

September 22, 2017

President's Address for
September Graduation Ceremony of Academic Year 2017

Yuji Oie, President of Kyushu Institute of Technology

On the occasion of today's graduation ceremony for master's and doctoral degree students, I wish you all my heartfelt congratulations on this most joyous and auspicious day. I also have no doubt that there is even greater joy among family members and others in attendance whose generous care and support has helped each of you to reach this day.

Today I would like to talk with you about the social changes that lie ahead of you, especially the changes currently taking place as a result of technological innovations. As telecommunications, bioengineering, and other technologies, especially AI, big data, IoT, robotics, blockchains, and genetic engineering, have become more advanced and widespread, they have exerted a strong influence on a broad range of issues in society and it seems likely they will exert an even greater influence in the future. As the founder of the World Economic Forum, Klaus Schwab, has written that a revolution worthy of being called the Fourth Industrial Revolution is currently under way (Klaus Schwab, *The Fourth Industrial Revolution*, Nikkei Publishing Inc.).

There have been three industrial revolutions to date. Beginning in the late 18th century, the First Industrial Revolution was spurred by the invention of steam engines and the spread of mechanization as a result. From the late 19th century, the Second Industrial Revolution witnessed the spread of electrical machinery and factory-line mass production. Lastly, since the 1960s, the Third Industrial Revolution has been driven by the development and spread of semiconductors, computers and the Internet, making it a digital revolution.

Whether we truly stand at the start of a Fourth Industrial Revolution or not is debatable. Regardless, I believe it is vitally important for us today to understand that engineering and the various technologies created by it, hold the clear potential to transform society in unprecedented ways. The report titled "Deep Shift: Technology Tipping Points and Societal Impact," published in September 2015 by the World Economic Forum, describes 21 tipping points ("deep shifts") expected to occur between 2018 and 2027. They represent technologies and applications of great current interest, such as "implantable technologies," "smart cities," "driverless cars," "3D printing and manufacturing," and more, whose influence extends to daily life in society,

economic systems, political systems and even human dignity. While much of their influence will be positive, attention is also called to ways in which they will be negative. I hope each of you will approach these issues not just from the perspective of an engineer but also from that of a citizen living in society.

Given such conditions, the publication I mentioned a moment ago points to the even greater importance in the future of “continual adaptation and the acquisition of new skills and approaches under various conditions.” Likewise, the World Economic Forum’s January 2016 report titled “The Future of Jobs: Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution,” describes the additional skills necessary for the future, including cognitive abilities, systems skills, and complex problem-solving skills. Cognitive skills, which refer to the combined process of recognizing, understanding and studying a given issue, requires flexibility in ways of perceiving and logical thinking skills and creativity needed to make judgments. Systems skills require not only system analysis but also the ability to make judgments and decisions based upon the analysis. These are all important skills.

That said, when conditions are changing so rapidly, it is not always easy to adapt to them and acquire new skills and approaches. That is why it will become all the more important in the future to amass and utilize an extensive and diverse body of learning. Not only do individuals possess different knowledge; they also possess different experiences. Additionally, it will be important to understand individuals’ feelings. With these, a rich and varied value system and thought process will take shape. Prof. Michio Kaku at the City College of New York writes, “One of the main purposes of feelings is to give us a value system and enable us to decide what is important, what has high value, what is adorable, what is precious. Without feelings, all values are the same and we become paralyzed in the face of countless decisions that all carry the same weight” (Michio Kaku, *Physics of the Future: How Science Will Shape Human Destiny and Our Daily Lives by the Year 2100*, Anchor). To make better judgments and decisions, it becomes important to make an effort to understand different ideas and perspectives and empathize with them.

If you are able to mutually understand, which is to say empathize with, diverse thought processes and sensibilities, your own thought process will be richer and your ability to adapt stronger. As you do so, the network of people you have developed at our university will become a valuable asset for everyone. I encourage you to use that asset as you tackle various issues in the future. When you approach those issues, always do so in a positive way, viewing them as a

valuable opportunity to amass learning and resolve issues through your ability to empathize. If you do that, I have no doubt you will acquire yet more new assets.

My hope for you after graduation from our university is that each of you will continue to grow as you adapt flexibly to change. Winston Churchill, who was Prime Minister of the United Kingdom during World War II and a recipient of the Nobel Prize in Literature, has left many famous sayings. One of these is the following: “To improve is to change, so to be perfect is to have changed often” (Winston Churchill, *100 of Winston Churchill’s Best Quotes*, Fusosha Publishing Inc.).

Moreover, I hope you will maintain hope as you pursue your activities in the midst of these many changes. As Churchill was also quoted as saying, “Nourish your hopes.” I too would tell each of you to nourish your hope, and to do so with people who empathize with that goal.

In closing, I wish you great success and happiness as you turn this auspicious corner in your lives today through your ties to Kyutech. Once again, congratulations.