



**“You don’t normally find our level of automation in a company of our size.”**

*Schaeffer AG is celebrating its 20th anniversary. We took this opportunity to sit down and chat with the two founders and owners of the front panel-producing company about past developments and future goals.*

**You’ve been a success in the front panel business for 20 years now. What made you want to become a front panel manufacturer?**

**Kai Schaeffer:** I dreamt of manufacturing front panels ever since I was a baby... *(general amusement)*.

**Of course, who doesn’t. But given you’re a physicist, Mr Kai Schaeffer, and you’re an engineer, Mr Jörg Schaeffer, surely a lot of doors were open to you. Where did the motivation to found your own company come from?**

**Kai Schaeffer:** During this new economic boom period, people with our skill set were actually heavily sought after and lured in with fantastic salaries – unsuccessfully in our case. Our parents already had their own company. The idea of being self-employed had been instilled in us as a model for life and work since we were very young, so it was always the option we were most likely to consider. The result was us really wanting to stand on our own two feet and create our own company.

**Jörg Schaeffer:** That’s right. It was a somewhat unusual path. I remember being asked to take part in a study after handing in my dissertation that focussed on the career plans of graduates. This form provided a lot of options from the public sector, among others, but there were absolutely none relating to becoming self-employed. Apparently, the person who created the form didn’t think being self-employed was a realistic choice. For me, it was still the right path.

**What type of company did your parents have?**

**Kai Schaeffer:** In the 1970s, our family supported itself mainly by building amusement machines. The biggest hit was a dynamometer. You pushed two levers together and a hand showed you how strong you are on a scale. One of the last of its kind is now in our company break room.

**Jörg Schaeffer:** Our father then pushed the company’s focus more towards thermodynamic measuring devices and also carried out his own research in this area. We gradually grew into it and eventually

introduced our own areas of expertise into the company, namely computers and electronics.

### **Once you decided to be self-employed, how did the front panel come about?**

**Kai Schaeffer:** Jörg has always been interested in electronics. Back then there were no systems as great as Arduino, which is why my brother developed the boards for microcontrollers himself. This was the first time that we discovered the problems with producing small quantities of front panels. Our double act, which is still successful today, saw Jörg take care of the electronics while I delivered the software.

**Jörg Schaeffer:** We then acquired the first milling machine to help out our father with a large order of machine parts. At this point, I had already graduated and my brother was about to. There were others who already had a milling machine and manufactured front panels. At the time, we thought to ourselves that we could do that as well.

**Kai Schaeffer:** We initially tried to go down the conventional sales route and failed miserably. Nobody responded to our adverts. Not one person got in touch. So we said to ourselves...

**Jörg Schaeffer:** ...this is too much of a hassle. *(laughs)*

**Kai Schaeffer:** Exactly. Conventional sales and going from door to door wasn't for us. We therefore needed a different approach. We had to come up with something new and ultimately better. This resulted in the idea of developing a piece of software that designed front panels and automatically converted them into a milling program. Once I had handed in my dissertation, I immediately started to write version 1.0.

**Jörg Schaeffer:** And I set up the milling machine. I was responsible for purchasing the materials and establishing the operational and technical processes.

**Kai Schaeffer:** Nine months later, we were online with Front Panel Designer and placed our first ad in 'Elektor' and another one in 'Elrad' shortly thereafter.

### **Does online mean that the software was available to the customer and they were able to use it to design their own front panel, which was then immediately produced on the milling machine?**

**Kai Schaeffer:** Exactly, that was our idea. Then, everything happened very quickly: Two days later, our first order came in – from a student, who naturally asked for a student discount.

### **Did he get it?**

**Jörg Schaeffer:** Of course. We had only just stopped being poor students ourselves. The second order came from Nokia. And then there was nothing for the next two weeks.

### **A first, very quick order and then one from Nokia – that must've been exciting?**

**Kai Schaeffer:** To be honest, those first two orders were absolutely amazing because they showed us that the principle works.

**Jörg Schaeffer:** Yes, absolutely. Of course, we had asked people in the industry what they thought of our idea beforehand. But nobody was interested. They had their business and their way of doing it. We were laughed at, if anything. Even our friends were sceptical. It was just another typical 'Schaeffer idea' to them.

**Kai Schaeffer:** Yep. But it worked. Initially, I was still printing out the technical drawings of the front panels and superimposing them onto the milled panels. I wanted to check whether the printout and the panels were really identical. That gave us the necessary confidence in our own system.

### **What happened after two weeks without an order?**

**Kai Schaeffer:** After that, the orders came in regularly and in increasing volume. We were aiming for short delivery times from the very start – five to eight working days if possible. This, of course, means that every order that came in had to be processed rather quickly. In those days, we often had the feeling that we wouldn't be able to live up to our own expectations if even more orders were to arrive. We called these phases 'order maximum credible accidents'. There were just two of us, but we did everything ourselves without any extra help. Our days were packed. We milled and knocked out front panels, designed, packed and sent engravings, answered e-mails from customers and wrote invoices. Once all that was done, we continued to develop the software and processes.

**Jörg Schaeffer:** We then employed staff pretty quickly. We were able to cover our costs as well as continue to invest in the company and equipment. Much to the delight of our neighbours, we put an additional office container in the garden. Mind you, we did live in a residential area in Berlin Zehlendorf. By that point, we were running four milling machines there that were not exactly quiet. So, it's no surprise the next Schaeffer idea caught on and was met with approval straightaway was to move out in 2001.

