. Now as the progressive lens principle was accepted by the market, the goal had to be to defend the *Essilor* leadership against the upcoming competition like *American Optical*, *Rodenstock*, *Zeiss* and particularly *Sola*, a very clever and aggressive Australian- US company. *Varilux 2* had been launched in 1972 and its image had to be updated, a new design had to be launched on the market. And my

mission was to prepare the marketing environment of the new lens with the code Gamma (code name changed).

The Multi-Design Concept

When I arrived at the head office the new Gamma design was set to a large extent. Up to that time the geometric designs of *Varilux* and all the competitive progressives had been conceived as the optimum single design for all presbyopes and all activities. So for example when the presbyope became older and needed a stronger reading power (the expert term is addition power) his new progressive had a similar geometry to his previous lens only with a higher near add. After the *Varilux* invention *Essilor* made clinical investigations with special groups of presbyopes, for example specific age classes or particular activities as work in front of a computer screen. These studies showed now that for these specific needs also specific designs were the optimum solution. So the idea behind the new Gamma concept was, that for each age class, i.e. for each add should exist a specific design to obtain the maximum visual comfort independent from the presbyope's age. Besides its evident physiological benefits this concept represented a wonderful marketing story and was the base for the product's market positioning. In the product name *Essilor Varilux Multi Design* or shorter *Essilor VMD* the term Multi Design expressed the innovation that for each add power a specific design had been conceived whereas the progressives up to now represented only one single design (Mono Design) which for each add was adapted in a geometrically similar way. The product name was a compromise between subsidiaries and central Marketing. While the subsidiaries wanted to benefit in first place from the prestigious *Varilux* brand, the goal of the parent company was to implement *Essilor* as the umbrella brand. After long and tedious discussions the compromise *Essilor VMD* was retained which put the name *Essilor* in front, but left the liberty to the markets to highlight the *Varilux* brand. The multi design concept represented a very powerful and clear Unique Selling Position.

In the middle of 1987 after about 6 months at Paris I had a first big presentation in French at the subsidiaries meeting organized at a place near Paris. Several US and European competitors had recently launched the first competitive progressive lenses which had a more innovative image than *Varilux 2*, which had been on the market since 1972. There was a need for a new *Varilux* in order to defend the leading market position of the brand. I did the presentation in French and at that time my French was the result of 6 years French education at school and an intensive course some months before my arrival at Paris. Nevertheless the power of the VMD message made forget the shortcomings of my French with German accent. The ca. 200 people were excited about the new product in development.

The next months were filled with launch preparation. A new product launch is an immense and highly complex project. A first major task is creating product stocks at the head office and at the subsidiaries. The technical product to be stocked is the semifinished lens. It is named semifinished because the front side of the lens is finished with the progressive geometry and the backside is ground and polished at the prescription laboratory of the subsidiary according to the individual ametropia of the patient. The total ametropia range is subdivided in about 7 power ranges, each with a specific semifinished and a specific front curve, called base curve. Combined with 12 add powers from 0.75 diopters to 3.50 diopters taking into account the various degrees of presbyopia results in 84 different

articles to put on stock. And as the product is launched in different lens materials (mineral glass, organic, photochromic, high refractive.....) you have to multiply with the number of materials.

The marketing plan was not to eliminate the current *Varilux* product, but to keep it on the market next to the new *VMD*. For our Logistics department this meant that the number of stock items would approximately double for the all purpose progressive. Price and promotion were other essential marketing elements we had to fix and to elaborate. In order to benefit from the two tier strategy the relative pricing between *Varilux 2* and *VMD* was a paramount issue. It was evident that the price of the new lens should be higher than for the current *Varilux*, but if *VMD* would be positioned too high its market penetration would be too low whereas a too low positioning would mean an almost 100% substitution. In both cases we would not reach the maximum possible overall gain of the *VMD/Varilux 2* range. As markets and their competitive situation are different the prices were fixed individually in close collaboration with each subsidiary.

In the ophthalmic lens business the manufacturer sells the product to the optician or optometrist who in turn sells the lens to the patient. Our communication had to address both customers, the optician and the wearer. The message to the optician was clear: thanks to a specific design maximum visual comfort for each add, for every age of the presbyopic wearer. Basically the message to the wearer was the same: "Maximum visual comfort for every age". But it was more difficult to explain the progress of the new lens compared to the progressives up to now, as the notion of the geometric design was not known to the wearer.

The Revolution Continues: A Big Show in the US

The *VMD* launch was a wonderful opportunity to learn the marketing tools in real life, how to specify, position, promote and launch a new product. I had already participated in the progressive lens project at Rodenstock developing and launching the *Progressif R* and had written the technical Marketing brochures. But now I was not only responsible for the total Marketing environment of *Varilux Multi Design*, but more generally the responsible product manager in the launch preparation meetings with R&D, Logistics and the sales departments for France and the subsidiaries. And the best way to learn is practical experience. Later when we built a well structured Marketing department, we hired a number of young Marketing specialists coming directly from the University or as frequently in France from the Grandes Ecoles. I remember young people with excellent marketing knowledge, but taking decisions which were detrimental to the product because they did not know the product well enough and they did not know this particular market.

We launched the *VMD* in 1988 and I particularly remember the introduction in the USA, where the *VMD* was called *Varilux Infinity*. We had two big meetings with our lab customers at San Francisco and San Antonio. Looking back I have the feeling these were some of my most successful product presentations I ever did. Convinced of the new innovative idea of the Multi Design concept, inspired by my new role with Essilor head office and together with the US typical, professional organization and presentation of the meetings as well as the enthusiastic US business people in the auditorium, I was at the same time under tension and relaxed as rarely before and afterwards. The theme of the event was "The revolution continues" and at the end of the meeting the Multi Design message had convinced both the lab managers as well as our US sales force.

I was already familiar with the beautiful place of San Francisco as it was the location of the US Varilux subsidiary but this trip made me discover the fascinating city of San Antonio, the oldest city in Texas, founded by Franciscan monks from Spain. The San Antonio river meanders through the city and the Essilor team celebrated the successful product introduction in one of the numerous restaurants of the picturesque River Walk after the event. I was very impressed as an old western fan, when I visited the old mission of The Alamo where in 1836 about 200 Texans under the command of William Barrett Travis and James Bowie lost their lives in the battle of independence of Texas from Mexico.

Building a Marketing Department

In the middle of 1988 Michel Gillet retired and the end of my mission in Paris, December 1988, came nearer. To my big surprise William Lenne told me that he would also leave Essilor at the beginning of 1989 and that he would be replaced by a Marketing manager being responsible for the DVO and for the communication department. This new person would report directly to Gerard Cottet and I should be responsible for the DVO in charge of the product marketing. After a discussion with my wife we decided to stay at Paris. With my knowledge and experience it was more natural to continue at the head office than to return to the subsidiary. I had built very good relations to the R&D, Logistics and sales departments and we worked efficiently together and it was a very attractive challenge to take marketing responsibility for the totality of Essilor products. Paris was a dream for Bärbel and her passion to discover new countries and cultures and in the meantime she had also started to establish contacts with other German women living around Yerres.

The new marketing manager was Hubert Sagnieres, who held an economics degree and an MBA of the business school INSEAD at Fontainebleau. He was distinctly younger than I was, but had already had several years' experience in leading positions in the industry. The *Essilor* Marketing culture was only in the start up phase and when I had agreed to take over the DVO management my condition was that the manpower of the department would be increased. It was decided to wait until the new Marketing manager had arrived. Sagnieres was a very dynamic person and only a few weeks after his arrival we started our search for a couple of new product managers. At the end of 1989 the DVO counted 6 product managers, not enough in the long term to take care of the complete range of lens substrates and coatings, but enough to start to develop and to implement a marketing culture within *Essilor*.

In the past *Essilor's* product ideas were mainly R&D driven. *Varilux* and the plastic substrate *ORMA* were two outstanding examples, but also *Alpha*, the progressive lens for the emmetropic presbyope and *Datacomfort* the special lens for the work in front of computer screens were the results of ample research work on different progressive lens designs.

