Vision for the future

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Q: ***In 10 years, do you think that the IoT/Industry 4.0 trend will have faded or will connected machinery have become a way of life for diagnostics, maintenance and overall machine health?***

A: We believe that the IoT/Industry 4.0 trend, far from fading, will become a dominant model for sophisticated manufacturing systems over the next decade. Universal connectivity will certainly help manufacturing systems to become more efficient by enabling continuous real-time monitoring of the many components that make up the system. However, we see the most revolutionary impact of IoT/Industry 4.0 as the ability to embed the manufacturing system into the overall supply chain. By taking advantage of universal connectivity and advanced data management, we have already implemented a production system that can produce a wide range of product variants on a just-in-time, as-ordered basis. The fully-connected machinery of the future will be capable of being quickly and automatically re-configured for product variants or even new products with minimal manual intervention. The result will be what we call "mass customization" – the ability to manufacture products that meet each customer's specific needs, without losing the cost efficiency of traditional mass production.

Q: ***Do you foresee your product (or certain components of it) being manufactured via 3D printing in the future... ?***

A: Our business model is based on the idea of providing each customer with a sensor product that comes as close as possible to meeting their exact requirements. We have achieved this by developing devices that are highly modular in design, made up of largely interchangeable components and sub-assemblies. This means that we can usually build what a customer needs by putting together components with the appropriate performance/environmental/mechanical characteristics. Meeting customers' more exotic requirements can require specialized, low-volume components. We are very interested in the potential for 3D printing technologies to produce these special components quickly and efficiently. However, before we can fully embrace this approach, we will have to see improvements in single-part economics, tolerances and the availability of 'industrial grade' materials.

Q: ***What kind of work will people be doing after all the automation sets in? What jobs will be available in the future?***

A: It's perhaps helpful here to look at advanced manufacturing economies like Germany. There is still a great demand for skilled workers, but the required skill set has changed dramatically. Instead of the traditional 'master machinist' who could build virtually any part out of a piece of steel, we are now looking for specialists who can program robots, set up and trouble-shoot complex control networks and operate automated machine cells. While there is still a need for some semi-skilled workers on the factory floor, it's inevitable that labor-intensive manufacturing will be moved to low-cost countries. We believe that the education system – especially in the U.S. – needs to emphasize vocational training in order to prepare a new generation of technicians with broad skills in areas such as robotics, networks, data management, quality assurance etc.

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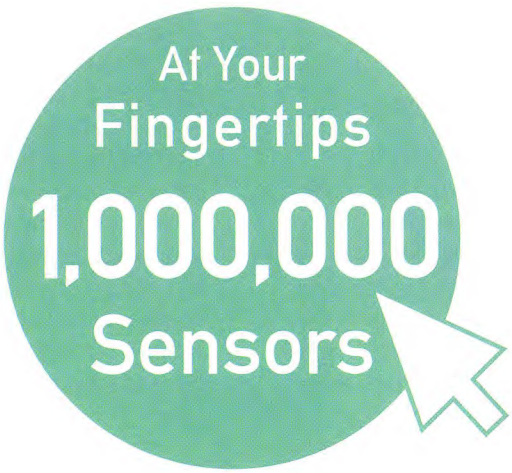

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