### **Why aren't there any photos from this period?**

**Kai Schaeffer:** We were simply too busy at the time. Back then, we also did not think that our idea of the Front Panel Designer would carry the company as far as it has.

### **But there was obviously a positive response?**

**Kai Schaeffer:** Yes, it was great. Customers were ringing us and thanking us for being there. Up until then, producing a custom front panel had been a highly tedious task. Someone had to go down to the basement and use a drill press to somehow manually drill holes into aluminium panels as precisely as possible.

**Jörg Schaeffer:** Don't forget the lettering transfers. Nobody wanted to do that either. Customers were now able to input everything into our program, place an order and receive their high-quality panel shortly thereafter.

**Kai Schaeffer:** Traditional manufacturers required you to submit a technical drawing, and the machines were then programmed accordingly. This resulted in a relatively large overhead, meaning custom panels weren't really worth the effort. Nobody wanted to produce such small quantities. We sidestepped these difficulties with our processes.

### **Customised, automated production – in principle you had already begun to pursue Industry 4.0?**

**Jörg Schaeffer:** The term Industry 4.0 was first publicly used at the Hanover Fair in 2011. It didn't exist before, so when it came about we recognised it and thought to ourselves: Well, we've already been doing that for more than a decade.

**Kai Schaeffer:** The crucial thing for us in terms of Industry 4.0 is that the customer configures the front panel on their own computer using our software, and this information reaches the production machines without human interference and is executed accordingly. The goal was always to have this process be fully automated.

### **You expanded the company just four years after founding it by opening a subsidiary in the USA, Front Panel Express LCC. What made such a young company decide to take such an unusual step?**

**Kai Schaeffer:** We already had several customers in the USA even before there was an English language version of the software. Front panel manufacturers who would do small quantities were also a rarity there. The introduction of the English version of our software increased demand in the USA considerably. However, in many shipments the delivery costs exceeded the value of the goods. That was far from ideal.

**Jörg Schaeffer:** These realisations made it clear to us that although there was obviously a market in the USA, we had to handle it differently if we wanted to survive there in the long term. In other words, a location in the USA was critical. That's why we took this step.

**Kai Schaeffer:** Isn't it crazy? Some things you do because you don't know what's coming and you simply underestimate them.

### **Back then your business idea of front panel software didn't have any competition, but now there are a few competitors. What do you think continues to make Schaeffer AG successful?**

**Kai Schaeffer:** Our customers come to us because we reliably deliver very high quality in a short period of time. We offer user-friendly software that's designed in a way that also makes it is easy for occasional users to get to grips with.

**Jörg Schaeffer:** We can only provide all this because we pay so much attention to the processes within

the company. We know that it's beneficial to the customers, and that's why we'll continue to place great emphasis on this specific factor.

**Kai Schaeffer:** Providing our customers with a software program is just one part of our job. We also provide our employees with software that allows them to process and manage customer orders and all other processes effectively, as well as sustainably manage planning and controlling. And at this point I want to say that I'm proud of our great team. I still like coming to work each day.

**Jörg Schaeffer:** (*grinning*) Now that's a bit of a platitude, isn't it?

**Kai Schaeffer:** Maybe so. It's still true though.

### **What strategies do you use to lead your company?**

**Kai Schaeffer:** We're always trying to introduce IT throughout the company. For the most part, we develop this in-house to remain as independent and flexible as possible. We always try to implement the best technical solutions we can given our capabilities. Of course, we also purchase something every now and then if there's an optimal solution on the market. But we don't allow ourselves to take any backward steps. For example, we will never allow ourselves to start making any payments manually again. That is an essential fundamental principle and brought us closer to becoming an Industry 4.0 company from the beginning. You don't normally find our level of automation in a company of our size.

### **How important is customer communication to you?**

**Jörg Schaeffer:** Although our business model works without any direct customer contact, there are always opportunities for us to talk to our customers. For example, we have a customer service hotline and can be found at trade fairs. This allows us to find out what customers feel is missing from our software or what they'd like to see in it through different channels. This valuable feedback enables us to better understand the requirements of our customers. For example, these sorts of suggestions led to us implementing a 3D view function and expanding our product range, such as developing our own systems for fastening bolts or printing on the front panels. It's important to us that our customers can count on us being available for immediate and expert assistance via the hotline.

### **What goals is the company pursuing for the future?**

**Kai Schaeffer:** This year we integrated STEP export into Front Plate Designer as a first step. Front panels can be saved as a 3D model in a STEP file via this export function so that the customer can, for example, print out the milling parts using a 3D printer before ordering. We think the next logical step is to now offer STEP import. In the long term, we'd like to increase our presence in the enclosure market. We'll start developing the Enclosure Designer next year. We're also considering expanding into Asia.

**Jörg Schaeffer:** A major concern for us is giving our business customers a greater understanding of our Web services. We want to give them the opportunity to connect their processes with ours and in doing so to reap the benefits of automation.

### **Looking back on 20 years of front plate manufacturing, if you had the chance to start your company again, what would you do differently?**

**Kai Schaeffer:** Definitely a lot of details, and there was certainly a lot we had to optimise over time.

**Jörg Schaeffer:** But it actually went really well. We can't complain.

Interview: tat

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