The main task of the new Marketing department was to define new marketing opportunities for *Essilor*, a change in the way the company had been working in the past. At the beginning there was a certain lack of confidence of the R&D teams regarding the competence of the new Product Marketing department, consisting mostly of unexperienced product managers with a physicist as leader. Each product development caused a big investment of money and manpower. Even as the successful VMD launch had helped us to gain some trust, they asked us to present a new product strategy in order to plan and establish simultaneously their R&D policy. We had some tedious but eventually fruitful discussions. The result was a three tier range structured by the lens performance

and price. This scheme allowed the R&D teams for instance to define their projects to optimize the new high index substrates and sophisticated surface coatings. These first years of the cooperation R&D and Marketing were characterized by a continuous challenge of the product plan by a very critical R&D team, which regularly referred to the problems caused by limited resources. So the New Product plans at that time consisted of a rather restricted number of about thirty products, but with a clear and detailed description where the product had its place in the product range structure , completed by figures for volumes and price positioning.

Comparing this pioneer period at the beginning of the 1990's with the situation around 2000 until 2005, when I was responsible for the Quality organization and participated in meetings between Marketing and Development, Production and Logistics departments the situation had fundamentally changed. These meetings were now dominated by our Marketing department putting a permanent pressure on the resources departments referring to the competitive situation on the market.

Reorganizing Marketing.

Hubert Sagnieres was a man with clear ideas and it was easy to work with him. There were only two departments under his management and the other group next to the Product Marketing DVO was the communication group, neatly smaller and less implicated in daily business. So with his challenge to implement an efficient Marketing function within Essilor it was quite natural that Hubert Sagnieres was very close to operational details of DVO projects which led inevitably to some disagreements about how to organize work. Sometimes I felt restricted in my preferred way to work with the product managers. Looking back today I think with a little more flexibility from my side this would not have been a serious problem. But as I also had the ambition to prove the performance of the new Product Marketing I acted not always as wisely as I would do today.

This situation was certainly one major reason for Gerard Cottet to launch a project with an external consultant to reorganize the Marketing department. The consultant in charge was the Boston Consulting Group, which from now on I would meet regularly during the following years when *Essilor* adjusted its structure. Generally, during a first phase, major organizational changes were prepared by a consultant, making an analysis and giving a recommendation, which served as basis for the decision of the senior management.

End of 1990 the BCG proposal was: first to split the former DVO into three groups: single vision lenses, progressive lenses and lens materials & coatings , second to maintain the communications section and third to create two new responsibilities, for Medical Relations on one hand and for the analysis of Distribution and Competition aspects on the other hand. This new structure was clear and offered sufficient space for the different executives to cooperate creatively and efficiently. Gerard Cottet asked me to take charge of the progressive lens section with the special objective to defend efficiently the leading position of *Essilor* on the market of progressive lenses, which was under fierce attack at that time.

At that period the sales of progressive power lenses (PPL) represented distinctly more than 50% of *Essilor's* profit. When in the late 1970s and in the 1980s the competitors *American Optical*, *Rodenstock* and *Zeiss* launched their own PPL brands, the initial 100% *Essilor* market share necessarily decreased. At the end of the 1980s the US PPL market was becoming the world's biggest regional progressive lens market, so the US market was paramount for *Essilor's* world leadership. It

was from 1984 on when the *Essilor* US number one position was seriously at risk when *Sola* launched its *VIP*. *Sola* was an Australian/US American company with a very aggressive and clever marketing strategy. Using comparative advertising, not prohibited in the US, they sent a message to the market that *VIP* was a more innovative and more reliable lens than *Varilux*. So in the beginning of the 1990s the competition's progressive lens sales in the US were about 60 % of the market , of which *Sola* had the lion's share. *Sola's* organic turnover growth was nearly 15% with an excellent profitability. *Sola* was a real threat for *Essilor's* leadership, particularly in the USA.

The Challenge Varilux Comfort

The launch of *Varilux Infinity* in 1988 was supposed to renew the image of the *Varilux* brand and stop the market share erosion. In spite of a successful market introduction *Infinity* could only slow down the loss of market share but not reverse the tendency. Also in Europe *Essilor VMD* was not the expected success on the market. A close investigation showed that the *Multi Design* concept was really a superior solution for the wearer, but that a bigger number of parameters had to be taken into account for its optimum realization. So when I took over the Direction of the Presbyopia Marketing department, my mission was clear. The priority project was to launch a second generation of the *Multi Design* concept. I will call the new lens already here in the text with its later trade name *Varilux Comfort*. Sometimes launching a new product the discussion of the trade name is one of the most controversial and time consuming issues, wicker tongues use to say because everybody has the competence here to claim an opinion. A particular point in this dispute was the fact that "comfort" was the correct spelling in English or on some big markets like Germany but in French the correct spelling is "confort". But finally *Essilor's* international dimension was decisive for the brand.

It was a stroke of good luck, that at this period there was a number of young people in the R&D as well as on the Markets ready to accept the challenge. Under the leadership of Jean Louis Mercier a young team of scientists developed a new method to conceive new progressive geometries better and faster, adapted to the viewing needs by an iterative process directly involving the wearer, the Design Loop. In order to apply this method efficiently they had put new tools in place to explore the visual process of the presbyope more profoundly on one hand and to calculate aspherical surfaces with a high degree of geometrical flexibility on the other hand. So Christian Miegé and his team succeeded in measuring the complex relationship between visual comfort of the presbyope and his head and eye movements. Jean Pierre Chauveau and his research colleagues put a calculus in place to create surfaces with very smooth transition sections between areas of different geometry characteristics.

In the middle of 1991 we established functional specifications, maintaining the fundamental idea of the *Multi Design* concept, but integrating all the innovations recently achieved by the R&D teams. The result was a new type of progressive lens combining the advantages of the "hard" and the "soft" lens design. Until now there were two distinct kinds of progressive lenses: on one hand the so called "hard" progressive lens with large viewing areas for far and near vision but with only a small section for the intermediate distances, not so easy to adapt for dynamic viewing conditions. The other lens type was the "soft" progressive design with very favorable conditions for peripheral and dynamic viewing conditions, but with somewhat smaller areas for far and near vision. Now with *Varilux Comfort* we launched the first lens combining large areas for clear vision in the far, near and intermediate distances with easy adaptation.

The market pressure was growing continuously. We experienced a dramatic loss of market share, particularly in the US. But Essilor was up to the challenge. Under the professional leadership of project manager Denis Blandin the departments R&D, Production, Logistics, Marketing and the subsidiaries did an almost perfect job. After a very promising market test in France, Netherlands and Germany we launched *Varilux Comfort* already in 1993 in Europe and in 1994 in the USA. It would have probably been more efficient first to launch in the USA, where *Sola* hurt us most, but some key people in North America were so convinced by the certainly powerful Infinity message, that they hesitated to replace Infinity. But at the *Varilux* subsidiary a new generation of marketing and sales people had now strong influence over the activities and after a thorough analysis of the evolution of market shares, they recommended to launch *Varilux Comfort* as fast as possible in the USA. These people organizing the 1994 launch were Michael Ness, VicePresident Marketing and Bob Colucci, VP Sales. It was a big advantage that they were supported by Dominique Meslin of Technical Marketing. He had worked as product manager in the Central Marketing Department and was one of the most experienced experts regarding progressive lenses.

With the successful launch of *Varilux Comfort* *Sola* lost its competitive edge concerning the product and Essilor regained almost 10 % of market share in just over 5 years. From 1993 on the cumulated sales of Varilux showed a sharp increase and between 1993 and 1999 grew by 80 % from 120 million to 214 million. An estimation indicated, that compared to the rhythm of the VMD/Infinity sales the introduction of the Varilux Comfort lens was equivalent to incremental sales of about 15% until 2000.

