A New Breed of Robotics

October 31, 2014
by Kenichi Amaki
of Matthews Asia

Earlier this fall, I attended the International Manufacturing Technology Show in Chicago, where companies from around the world came to showcase new products that utilize the latest in cutting edge manufacturing technologies, such as machine tools, robotics and various automation components. The biannual tradeshow is the largest of its kind in the world, a virtual theme park for manufacturing geeks. Despite the oft-mentioned talk of offshoring, manufacturing in America continues to grow at a healthy pace, driven by autos, aerospace and energy-related fields. Thanks to the expansion of these relatively higher value-added industries, productivity of manufacturing in the U.S. has seen impressive improvement in recent years. Capital spending has also been robust as companies seek to capitalize on business opportunities. However, such manufacturers are also keen to adopt more automation and robotics to help keep fixed costs in check.

“Collaborative robots” were among the new products I saw at this September’s show. The majority of today’s industrial robots are not made to work alongside humans as they are simply too powerful and not equipped with safety systems. On a production line, robots are typically housed inside metal cages to keep their human operators safe. This isn’t much of an issue if you have a large enough factory but as manufacturers seek to replace human processes with robots, they often find that the existing factory floor space is insufficient to make these metal cages. That’s where these collaborative robots come into play. These robots are equipped with sensors and other safety systems allowing them to operate in tight spaces alongside employees. They are also covered in a soft foam material and color coded to differentiate them from other non-collaborative robots. It will be interesting to see how this new type of robot is accepted in the market over the next few years.

Something else that caught my eye during the show was a project to build a car with a 3D printer. These 3D printing products, also known as additive manufacturing, had me feeling quite skeptical. Individual components were showcased as they were completed but ultimately, I wasn’t impressed. The parts looked like a lump of unfinished rubbery string, not aesthetically pleasing. I had been envisioning a ready-to-go product coming off the printer but the technology does not seem to be there yet. Don’t get me wrong. I think 3D printing is an exciting technology, but there are clearly areas where 3D printing will make sense and others where it won’t at all. Products like medical implants seem to be a good application, given the ability to customize the dimensions easily. However, slow production cycles and stringent quality requirements may limit adoption of 3D printing in areas like autos and aerospace. We will keep our eyes open for any technology breakthroughs that can speed up the adoption of such printing for manufacturing purposes.

Attending these tradeshows rarely leads to immediate investment decisions. However, they do help us better understand the industry and factors that may affect a sector’s future growth. And hey, where else can I play blackjack with a two-armed robot dealer.

Kenichi Amaki
Portfolio Manager
Matthews Asia