Recommendations for the post-corona era
August 2020

Social ICT Research Center, Graduate School of Information Science and Technology
Research Center for the Creation of an Intelligent World
Social ICT Global Creative Leader Development Program
International Excellence in an Intelligent World graduate program

Coronavirus disease 2019 (COVID-19) has transformed society. In particular, the need for information and communications technology (ICT) systems has become more apparent. On the other hand, ICT is not used properly, which causes various problems. We have been conducting research believing that the social system needs to be redesigned on the basis of ICT systems. We hereby summarize the measures needed to solve the problems revealed by the COVID-19 pandemic in the following four points.

1. ICT with soul
Many current ICT systems simply imitate paper-based communications by electronic ones, losing sight of their original purpose of improving productivity. Such "soulless" systems do not improve operations, and may even be less efficient than old manual procedures. Too concerned about the confidentiality to electronically share infection information, people are still sending faxes. Distributing the Corona related special benefits to the head of the households rather than to the individuals is also due to half-hearted ICT. These are not problems caused by technical difficulties or by the current pandemic, so they will recur again and again as long as we are unwilling to go to the trouble of reforming old institutions and practices or using superficial privacy and security as an excuse for avoiding changes.

The fundamental reform of businesses and institutions using ICT is vital to solve these problems and also to essentially improve privacy and security. It is important to carefully sort out the necessary and unnecessary tasks in light of the original purpose and design ICT systems to support the necessary tasks. Let us free ourselves from conventions.

2. Virtual services
Traditional ICT applications have mostly complemented the functions of society. For

example, telemedicine was limited to cases in which it was necessary to supplement face-to-face treatment in underpopulated areas. Now that our lifestyles are drastically changing under the COVID-19 pandemic, however, there is an opportunity for ICT to create virtual services unconfined to existing real operations and services. The term "virtual" here means not "imaginary" but "actual/substantive," its original sense. Consider for example the problem that real-life chance encounters among students on university campuses or among participants at conferences rarely occur online. Rather than imitating physical encounters by technologies such as virtual reality, more diverse encounters may happen by matching technologies free from physical constraints. In this way, virtual services that go beyond the real world should be realized through ICT.

3. Upgraded democracy

There is no conflict between privacy (the right to data) and data utilization. Individual empowerment is the foundation of corporate and government empowerment. Not only should personal data be aggregated to the data-subject individuals so that they should be able to freely use their own aggregated data, but also universities, research institutes, companies, governments, and so on should be able to collect and analyze personal data in accordance with the law and the consent of the individuals, so that they disseminate information based on objective evidences, thereby monitoring and cooperating with each other. Free and diverse speech and democratic governance based on such fair sharing and utilization of data is considered better for the fight against infectious diseases and the sustainable promotion of industry and culture than information hiding and speech suppression by totalitarian powers. Support by artificial intelligence is essential for both individual and organizational empowerment, which is likely to bring about a new democracy that does not rely on ideologies such as the "autonomous individual."

4. Diversity and redundancy

The reduction in healthcare resources in favor of short-term economic benefits has increased the risk of medical collapse. In an uncertain world where correct answers are unpredictable, we have no choice but to aim for quasi-optimization in the medium to long term. It has become clear that this requires diversity and redundancy, which is a self-evident truth. Namely, it is necessary to extend the building and testing of various hypotheses (i.e., science) to the entire society. The recent decline of Japan is an inevitable consequence its misguided "selection and

concentration" policy, the exact opposite of "diversity and redundancy..

On the other hand, it is also necessary to standardize protocols and data formats to create diversity. The key to standardization is to ensure the interoperability and diversity of concrete data and services through rule-sharing. For example, unifying the rules of personal information protection across governments, companies, and municipalities to facilitate coordination among various services is an urgent task for developing countermeasures against infectious diseases and natural disasters, as well as for increasing productivity in industry and efficiency of government.