Today *Varilux Comfort* is the best sold progressive brand ever. It was one of the financial cornerstones for the future strategic moves, which made *Essilor* the uncontested world leader in spectacle lens optics. In 2010 the worldwide progressive lens market had a volume of nearly 150 million lenses. Today *Essilor* is the market leader for progressives selling 1 out of two progressive lenses sold worldwide. As history showed, this success is not only due to the advantage of being the inventor with ability to renew the brand image, but also to the commercial policy of integrated manufacturing and proprietary subsidiaries.

Fulfilling a Dream

Shortly after the Central Marketing reorganization Hubert Sagnières left Paris in order to take charge of the Canadian subsidiary and in exchange Jacques Cuchet, former head of the subsidiary, became Marketing Director at Paris. Canada was a very competitive modern market, in which a big part of the lenses sold were value added with anti-scratch and anti-reflection coatings. The technological leaders in development and production of coated lenses were the Japanese manufacturers as *Hoya*, *Seiko*, *Nikon* and others. In Europe antireflective coatings had the image of a very esthetic but fragile finishing treatment of spectacle lenses, which could be rendered mechanically more resistant by a hard coating, i.e. a further expensive add on. By contrast the Japanese companies succeeded in developing and marketing “all in one products”, antireflective and scratch resistant at the same time. This product preserved its antireflective features for a longer time and, as it was only one single add on, it was easier to sell with a higher profit per product, as for a common AR coating. So when Jacques Cuchet became responsible for the *Essilor* Marketing Plan his top priority was to develop a new premium coating for the *Essilor* lenses. As the coating researchers had already done ample investigation, the technical definition of the new product was quickly done. Marketing definition took a little longer. As the new coating was a premium add on, some of the new product managers saw it exclusively applied to top *Essilor* substrates, like thin and light high index materials. It took some discussion to discard this concept, as it would have been detrimental to total sales and benefit. So *Crizal*, which was the brand of the new product, was launched on all substrates and became a tremendous success. Jacques Cuchet became the father of the second strong *Essilor* brand after *Varilux*.

Jacques and I were rather different in our personal characteristics, he was the extrovert French and I was more the scientific German, but regarding concept, planning and organization of our work we were very similar and so Jacques asked me to take care not only of the progressive lenses, but of all products. From this time on I worked directly with about 15 product managers. Some of them were hired only recently and came from marketing organizations or from Marketing Schools, trained for product positioning and communication. Others came from R&D and were more technically oriented, but all inspired by the enthusiasm to create innovative products and their Marketing environment. Our mode of operation was the classical Marketing process to define and develop a new product. Starting with a survey to uncover and better understand a need of the wearer or optician, defining the message to communicate the benefit of the product for the wearer and the ECP, determine the price positioning, taking into account competing products. With each product launch we perfected understanding and control of the various elements of the Marketing Mix.

To organize work and to develop adequate tools was a little less motivating. On this field I took a strong leadership. The required product features were put down in the “fiche de produit”, a compact technical specifications for the operational departments, particularly R&D. As R&D capacity was the bottleneck, the economic analysis was key for product priority on the development plan. So we learned to complete the Product Plan by tedious pay-back calculations. Sessions with the promotion agencies to test the messages to our customers were more inspiring. We set up Marketing Reporting meetings as an internal tool of organization and communication. Together we analyzed and discussed the progress of our different projects. At that time we managed between 30 and 50 projects, so a Marketing Reporting lasted a whole day. In 1994/1995 as a result of all these measures

we had a well organized and efficient Marketing team, widely known and acknowledged by the head office as well as the subsidiaries .

In 1991 Gerard Cottet had become chairman of *Essilor* and Xavier Fontanet took his role as CEO, responsible for operational activities. Jacques Cuchet was reporting to him. Xavier Fontanet had started his professional career as consultant of the Boston Consulting group. Therefore he had a strong strategical background. As a newcomer he did not know the spectacle lens market, neither product nor customer. He transferred responsibility for product oriented activities like R&D and Marketing to Serge Pinon, Logistics Director, with whom he shared the dynamic way of tackling problems. So R&D and Marketing were now in the same hand and in the hierarchy of the company Marketing stepped down one level. Jacques Cuchet did not agree with this restructuration and left for retirement. He was replaced by a young talented person from Boston Consulting Group, who stayed for about one year before he went to the USA to develop *Essilor's* Polycarbonate activities. Now Serge Pinon proposed the responsibility for Central Marketing to me, taking particularly into account the success of the *Varilux Comfort* launch. For me this was fulfillment of a dream, taking responsibility for the organization, that I had built together with Hubert Sagnieres and Jacques Cuchet.

A particular work of this period was to put the products for a channel strategy in place. In the USA next to the *Varilux* distribution for progressive lenses, there was the *Silor* network for selling organic single vision and multifocal lenses. The *Varilux* distribution was restricted to a limited number of selected labs, so that a big part of the *Silor* customer base was without an *Essilor* progressive product. A similar situation in Europe, where already in the 1970s another French spectacle lens manufacturer *BBGR*, had merged with *Essilor*, but kept the independence of its brand. When I arrived in Paris in 1986 first progressive lens designs were already sold by these second channels, but with the arrival of *Varilux Comfort* were not good enough anymore and recent developments of *Essilor* R&D had to be taken into account. With the *Selective/Natural* design we introduced a top design for the second networks. As our position as market leader made it also necessary to be present in the segment of non branded products, the distribution channel strategy strongly increased the dimension of our product portfolio.

Some 5 to 10 years later while I was responsible for Quality this situation had changed fundamentally . Philippe Alfroid, the *Essilor* CEO had corrected the organizational error to include the Marketing organization under the same leadership as R&D and now Marketing was reporting to the CEO. Alfroid postulated a new paradigm, which was very simple and efficient: R&D had the mission to develop all the product demands that Marketing deemed necessary in order to defend and increase market leadership. Resources and project management process had to be adapted. R&D was not a capacity bottleneck anymore, the realization of the Marketing product plan was a must. The philosophy was now, *Essilor* is the uncontested market leader and every major product type on the market has to be part of its portfolio. So the product plan was a matrix with axes for all major designs, materials and coatings weighted with the importance of the distribution channels and the only negotiation was about the launching dates. There were no detailed economic analysis anymore to support the Marketing demand. Pressure had been entirely shifted from Marketing to R&D.

Lens Materials and Strategic Decisions

It was planned, that I should take over the management of Central Marketing during the second half 1995 . About that time I learned to my surprise that Serge Pinon would take his retirement, so he was not very active regarding this organizational change and I had to push the communication of my new responsibility a little. Through my long experience in the Marketing department I had a very clear idea how to structure the organization. The manager of the Competition and Market Analysis Group, a talented young man, seemed to be the ideal candidate to lead the group of product managers. Some people of senior management however thought it better to add external Marketing experience and so we hired a young woman who had been Marketing Director in a company for household appliances. To manage a group of lens market experts after such an experience needed a certain start-up time and at the beginning, even with my strong involvement, the Marketing Reporting meetings were not really a success.

With the retirement of Serge Pinon the position of vice-president of R&D would be vacant and a successor had to be nominated. As successor, Jean Carrier, a highly qualified man with a combined education in general engineering and general management, had been particularly prepared in the R&D department. As already mentioned *Essilor's* number one competitor was *Sola* and *Sola* was probably superior in some respects. They had a simple but creative product portfolio, an aggressive Marketing policy and an excellent profitability. For Xavier Fontanet *Sola* was a model to learn from.

At the beginning of his activity at *Essilor* Xavier Fontanet concentrated also on a strategy of new, future lens materials and the economy of their production. He had initiated the purchase of a big Polycarbonate manufacturer in the States. The remarkable characteristic of Polycarbonate is its big shock resistance being very advantageous for goggles for work and sports as well as for kids eyeglasses. For a market leader this purchase was logical as in the USA, according to The Food & Drug regulations, also for spectacles for normal use very high protection is required. The goal was now to make Polycarbonate also a high value brand for the rest of the world. But there was an obstacle to overcome. Compared to traditional lens materials the chromatic aberration of PC was greater, which reduced the peripheral optical quality of PC lenses. There were intense discussions about this issue and I remember a meeting where a slide was shown, which compared the poor success to promote the PC brand in Europe with Salieri's trial to eliminate Mozart and the slide was framed with small daggers dripping with blood.

