Koh Young was the first player in the SPI market, and now has 53 per cent market share

Constant miniaturisation in electronics manufacturing has led to ever-increasing PCB density and complexity. As the manufacturing process becomes progressively more complicated, the probability of defects in finished PCB assemblies gets higher. Peter Shin, managing director of Koh Young SE Asia Pte Ltd, in an interaction with Baishakhi Dutta of the *EFY Group* shares how his organisation is making 3D inspection systems a viable option for electronics manufacturing.

PETER SHIN, managing director, Koh Young SE Asia Pte Ltd

EB: Why choose NMTronics as your Indian partner?
We aim to tie up with companies that have a similar interest in technology, like us. When I first met Soni Saran Singh from NMTronics, I realised he is a technology enthusiast who is very curious regarding every possible aspect of electronics. His love, passion and curiosity for electronics caught my attention and that is when we decided to get into business with NMTronics.

EB: Tell us about Koh Young and the product line that you are offering.
Koh Young was started in 2002 with only 12 people. We were making only SPI (solder paste inspection) machines at that time. We later expanded our offering to cover another market, i.e., for solder paste and component inspection. Now, we are dealing with semiconductor inspection machines, machining inspection machines, pin inspection and other backend inspection systems. Currently, we have expanded to the medical segment too, and are making robots for brain surgery as well as electronic machines for conducting biopsies. These are still works in progress.

EB: What per cent of your global revenue does the Indian market contribute?
In our revenue profile, India accounts for up to 10 per cent of our revenue.

EB: How are you experiencing the transition from 2D to 3D inspection technology?
2D technology is based on grayscale value comparison technology. But the 3D technology is completely different. In 2009, we invented the 3D SPI. When we were asked to enter the AOI (automated optical inspection) market, we rejected the idea because there already were around 20 companies in the field.

But in the SPI market, Koh Young was the first player. Now our SPI market share is 53 per cent, worldwide. One of our big EMS customers did suggest that we should jump into the AOI field, since he considered us to be the best in 3D SPI. But we declined because we believed this market was saturated.

EB: What is the greatest challenge that you face in the SMT equipment ecosystem?
The SMT market is booming but today's operators don't have enough knowledge about inspection machines. They cannot differentiate between the good and the bad. The machine needs to play a very clear role in the manufacturing process, and only then can the need for decision making at the user's end be minimised. That is when the customer will get better quality.

EB: What is the USP of your product lines?
We try to deliver the real measurement values. That is our approach. 3D means not only the X and Y axes but also the Z dimension. Good machining can be performed in any circumstance and place. Some machines perform well in the US because the operator has a sense of ownership over the machinery and the quality delivered, while Europeans study their processes in great depth. But in China and South East Asia, the operators do not have any pride in their work. They tend not to learn more about their jobs or tools. Thus, globally, only customers

in India and China complain about the machine not working.

EB: How are you upgrading the technology of your products to fit the latest industry needs?
3D measurement requires sensor technology. At Koh Young, we have very fine measurement technology, apart from having a tracking and semiconductor system. But you need to see the market trends. Industry 4.0, or the automation of factory production lines, is all about the need of the factory to monitor incoming data, the product schedule, imbalances between the incoming material and the output, and so on. Everything needs to be synchronised so that the customer can quantify all aspects of the process.

EB: How much importance are you giving to R&D?
Koh Young spends over 36 per cent of its revenue on R&D. We already have made plans for another ten years. We have set up one artificial intelligence centre in San Diego, California and another at Hampton in New York state. We are going to set up another AI centre in Canada. There is another software centre in Vienna, where we only do the coding, while software architecture is done at the Koh Young headquarters in Seoul, South Korea, and at other locations in the US.

EB: Any plans to come up with an AI centre in India?
Unfortunately, there is no such plan in the pipeline.

EB: Do you have any support tools or platforms to help your customers use your products easily?
Koh Young has a solution called KSmart. Currently, we are preparing the second version of this solution. In the first version, we aimed at collecting all the data and then displaying it on the inspection system. In the second version, not only is the data on display, but we are also trying to guide that process. As an example, when users see the defect or the result, they can click and read the root codes. After they have checked the overall status, KSmart will specify what they need to look at. So this is the first level. In the second level, we plan to deliver some more solutions and will try to control the other production machines with our data.

We also have the KPOL (Koh Young Process Optimisation Tool) which communicates with the printer. This is also based on AI software and may be better than a human being because we program it with over 20 years of experience. If human beings do not have the mindset to learn more, it is difficult to train them.

EB: Are you collaborating with academia in order to hire fresh graduates and skill them?
We don't select directly from academia, but we do a customer service campaign. This means that we visit the Koh Young users and then work together, as they might have some doubts after using the Koh Young machine. After reviewing their usage, we may make recommendations on how to change the process. We don't provide academic training, but we train the Koh Young users.

EB: Do you think the policy of the Indian government to import second hand SMT equipment is somehow affecting your business?
Koh Young does not have any second hand machines. The market price of SMT equipment is now going down and the customer doesn't bother about whether it is first hand or second hand. We, as manufacturers, can only drop our selling price.

The second hand machines available are mostly 2D and not 3D. I cannot say much about the 3D machines, but the Chinese do try to sell them at a lower price. So now we are fighting on the pricing front. In India, the volumes are not as high as in China, but the price is almost the same.

I would say that such a policy is not affecting our business directly.

EB: How do you see the overall SMT market developing in India? Do you expect demand for your product to increase in the coming days?
For local Indian manufacturers, spending money on OEM machines and using them is not easy. But we do see immense potential. So that's why we try to deliver our best solutions to the Indian market. We try to help in case there is any lack of training and to deliver a better software solution. We can never ignore the fact that the Indian SMT market is booming. In fact, last year, we have supplied more than 200 machines to the Indian market.

EB: Do you have any plans to promote your latest 3D surgical robots in India?
Yes, of course. We do have plans to promote our latest launch in the Indian market as the healthcare sector is developing tremendously here. Currently, we don't have any partners in India to promote our surgical robots, but we are looking for them. We aim to bring on board partners we can trust, open up the project to, and together derive more profits in the growing Indian market.

EB: How do you provide services and support to your customers across geographies?
Koh Young is the only company that sets up offices overseas, because we believe that supporting the inspection or production machines is not easy. We strongly believe that the inspection machine needs more service. Our policy is that if it's not a direct sale, then there is no direct support. We do have a service partner in India, but he is providing training to our other partners who cannot handle key support.

EB: What is your road map for the coming few years?
That is a pretty difficult question. As I have already mentioned, on the hardware side, we are very stable. So now we are trying to focus on the AI such as auto-programming and auto-fine tuning, and on further enhancing our KSmart solution. Apart from this, in the coming two to three years, one of our major focus areas is going to be M2M development—as part of the smart factory solution.