Session 3. Architecture of the future, Cities of the Future

City and Architecture Awaiting Us in the Future

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The following elements - artificial intelligence based on quantum computing and big data; IoT(Internet of Things) connected with the 5th generation network; 3D printing and Weaving; Robot Craftsmanship; a combination of synthetic biology and Nano technology; economy based on electronic money - all amass into a situation where wearable VR and AR are widespread and also cause free economy where there is self-driving vehicles, drones, autonomous residential buildings, autonomous cities, autonomous behavior machines and ultimately, autonomous production.

Unlike the conventional industrial products, the products of the fourth industry will not end at user consumption but will cause recurring feedbacks that affect each other and result in an advent of a new, unexpected mechanism within. Perturbation, which is the most difficult relationship structure to predict by the human brain, occurs in the fourth industrial environment. In fact, it is impossible to interpret the perturbation results through computation. Finding the cause of mechanism and then presenting the proceeding direction of it may be the most effective method to comprehend the structural elements that constitute the fourth industry.

Products produced in the 4th industry are introduced with the modifier 'autonomous.' These are autonomous products, which artificial intelligence autonomously proceed with action by self-determining user's aim and will rather than by human's conscious manipulation. The operation is similar with artificial intelligence, which is often a subject discussed with fear. It is a frightening and an unfamiliar experience for mankind to yield to machines the role to think and judge, which has long been considered the exclusive property of mankind. Of course, these autonomous devices will be used primarily to replace unconscious operations, such as the automobile navigation and responses to biometric information. In any case, the fourth industrial environment is an environment for survival made up of evolutions that human beings have never experienced before.

Although the Fourth Industry transformed the production environment, mankind is already familiar with the revolutionary changes in the production environment. Mankind has undergone numerous, untested reforms. It has undergone dramatic and revolutionary changes such as two evolutionary revolutions, an agricultural revolution, an economic revolution, three industrial revolutions, and revolutions in awareness and knowledge. The 1450cc brain revolution by the expansion of the frontal lobe, the cognitive revolution of language-mediated intelligence (Collective Intelligence), the agricultural revolution from simply picking food in nature to
harvesting self-cultivated food, the revolution of consciousness through religion, philosophy and science, an economic revolution caused in the expanded market due to vast sailing expeditions worldwide and three industrial revolutions – the list goes on but each time, mankind has undergone a change that has never been experienced before.

The fourth industrial environment is likely to encounter an unprecedented architectural environment. This is because, there are still many architectural problems that cannot be solved with the current paradigm. Increase of urban population, overcrowding of city, destruction of natural environment. Autonomous environments outside the architectural constructions are difficult to cope with today’s architectural methods. To face these problems, we must accept the fourth industrial environment and look for ways to use it, just as efforts are being made in other fields of study.