One strong product in *Sola's* portfolio was a lens substrate *Spectralite* which represented a very clever material compromise for the USA market because it was high index, had good optical quality and was shock resistant corresponding to FDA requirement. The equivalent substrate sold by *Essilor* in Europe was not yet complying with the FDA standard, but still in development. *Essilor's* senior management was concerned that *Sola* would win the strategically important fight on the battleground of materials. *Sola's* R&D director was a chemist and the future VP for the *Essilor* R&D had an education in General Engineering, highly qualified, but was not a chemist.

In the second half of 1996 Xavier Fontanet invited me to a lunch, where he told me that he would need me to better observe and influence the evolution of international standards. Recently the European standardization organization CEN (in cooperation with ISO) had decided, obliged by a European Directive, to create a new mechanical resistance standard for lenses sold in Europe. This

standard was less severe than the FDA drop ball test in the USA. Nevertheless the center thickness of a part of the lens range sold on the market had to be increased. As the situation was the same for all competitors this represented no competitive drawback and also the following years proved that this norm had no influence on the market. The objective of the European Directive was to protect the health of spectacle lens wearers.

Xavier Fontanet had the feeling that competition was going to manipulate Essilor. My response was that it was no problem to include the ISO standards work into the activities of Central Marketing. Fontanet was of the opinion that this responsibility was a responsibility in itself fitting in the activities of the Quality Department and he proposed that I should take the leadership of the Quality department. Concerning Central Marketing, I learned, that Jean Carrier should be my successor. Xavier Fontanet emphasized to support in future particularly the newly created function and after some tenacious discussions, also with the new head of Human Resources, I accepted.

One year later the new head of Human Resources had left the company. In the following years the *Essilor* ISO Team together with the other ISO –members built a simple and efficient standardization strategy for the spectacle lens market. During this period I took regularly the initiative to inform the top management meeting in the Comex about the recent progress of ISO standards.

Paying the Bill

Looking back today, it is obvious that only a few people knew the real background of what had happened. During some big meetings of Senior people it was communicated, that the change was necessary to support more efficiently the evolution of international standards in the sense of a global market. To exchange the responsibility for Marketing for the responsibility for Quality and Norms was no promotion in the context of the *Essilor* culture. Accordingly I did not get any congratulations, but I was not asked any questions either. Most of the people thought probably, that there was a relational problem. This was not necessarily a good start to take over the Quality & Norms Department. Furthermore the Director of Quality was informed only a few days earlier without any explanation that he was not responsible for the worldwide organization anymore.

At that time I had no boss to assist me and so I was exposed to the greatest organizational disorder of my professional life. This influenced not only my professional activities, but also my private life. To lose what I had built during many years was a big disappointment, but my wife helped me to see, that there were still many positive elements in my life with *Essilor*. Today it is very clear to me that one reason for this development of events, even if there was no direct causal link, was my perception of business.

For a long time I was entirely convinced that being good in business meant almost exclusively personal performance, specific expertise, particular skills. This perception also influenced my relation with people I worked together with. In order to have a satisfied and motivated team I made strong efforts providing the staff members with means for an independent and efficient management of their product portfolio, assessing their work correctly and fair as well as developing their salaries. The cooperation with my colleagues from the other departments in the project meetings was efficient and successful. But beyond these pure business relations my personal contacts were rather an

exception. For my way to work I needed independence and was lucky that my bosses left me much freedom for my responsibility. I never tried to build my career on personal relationships. Everything I expected was a correct and fair assessment of my work. But this independence brought me sometimes even in conflictual situation with my bosses and made it difficult to build a close personal contact.

I had neglected in a gross manner an essential part of daily business relations. This was particularly serious in France where often problems are discussed and their solution at least prepared at meetings with a certain personal, private character, like meals for example.

But at that time my ranking of priorities in business life was exclusively performance oriented, so there was still much to learn. My new responsibility for our worldwide Quality organization with all its complex structure across the different fields of expertise and different geographic regions, where I had no hierarchic power, was the ideal position to learn more about human relations in business life.

Entering a New World, Quality and Customer Service

ISO defines the attribute "Quality" as the degree to which a set of inherent characteristics of a product or a service fulfills requirements, which are fixed according to the needs or expectations of the customer. As any definition this description sounds extremely sober and theoretical. It is nevertheless the crucial element for the satisfaction level of a customer. For each project developing either a new product or creating a service innovation the targeted quality is fixed in its specifications document. This document is now the reference for the work of the project team and in its efforts to reach compliance with these requirements it is supported and controlled by Quality experts. I use the unpopular word "control" on purpose because it is this characteristic which makes the job of the Quality expert sometimes a little difficult.

At that time *Essilor*, as many other industries, had already started for some time to control quality generally not by sorting out defective products, but by controlling the production process. Furthermore it was not only considered the production process, but all the phases of the product life cycle, as the research/development process and the marketing process. In any company everybody will consider the quality function as being absolutely necessary, but nevertheless the cooperation between the Quality department and the operational divisions sometimes proves complicated. The activity of Quality people implicate supervision and control and for certain projects under strong time pressure the big powerful operational divisions, occasionally have the impression that the quality requirements are too stringent and make them loose time. Therefore quality departments need not only a high degree of sensitivity in their negotiations with the divisions, but in particular a strong commitment by General Management to the Quality concept and the Quality Plan. When I took over the responsibility of the Quality & Norms organization, there was a central department taking care of all the essential product quality aspects on a worldwide basis as well in the mass production as in the local prescription manufacturing. As regards the Norms, which were the official reason for my move from Marketing to Quality, there was one person responsible for the topic of national and CEN/ISO standardization.

A First Step, a Decentralized Organization.

The original Central Quality department was organizationally attached to the Scientific Director Patrick Bozec . Patrick, former head of R&D, was also General Secretary of the Comex, *Essilor's* Executive Committee, the monthly meeting of the chief executives of *Essilor*. For my project to reorganize the Quality structure Patrick left me a high level of freedom and independence. His conviction was, that responsibility for the quality of a piece of work, a product or a service, should be linked as close as possible to the person or organization, being responsible for the work. I think this was the right idea and particularly in the current and special organization, where Quality was not directly represented in the Comex.

So the quality structure, as it was, had to be reorganized. In practical terms this meant to decentralize the operational activities i.e. that R&D, Operations and the regional lab organizations should get their own quality departments and that the central unit should maintain the role of coordination and animation. The R&D and Production departments were very interested to replace external quality control by a quality group under their own responsibility, meaning more flexibility for them. The situation of the continental markets (called zones in the *Essilor* organization) Europe, USA and Asia- Pacific, to name the most important among them, was more complicated. Their production was done in local labs of the different countries representing a region. Each lab had its own small quality control unit. The supervising structures of the regions were very different, on one hand a big well- structured Quality department in Europe and in Asia on the other hand a small engineering group, also solving quality problems. For the zones which were managed by sales people, the need of a worldwide homogeneous Quality structure for the labs (for example to perform a benchmarking from continent to continent) was not evident. So it was hard to convince them to invest in resources for an effective decentralized regional Quality organization. It was up to me to do this and it took several years until the decentralized organization was put in place in all the zones with their different distribution channels.

The heads of the different decentralized departments were all experienced quality experts having learned their business from scratch and were battle proved by their daily work of ensuring quality in projects under permanent time pressure by the market: Michel Jullian leading the R&D Quality team, Philippe Melget, a great Quality talent and responsible for the Quality experts of the Operations' department, Daniel Steigelmann for the European zone, Michael Vitale for the USA and my friend Kevin O'Connor for the Asia- Pacific region. They formed a truly global organization covering all operational activities of the company on every continent .

