



Thomas Michels on the Importance of Investment and Cooperation

Feature Interview by Pete Starkey I-CONNECT007

Pete Starkey discusses industry drivers and challenges and the importance of investment and cooperation with Thomas Michels, CEO and managing partner of ILFA, a high-tech German PCB fabricator.

Pete Starkey: Thomas, can you describe your current position and the main characteristics of your company?

Thomas Michels: I run ILFA together with Christian Behrendt. ILFA is based in Northern Germany, and we have 180 employees. We concentrate on the aerospace and defense sectors as well as medical and sensors, and our products are mainly high-reliability rigid-flex and hybrid boards.

Starkey: Looking at the European PCB industry from your perspective, what's the most significant change you've seen in the past few years?

Michels: 2017 and 2018 were good years for the PCB industry and the electronics industry as a whole; in the last quarter of 2018, it started

to weaken, and this has continued until today. The main drivers for this weak business are the automotive industry, and as a logical result, the industrial sector is also weaker due to the low business level. And people do not invest anymore. These are the two key areas that drive business in the wrong direction.

On the other hand, for prototypes and small series, business is not too bad if you are in a complex area. For example, autonomous driving, Industry 4.0, and 5G are part of our business in Europe. If you are running a factory in 4.0, you have a huge data transfer, and with the existing 4G systems, this is just not possible. This drives us, so we have a lot of projects with different complexities.

For ILFA, the average number of press cycles is 2.5, although we do up to 7. This is something that is challenging the PCB manufacturers because you have to invest significantly to fulfill this expectation. ILFA and other key companies in Europe have been fully digital for many years; nobody's working from artworks anymore because it would be impossible with the sort of boards we produce.

Starkey: You've already touched on it, but what sort of challenges are your customers currently facing?

Michels: As I just mentioned, the automotive and industrial fabrication industries are suffering from a lack of business. Nobody knows whether it is riding toward one direction or another. The other challenge is that there are a lot of projects for autonomous driving and 5G that OEMs have some ideas about, but they don't know all of the answers, so PCB manufacturers have to work much more closely than they used to work with the OEM. We are already in the design stage and a part of the project.

Starkey: Looking to the future, how do you think the European PCB industry is going to change in the next two to three years?

Michels: Let me first make one point clear: I hope nobody will disappear because we are such a small industry now that if we get any smaller, it could be dangerous. Meanwhile, OEMs understand that they need to have local support for the industry, and they honor this more and more. Besides this, the industry has to work together to avoid risk. I'm not scared at all if we do our homework. We must invest a lot. The companies who are not willing to invest 8–10% of their annual turnover, for example, will disappear over the next 5–7 years; they will die slowly.

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At ILFA, we started cooperating very closely on technology with a company called MOS Electronic—a German company that is also privately held where the shareholders are active in the management like ours are. This is a concept

that others have to think about if they are not big manufacturers. We are complementary; they do certain things where we are not as strong, like heavy copper, and we do other things like rigid-flex where we are very strong. By working together, we give our existing customer base a better offering. From my point of view, we have to cooperate better in this small industry.

Starkey: I know exactly what you mean. In the present environment, it's very wise to adopt that strategy. What is your area of greatest concern right now?

Michels: My biggest concern is if we can find the right people with the right skills. The unemployment rate is very low in German-speaking countries, and we have a lot of big companies that offer very good salaries. This makes it very difficult for companies like ILFA and 100–180–250 people. We can't just offer the kind of packages that big companies do, which is a huge challenge for us. The second one is if we get all of the necessary investment finances. Because even though interest rates are close to zero, the banks have “short arms and deep pockets,” and PCBs are not “sexy.” The banks can be hesitant, which is another concern. But if we do our homework and work on cooperating with other companies to optimize our offering, if we invest sufficiently, the business is there.

Starkey: That's encouraging. You need to work hard on the relationships and make the right investments to secure that business.

Michels: Correct. For example, if we look at our own company, we have increased our business in 2019 by almost 10%, but we have lifted our technology level not one step but by at least two steps. Yes, we can do 4-layer and 6-layer boards, but that's not what we want to do; we have 40% rigid-flex and 40% hybrid containing ceramic, PTFE, and other materials with three, four, and five lamination cycles, copper filling, via plugging, etc., all in-house. This is the kind of business you have to do—either very fast or very complex—if you would like to survive in Europe.

Starkey: You have to become a specialist in a given technology, and then you have proportionately less competition. You're close to your customers, both geographically and in terms of working together. Customers know that they can rely on your support and that you will rise to their technology challenges to provide them with the best service.

Michels: That's exactly right. We have more than 10 people in our engineering department, so we work directly with the customer's design people to jointly develop the design. Most times, it's developing and optimizing the board with them and then building it. If you are reasonable with the price, then it's not the subject of a lengthy negotiation.

Starkey: I agree entirely. And reflecting on my own career in PCB fabrication, that's the sort

of company I used to run; we weren't a manufacturer so much as a provider of a technical and engineering service to our customers.

Michels: And that's the importance of having the right people. Our company is already 40 years old, and we are able to offer this service, but we also have to find and invest in the right people and develop and keep the people. From my point of view, the PCB market worldwide is increasing at a minimum of 5% YoY with drivers like 5G, IoT, and autonomous driving, and it needs excellent, flexible European PCB specialists to help develop prototyping and medium volumes.

Starkey: Thank you for sharing your perspective with us, Thomas.

Michels: Thank you, Pete. PCB007

Würth Elektronik CBT, Taiyo America, Inc. Announce Successful Production of Inkjet Solder Mask

Würth Elektronik CBT, a leading European PCB manufacturer, and Taiyo America have announced that inkjet solder mask is in production.

IJSR-4000 JMO3G is an inkjet solder mask product developed by the chemists and engineers of Taiyo Ink in Japan. The product is designed to meet all industry standards for high performance solder mask in the automotive, aerospace, defense, communications, medical and industrial market segments.

"We have been cooperating for over four years in the development of an inkjet process solution and the time and effort spent by both companies has finally paid off. We are pleased to have Würth Elektronik CBT as our first worldwide production customer for the IJSR-4000 JMO3G," stated Zach Maekawa, president of Taiyo America.

Dirk Grether, a project manager at Würth Elektronik CBT, adds: "Together with Taiyo America, we pioneered a successful inkjet process. As one

of the first producers, we were able to apply a functional 3D-surface designed PCB according to the customer's requirements. Also, beyond precision and functionality advantages, we offer our customers improvements in PCB protection—achieved by the gentle application of the functional surface, as well as by a reduction in the amount and type of chemicals used."

(Source: Würth Elektronik)

