Future of Machine Tools

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ABSTRACT

In the manufacturing field where machine tools are used, electrical vehicles, aging, and IoT have been important keywords. Although an automobile has been a byword for a product for mass production, the number of mass production processes to manufacture the same parts will be reduced because the number of components in the powertrain will be significantly reduced due to the transition to electrical vehicles. More and more new materials will be used to reduce the weight of automobiles, which means die and mold production will be demanded instead. In the aging society, the demand for implants and medical equipment will be significantly increased. Furthermore, growing demands from the semiconductor industry in the IoT boom bring momentum to the machine tool industry. The manufacturing style is rapidly changing from mass production of the same parts to high-mix low-volume or custom-design production. On the other hand, lack of experienced engineers has been a serious problem in both developed countries and developing countries. For machine tool manufacturers, providing not only machine tools but also engineering is an important task. Furthermore, promoting automation in high-mix low-volume production is even more important.

To tackle those tasks, machine tool manufacturers must work on development of automation technologies for long-time automatic machine operation, improvement of machining accuracy, effective chip disposal and production of machines that never stop. This keynote speech is about effort to achieve these goals by using IoT and sensing technologies and what the machine tool should be in the future.

BIOGRAPHY

Dr. Masahiko Mori was born in Nara, Japan in 1961. After studying mechanical engineering at Kyoto University, Japan, he worked at ITOCHU Corporation as a salesperson of textile machineries and advanced composite materials for 8 years. Since 1999 when 38 years old, he has been president of Mori Seiki Co. Ltd. He got Dr. Eng degree from the University of Tokyo in 2003. Since 2009 collaboration began with Gildemeister in Germany and in October, 2013, both companies integrated their names to further strengthen the “DMG MORI” brand name. Dr. Mori serves as President / CEO of DMG MORI Group. He also serves as the Vice-President of the Japan Machine Tool Builders Association (JMTBA), fellow of International Academy for Production Engineering (CIRP), Board member of Kyoto University Innovation Capital, specially appointed Professor of the Graduate School of Advanced Leadership Studies, Kyoto University, and council of Japanese-Germany-Centre Berlin.