Developing ISO Work on Spectacle Lenses

But before I could wholly concentrate on reorganization of the Quality department, I had to bring *Essilor's* activity in ISO standardization to the attention of *Essilor's* top management . ISO is the International Organization of Standardization creating international standards with common requirements, specifications, guidelines for products and services for global trade, eliminating trade barriers. As ISO Standards are voluntary, big markets as the USA and China had and still have sometimes their own national standards with certain specific requirements.

At that time there was a team of *Essilor* R&D and Quality experts coming from head office and the different zones, who participated as members of their respective national delegations at ISO. The convenor of the ISO working group "Spectacle Lenses" was the coordinator for the *Essilor* ISO team. When I analyzed the work of the *Essilor* ISO team, I came to the conclusion, that they did a good job, except that the projects and their results were not communicated and explained in a systematic way at top management level. Therefore the main change to be done in future was to keep the Comex members regularly informed about the different ISO projects and to include their feedback into our strategy. At the beginning I tried to do this by participating several times at ISO meetings as an *Essilor* team member. This was not entirely new to me, as I had already participated in standardization work during my activity with Rodenstock. As in the past I found that discussions were often characterized by a too cautious political atmosphere and tactical moves. There was plenty of room to improve the efficiency in creating a more constructive team work, but the only way to achieve this in a short time was to assume directly the leadership of the ISO group "Spectacle Lenses" and so I had to explain to the team leader of the *Essilor* standard group, that I would take over the responsibility as convenor myself. I was aware of the insensitive character of this step. It was the consequence of an arbitrary organizational decision without caring about the persons concerned.

In those days I was lucky, that the different national delegations of the working group, represented by their manufacturers and their local eye care professionals, had the same feeling and ambitions and so it started a long period of fruitful work. During the years to follow the group "Spectacle Lenses" succeeded to update all fundamental standards for Single Vision, Multifocal and Progressive Lenses and established the first, still valid, standards for antireflective and scratch resistant coatings. Finally we launched the first ISO standard on mounted spectacle lenses.

The names of the people characterizing this particularly fruitful era were Michael Liese, Wolfgang Grimm and Bernd Kratzer of the German team DIN, Alick Taylor, Ronald Rabbetts and John „the kilt“ Redwood of the British Standards Institute, Dan Torgersen, Ken Wood and Michael Vitale of the US ANSI organization, Wang Liru from China, completed by the *Essilor* team Kevin O'Connor, Jean-Louis Mercier, Luc Nouvelot, Michael Vitale and Neil Roche.

In China Standards are Mandatory

The second main project was our participation in China's standardization work. In China responsibility for establishing standards was in the hands of State organizations. Market players, as manufacturers and opticians, played only an advisory role. So China's delegation was a strong representative of the consumer position. China was only starting to implicate itself into ISO work and was still very active to develop local standards. One of the reasons was the fact, that certain ISO product standards were not yet finished. For example the Chinese market of spectacle lens surface coatings was in strong development and criteria as scratch resistance of lens surfaces and durability of AR coatings were of high importance for wearer value. Coating manufacturers used for the development of these added values complex combinations of different tests, including the time consuming wearer test. Such a complicated procedure was not practicable for the Chinese Testing Institutes, which had to evaluate and assess continuously physical and chemical resistance of different lens series.

So some engineers, working for these Testing Institutes tried, for example, to determine the mechanical resistance of lens surfaces applying simplified tests, as for example steel wool scratching, and found rankings for different lens types, which did not agree with the experience of the spectacle lens wearer. This was due to the simple fact that the abrasion mechanism of a lens surface under real life conditions is more complicated than its simulation by a number of steel wool scratches. The testing and certification of the products on the market were the business of these institutes and they defended their simplified physical models with tenacity. So we had long and exhausting discussions about the right test philosophy. What made the discussion particularly delicate, was the fact, that in China compliance with standards is obligatory. So a product could be of good quality in real wearing conditions, but would not pass the standardized test and could therefore not be sold on the market. So all our test series with the Chinese experts and the following negotiations were always strongly supported by our subsidiary. In order to convince the Chinese experts that Essilor would not try to manipulate the results to its favour, we had to reveal partly our specific know-how, which we did with a certain reluctance.

The members of the Chinese standardization committee mainly came from the Testing and Inspection Centers in Shanghai (Dong Hua University) and Danyang and from the National Institute of Metrology in Beijing. They reported partly to different state ministries which did not always follow the same policy in the newly developing field of ISO Standardization. On one hand this competitive situation made cooperation with these Chinese organizations rather delicate. On the other hand in many meetings at Shanghai, Beijing and Paris with those institutes and experts, which were more internationally minded, we established first close relations and started common projects targeting practicable standards for the Chinese market. In this context we also welcomed the Chinese delegations in Paris and presented to them our R&D department and its projects.

Even though we had tough business discussions, outside the meetings the Chinese were attentive hosts, polite and a little reserved in the private talks around the meals, flexible and helpful organizing visits of historical monuments. These regular meetings in China offered a wonderful opportunity to gather some lasting impressions of this fascinating rising superpower and his people. When in the middle of the 1990's I strolled down the "Bund" in Shanghai, the historical colonial style buildings on the western bank of the Huangpu river were characteristic for the waterfront. Less than 10 years later the skyscrapers of Pudong, the new Shanghai district with more than 2 million inhabitants on the opposite eastern riverbank, dominated the scenery. Beijing is another example of the contrast between the great Chinese history, the Forbidden City, the Summer Palace, the Great Wall and the drawbacks of a too fast urbanization, the smog problems particularly in wintertime by dense motor traffic and a high amount of coal burning for private heating, power plants and industry. I remember a sunny summer day in Shanghai, where the sky was not blue anymore, but covered with a reddish haze. For somebody accustomed to strict German regulations concerning air pollution and environmental protection this was a striking experience. The people, whom I met and who were living and working in the over 20 million inhabitants metropolises Shanghai and Beijing did not complain about these nasty conditions, probably because we were foreigners.

At one of the visits of the Chinese delegation at Essilor headquarters we could discover, that Chinese taste had to become accustomed to the world famous French cuisine. It was the third day of the visit as one member of the Chinese delegation, when studying the delicacies of the starter menu card from stuffed goose liver over oysters to coquilles St. Jacques, whispered to me if it would be

possible to have a bowl of boiled vegetables. Of course this was possible. For the Chinese delegation these visits always had a certain official character which was expressed by the presentation of gifts. So as I am writing these lines a nice little court lady, made of porcelain, on my desk is smiling on me. It is part of a pair of figures from porcelain given to us by Mrs. Liru Wang, chief scientist from the Beijing Institute for Metrology, one of the persons, who dominated our first cooperation with the Chinese standards organization. The other court lady figure used to be in the office of *Essilor's* Chairman reminding him of the great importance of the international standards work for our business.

A New Global Quality Organization: Developing Customer Loyalty

In 2005/2006 I left my responsibility for the ISO standardization to my successor and longtime friend Jean-Louis Mercier. Now I could focus entirely on the Quality organization and I had a discussion with the CEO Philippe Alfroid and Henri Vidal, Vice President Human Resources, about the experience of almost 10 years with a decentralized Quality organization, its strengths and its weak points and its way to handle and solve *Essilor's* quality issues. We discussed particularly the way how major quality topics were treated on top management level. In the Executive Committee (Comex) once a month the Vicepresidents of head office resources and market zones met to exchange about the evolution of market and competition and major *Essilor* movements and projects. We agreed that for the Comex people it was absolutely necessary to have a complete insight into topics as customer satisfaction by market and distribution channel and that in this body the quality aspects of new revolutionary technologies, as for example the Free Form technology, a new manufacturing process for sophisticated progressive designs, had to be discussed. So Philippe Alfroid together with Henri Vidal decided to launch a reorganization project. We hired an external consultant, the Bernard Julhiet company, with a very experienced and dynamic project leader, Dominique Bacquet. The members of the Steering Committee were Philippe Alfroid, the Vicepresidents of Marketing, R&D and Operations divisions and myself. The project started mid 2005.

At that time the decentralized Quality organization existed for nearly 10 years. My role as Central Quality manager was to coordinate cooperation between the operational quality departments of the resources divisions and the markets on one hand and to initiate and stimulate developments of new goals and methods on the other hand. The hierarchic relationship between the central organization and the operational Qualities was by dotted lines. One of our principal fields of activity was the development of new spectacle lens products, a task performed by multidisciplinary project teams including a quality representative. Conflicts about intermediate and final product validations, not rare in new product projects were generally solved directly between operational qualities, as it was the basic idea of the decentralized organization. In Project Reporting meetings Central Quality represented Market Qualities and mediated in case of disagreements. So in the matrix structure of the decentralized organization the coordination function of a relatively weak Central Quality was superimposed on the powerful hierarchy of the operational departments. There was no real leading role of the central organization and a lack of a truly mission beyond the simple task to support and coordinate operational qualities. In order to improve our cohesion and cooperation we established the IQM (International Quality Meeting) where we met twice a year on different quality sites in Asia, Europe and USA in order to discuss the ongoing Quality projects with our colleagues from Marketing and R&D. These projects comprised new methods to improve the quality of the product development process and its results, the evolution of the methodology of customer satisfaction

surveys, the quality criteria for new technologies and the progress in testing our own and competitive products. The IQM was a very efficient meeting because all the senior quality managers were well aware that only if Quality was perceived as a compact and closed unit, we could reach acknowledgement for this not always popular activity. Nevertheless what was lacking in *Essilor's* Quality organization was the mission expressing the specific contribution to the company's profit as well as the implication and public commitment of the top management, i.e. the chairman and/or the CEO.

In the first quarter of 2006 Dominique Bacquet and the Steering Committee had finished their proposal for a new organization with a powerful mission. It was presented to Philippe Alfroid and accepted with only some minor modifications. As quantitative market surveys showed, that customer satisfaction is clearly correlated to the profit of a company, the new Quality organization should be directly responsible to develop customer loyalty to *Essilor*. So we postulated, that the mission of the new Global Quality was to make *Essilor* a reference for customer satisfaction, not only for the ophthalmic optics business, but across all industries. This was admittedly a very ambitious goal, but worthy of a market leader.

To this end a first necessary element was the implementation of an efficient measurement method of our customers' satisfaction. The second element was to initiate and support development and implementation of tools and methods in order to increase continuously the level of excellence of our products and services. And finally another decisive element of the new strategy was to include the feature "customer service" into the Quality scope. Obviously already in the past for an *Essilor* employee in contact with the client, excellent service was part of his work. But to manage service quality systematically, following a well-defined plan across all activities and regions, was a new strategic element. This new responsibility for customer satisfaction, as a result of products and services supplied by *Essilor*, gave to the Central Quality organization an independent and distinctly more influential position. One consequence of this new position was a regular meeting on General Management level, the Quality Committee, a meeting convened by Global Quality to give a status report on *Essilor's* general quality situation and particularly to inform on the progress of major quality projects. Next to General Management the other participants in this Committee were the Comex members, i.e. the Directors of the zones and the resources or upstream departments.

New Structure and Main Tasks

The new Global Quality was subdivided into 2 departments, the Direction "Customer Satisfaction and Service Quality" and the Direction "Product Quality and Market Qualities Coordination". For our customer satisfaction department we found Pierre Castera a manager, who had already gathered much experience with development and innovation of services and measurement of customer satisfaction in the European zone. In his new function he was now in charge for the whole company to initiate and support the definition of the targeted service quality per customer segment and to implement efficient and adapted methodologies for satisfaction measurements and improvement actions. The global scope of his responsibility offered him the possibility to benchmark the policies and standards between the different channels and regions. As a specific project he had to manage the optimization of the core process "creation, development and launch of *Essilor's* product and service offer".

As concerns the Direction “Product Quality and Market Qualities Coordination” our responsible manager was Daniel Steigelmann. He had a solid technical background and had been in charge for quality management of the European zone for several years. One of his major tasks in his new position was to propose and to implement a global product quality policy. Unfortunately in the spectacle lens business regional markets are different concerning their manufacturing and distribution structure and sometimes local standards complicate further definition and development of products with global performance and quality criteria. These different regional structures made it already somewhat complicated and very time consuming to establish a worldwide applicable Quality indicator system, necessary to perform benchmarking between the international prescription production entities and to propose cost saving improvements. A complete database on the technical features of the competitive products was an indispensable element to establish a sustainable product policy. Finally one of the principal activities of Daniel’s team was to define homologation criteria for new technologies as for example the Free Form surfacing and to initiate the development of corresponding tests and internal standards.

Customer Satisfaction Drives Profit

As the central goal of each company’s business is to be profitable, one of our principal projects was to determine and measure to what extent the customer satisfaction impacts on the company’s growth. To this end Pierre Castera’s team at first developed a series of tools to evaluate the link between customer satisfaction and characteristic features of the supplied products and services. Together with the subsidiaries he put in place a customer satisfaction survey named Echoes which was custom-tailored to the specificities of the ophthalmic lens market. During the first year we tested it in 12 European countries. A general remarkable result of this survey was, that the service excellence had the same impact on customer satisfaction as the actual product quality. In order to systematically improve the service quality we established so called Quality Referentials. In these referentials the different contact situations in the relation sequence customer/ *Essilor* were listed and prioritized regarding their importance for customer satisfaction. Finally for each service item we defined a targeted level of excellence. Comparing the Echoes results with these target values the subsidiaries worked out an action plan which became the basis for training courses for their working staff.

In principle this process was simple and its various steps logical and clear, its implementation however very time- and resource-consuming. So a survey, its evaluation and the implementation of the corrective actions was an important cost item in the budget of the zones and their subs. A quantitative survey covering more than 1500 customers of the most important European subsidiaries cost between 300 and 400 k€. Nevertheless in this introduction phase of the service improvement process we conducted one survey per subsidiary every year.

This included another type of survey named GPS which measured customer satisfaction with *Essilor* as well as with its competitors. One paramount element of a company’s intelligence is information about the strengths and the weaknesses of its competitors. This does not only concern the product and service offer, but also market share, organization structures and strategies. For me detailed knowledge of our competitors was crucial in all each different stage of my professional career. To know exactly the evolution of Sola’s market share was key in developing our Marketing strategy when we fought back Sola’s attack against our leadership on the progressive lens market. In the

same sense the GPS informations were an indispensable element to define and optimize our quality policy.

One major discovery was that generally the European customer was distinctly less satisfied with the service quality than with the one of the product. With our project to improve particularly the service we were on the right track. In 2008, two years after the first Echoes survey and the consecutive launch of the improvement actions we had the first success messages. In this new survey a clear majority of our clients stated that during the last 12 months they had experienced an improvement in *Essilor's* service excellence. Our plans and laborious training sessions were bearing fruit. Another essential outcome of our quantitative evaluation was a graph showing that the more the customer is satisfied with Essilor the more he is ready to increase his turnover with Essilor. Customer satisfaction drives profit. A wonderful confirmation of our new mission to develop customer loyalty.

The success in Europe created interest in the other zones particularly Asia and North America to test the Echoes/GPS process tool. As the Asian subsidiaries were particularly creative and reactive, we tested also other complementary survey types with them as the post-launch survey which allowed us to evaluate and test a launch scenario on a first market and adapt it before rolling it out on a large scale. So in the short time span of about 2 years the new Quality organization had succeeded to sensitize the company to work systematically on the improvement of its service and it had provided the necessary tools to succeed.

Process Control Saves Time and Money

While process control had already been implemented in mass and Rx production for a long time it was applied only occasionally in R&D and not at all in Marketing. In Production process control means to replace the final product inspection by a control of significative parameters of the manufacturing process, as temperature, pressure, viscosity, number of revolutions, etc.. The main benefit of such an approach is that in keeping process variables within certain tolerance limits you can avoid the situation that during the inspection at the end of the process you have to scrap faulty products and to stop the production to find the cause and to eliminate it. The condition for such a procedure is a thorough analysis of the process with special mathematical-physical tools (as the Design of Experiments and others) to identify the critical variables.

Daniel Steigelmann was a fervent advocate of the process control approach. A further advantage of this philosophy is the possibility to assess to what extent a production process is capable to respect the targeted tolerances. This sounds astonishing, but Daniel could show for example, that the traditional manufacturing process for progressive lenses was borderline with respect to the ISO tolerances. These tolerances had been fixed based on tolerances for bifocal lenses updated with the first experiences of manufacturing progressive lenses in prescription.

About the time, when Quality organization had been restructured, a new manufacturing method of spectacle lenses became commercially more and more important, digitally surfacing of complex aspherical surfaces. In the traditional production process a semifinished blank with a cast progressive front surface is completed in the Rx lab with a ground back surface according to the prescription of the spectacle lens wearer. Ideally each individual prescription needs a specific progressive front surface. For economical reasons this is not possible and therefore the same semi finished blank has to be used for a range of prescriptions, optimum correction is achieved only for the central power of the range. The digital surfacing is a manufacturing method producing individual lenses on NC

machines, enabling the production of any desired geometry of the two surfaces, so it is also called Free Form production. With its introduction it was possible to bring to an end what we had started in 1989 with our Multi Design concept, to produce the completely personalized progressive lens.

To adapt the progressive design to personal characteristics of the wearer, i.e. his specific ametropia as well as his professional and leisure activities was certainly the main advantage of the Free Form technology. But the process analysis showed also, that if the Free Form process was under control its capability was better than for the traditional production, i.e. the statistical variation of the optical parameters was tighter.

The breakthrough of the Free Form technology was a wonderful opportunity to demonstrate the benefits of the process control philosophy. Looking back, to put the Free Form process under control was a technically sophisticated problem and moreover sometimes an issue between Production/Engineering and Quality, but it was a big success.

Operations and Engineering were looking primarily for a minimum cost solution which was naturally also a goal for our quality experts, but they targeted particularly to guarantee compliance with the “new” specifications. I call them “new” specifications because for the first time we established complete tolerances for a finished progressive lens. Until now in Rx production using a semifinished blank, the optical power of the final progressive lens was measured in only two points, as the respect of the correct design on the front side had already been ensured by a tight control of the molds. In the Free Form production both the aspheric front side as well as the backside with the prescription power are manufactured at the same time in the Rx lab and so it is necessary to control all the lens points. To find a good compromise between precision and reasonable cost we chose a global physical quantity summing up optical deviations between realized design and theoretical values. The measurement device for such a global evaluation was a so called lens mapper. As it was used as an element of the process control loop of the FF production, it was sufficient to measure one reference lens per shift and not every manufactured lens.

The fact that the newly organized Global Quality was now reporting directly to General Management was certainly very helpful for the successful design of the *Essilor* FF process control. It was the basis for a fruitful and constructive discussion on equal footing between Operations and Quality resulting in an efficient process control method at moderate cost.

In an organization where Operations/ Engineering would have been responsible exclusively for the produced quality, there would have been the risk of a conflict of interests. I know that there are other philosophies as “getting quality products out to the customer is in the interest of the entire team”. This is certainly true, but sometimes the priorities of the different experts are not the same and accordingly the proposed solutions as well. To quote a rather extreme example of the recent past, one explanation for Volkswagen’s emission disaster in 2015 was a certain lack of control.

Organizing the New Products Creation Process

When consistent application of the process control philosophy even in the serial and Rx Production had not always been evident, it became a real challenge to use it for the Marketing and R&D working processes to create new products. Creative people do not like documents, which seem to dictate them how to organize their work, because they are afraid that their creativity will be restricted and consequently the number of documents describing the way how to define and develop new products are rather limited in Marketing and R&D departments.

In R&D the Director for New Product Projects together with the head of R&D Quality had already started to prepare a guide book for project managers. But this was only an internal R&D document, the product creation process however is a so called transverse process where different disciplines as Marketing, R&D, Engineering and Production share responsibility. Marketing proposes a product plan and delivers functional specifications. R&D conduct the feasibility study and develop the product. Engineering prepares the industrial production. Thus it was necessary to write a procedure document organizing these activities in its different successive stages as R&D program, Pre-Project, Active Project and defining conditions to open and to close these phases. These conditions are on one hand the decision making organizations and on the other hand the documents (functional and technical specifications, letter of intent) to start a project phase or to validate the successful end of a project phase. This procedure was edited by a multidisciplinary working group and finally approved by the Directors of Marketing, R&D and Operations. *Essilor's* project organization was extremely professional and was able to manage 20 to 30 new product development projects parallel and to deliver in time. The signed procedure document was the official commitment of the big upstream departments to respect organizations and rules fixed in these papers.

Having gathered much experience in this field, it is hard to observe and understand the mismanagement of Germany's Mega Projects as the new airport in Berlin, the underground railway station in Stuttgart, the amusement park project "Nürburgring" and others. Final costs, which are double or triple of the initial budget, permanent postponements of project completion and delays counting in years. Even taking into account, that the political context is complicated, lack of professionalism in the management of public projects, is frightening.

Living in France

The Most Beautiful City of the World

In 1986 we arrived in France and in 2009 we returned to Germany, a long time to discover a country, its people and its culture.

As concerns the country I know rather well the "Ile de France," the region surrounding Paris. Having travelled different countries of the world I think the metropole Paris is the most beautiful city of the world with its generous structure of large places and broad avenues remodeled by the Baron Haussmann in the 19.th century, its marvellous castles and monuments , from the Louvre and Versailles to the Eiffel tower, its well preserved old creamy- grey residential buildings, its numerous museums....How often have we been in Paris strolling around , dining in brasseries and bistros, visiting a museum which we had not yet seen, there was always something new to discover. My wife knew Paris as good as a city guide, so often she explored the city with her mostly German friends, who were like her lucky to live at or near Paris. Nevertheless we did not choose to live in Paris, but we bought a house about 25 km South East of Paris. As until now we had lived in small cities or in the country, a big metropolis was not the right place for us.

We traveled only some of the regions of the rest of France. What strikes, when you come from the densely populated Germany, is the large space occupied by nature in France. Even close to Paris we were able to walk in vast bright deciduous woods, different from my childhood in Bavaria where I had been picking mushrooms in dark coniferous forests.

Hierarchic Thinking and Strategic Planning

The most fascinating aspect living in France for so long was certainly the French culture and the French people. Much of my experience comes from business life. Not only business life in France, but also on foreign markets, because many of *Essilor's* managers spent a certain time abroad. It was an essential characteristic of *Essilor's* Human Resources policy to develop an understanding for foreign markets and to improve international cooperation. For the management of international subsidiaries *Essilor* usually hired local executives knowing the specific character of the country and its people. But at the top of the regional zones management there always was a French native. At the head office for a long time the managers of the big resources departments Marketing, R&D, Operations were always French with one exception, when in 1995/1996 I was the head of the International Marketing department. Only during the last years *Essilor* changed this policy at the head office as well as in the zones.

Working at the head office with French people was a fascinating and due to the cultural difference sometimes demanding experience, for both sides, I think. The following appreciation is mainly based on my experience with *Essilor* people but in my encounters at various meetings of French industrial and standards organizations I came to the same conclusions. The French executives are extremely professional in their activity. After their graduation from High School the "cadres", as they are called in French, were often educated at the Grandes Ecoles, which are specialized colleges, which have been created to educate the French elite in politics, economy, science and engineering. They pick their students after special preparation courses and are much more prestigious than the universities.

Generally the education system in France is rather competitive, students are submitted to steady gradings and tests. Their training does not only focus on a special expertise, but takes particularly into account the "Formation Générale", a broad general knowledge. A French manager should be able to solve all kind of problems. To this end he has to develop particularly systematic, well-structured and analytical thinking, following the tradition of the French philosopher Descartes, as well as good rhetorical skills and good argumentation. So the meetings were distinguished by the high level of exchanged ideas and arguments, but sometimes there was a certain passion for discussions, which made meetings last longer than needed. Many of these meetings had only preparatory character, because decisions were normally taken by the big bosses. Having gathered my first experiences in Germany, I was struck by the strictly hierarchic organization of the French companies. The decisions were very often taken only on the level of the chief executives of the big divisions, i.e. head office resources and market zones, based on the recommendations of the experts. The authority of the top executives was particularly distinct for the *Président Directeur Général*, the chairman. Generally his decisions and instructions were sacrosanct.

Though in France politics and the organization of enterprises show the same tendency to centralize authority, it is astonishing to see, that the attitude of the French is very different in these two domains. While authority in a company is normally well accepted by the employees, authority exerted by the government or politicians is observed with a high degree of distrust and in extreme situations lead to open resistance and opposition. The French society is not consensus oriented and the French are generally a people of individualists. I think this helped me a little bit, when I fought sometimes, particularly as Quality responsible, for certain orientations and convictions, which were not popular. Teamwork is also important in France, but less than in Germany, and individual fighters are tolerated .

When I left *Rodenstock* in 1984 the turnover of *Rodenstock* and *Essilor* was about the same and, as American Optical was already declining, both companies were the world market leader . But already in 1997 *Essilor's* sales were 5 times bigger than *Rodenstock's*. I have often asked myself, which were the reasons for such a development?

Innovation and Creativity

I knew the scientists, engineers and experts at *Rodenstock* , all excellent people as regards education and personal involvement. But we Germans are too concentrated on the continuous improvements of existing products to solidify the Made in Germany. When I arrived at Paris and discovered the laboratories of Research & Development activities distributed between Rue Pastourelle and Saint Maur, I realized that *Essilor* had invested much more in creation of new products and new ideas. French engineers are very open to new ideas, not only improvements of existing technical solutions but on the lookout for entirely new concepts. It is not by chance, that it was in France, that in the 1950's the first progressive lens *Varilux* and the first spectacle lens from organic *CR39* were introduced on the market.

A good example for this sense of innovation was the product *Composite*. One of my first projects in France next to the launch of *Varilux Multi Design* was to prepare the relaunch of this hybrid lens. The outstanding benefit of the plastic lens is its low weight, the annoying drawback is that without protection it scratches. The solution of this dilemma, *Composite*, was a lens with a plastic core "wrapped" by two very thin shells of mineral glass. The geometry of these shells was corresponding

to the spherical or cylindrical power of the prescription spherical or toroidal. Finally the complicated production process, the limited power range, but especially the arrival of efficient hard-coatings on the market stopped its commercialization, but it remains a good example for the ingenuity of *Essilor's* scientists.

In the following years I had the opportunity to convince myself of these remarkable characteristics of *Essilor's* R&D people, a curious mind, keen to experiment with new ideas and open to take risks. It was unforgettable to work with Jean Louis Mercier, Christian Miede, Jean-Pierre Chauveau and their teams developing *Varilux Comfort*. Their extensive and innovative research work allowed us to design a lens, taking into account new findings about head posture comfort and head and eye movements, new aspherical surfaces, smoother than all generations before and optimized according to a Design Loop based on physiological tests. *Varilux Comfort* became the most sold progressive lens brand ever.

As I explained already I regularly met French managers in our overseas subsidiaries. Even if the French sometimes have some problems in foreign countries, where people do not speak French, these executive people were enterprising, adapting easily to the culture, particularly in Asia, but also in the USA. So they helped *Essilor* to build their subsidiaries all over the globe preserving its independence and initiative. *Rodenstock* had acted differently. In many countries they were represented by distributors. As a distributor can quite easily terminate the contract with a supplier and change to a competitor, *Rodenstock's* concept was fragile. *Essilor's* business benefitted enormously from its turnover abroad, particularly USA. So still head to head at the beginning of the 1980's, with the time the gap between *Essilor* and *Rodenstock* *Essilor* grew bigger and bigger.

French Individualists

My experience with French people in my private life is more limited. Private life, that means mainly with my neighbors at Yerres in the department Essonne, where was our first home arriving in France and later at Chevry Cossigny in the department Seine et Marne, where we owned a nice little house with a big garden. Arriving at our new places of residence we were invited by our neighbors, but after that it was more our initiative to meet them. The French live very closely with their families. As in France women with children generally work and do not raise their children at home, this often is the job of grandparents and consequently this creates strong cohesion. Contacts with their neighbors are sometimes limited to a friendly "Hello," when meeting on the streets in the morning in front of their homes.

I remember the big storm in December 1999, which took off the roof of our house in Chevry Cossigny and blew off the chimney. For about one month the roofers were occupied to repair the houses in the region, while the rain was penetrating the poorly executed covers. Still the same day a neighbor passed and offered me to repair the roof, climbed on top of the house and rearranged the tiles. As in Chevry Cossigny the electric cables were in the air, the storm at about 190 km/h had torn them apart and for the first time I had to light the open fireplace in the living-room. But after a few evenings with romantic candle light, people from the village community came with long power lines, telling us that we should link the plugs of our homes across the gardens with the plugs of the houses of a recently built village quarter, where the cables were buried in the ground. We invited our neighbors to a dinner to say thank you for this spontaneous help and to know them better. We had a

wonderful evening together and afterwards it was as before: a friendly hello when we met in front of our houses or at the fence of our gardens.

France and Germany were enemies in two bloody and destructive world wars, the holocaust was a terrible burden for the German image in the world, but I never have been discriminated as a German, at least not in France. I remember however one visit in the Netherlands' subsidiary, where the General Manager interpreted the visit of the Central Marketing department as "SS control visit". But having passed some years at the Netherlands' border I knew that the Dutch people, remembering the German occupation in 1940, were rather reserved towards the Germans.

Looking Back or..... for the Moment no Intention to Move

In 2009 I took my retirement and Bärbel and I moved back to Germany. It was not easy to say good bye to France and Paris, particularly for my wife who had won many friends. Now we are living in Wittnau, near Freiburg. We discovered this region during a professional trip to the German subsidiary. Now we have time to rest and look back on eventful times. At first glance we had a rather independent life changing places and looking for new challenges . We moved a lot and met many people. Our long stay at Paris and many professional and private trips to the States, Australia and Asia, particularly China, broadened our horizon. We learned about foreign cultures, their way to think about their nations and the world. In a period where Germany is losing more and more its national identity we learned that global thinking and national pride go together very well. So if we had to decide once more we would do the same. To stay on one place and work for thirty or forty years for the same company or organization has the advantage to stay close to the relatives and childhood friends and to build a steady professional career. But to work for different companies from diverse economic sectors obliged me to start always anew and I acquired new competences entirely different from my initial education in a continuous learning process. We, particularly my wife, were making international friends with whom we are still in contact today.

Sometimes the decisions to take were not easy and we had to leave places and persons who were dear to our heart. Now we are living near Freiburg not very far from our relatives. Freiburg, situated in the sunniest region of Germany has partly preserved its medieval character with its narrow winding streets and its beautiful Münster, built from red sandstone starting around 1200. A big part of Freiburg had been destroyed by heavy bombing of the British Air Force end of 1944. The Black Forest close to the French border is a wonderful region to live and to spend holidays. In Wittnau we built a new modern house and we enjoy the numerous sightseeings and nice restaurants in the area. We feel very well in this beautiful region with our nice neighbors and right now have no intention to move again.

List of References

[1]: Analysis of the $K\alpha$ -and $K\beta$ -X- Ray Emission Spectra of Sulphur and some Sulphur Compounds

[2]: Theoretical and Experimental Studies of Annular Nutation Dampers, ESRO TT-152:

[3]: Thilo Sarrazin: Thilo Sarrazin: The thirteen points of political correctness, EuropeNews April 9, 2013

[4]: Allensbach-Umfrage: Deutsche haben Angst, die Wahrheit zur Migrantenkrise zu sagen, Epoch Times, November 2015

[5]: Bilaterally aspherical progressive spectacle lens. Patent DE 3331763