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'Infollution' and the Quality of Life

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Honorable Loretta Anania, Chairman of ITS,
Your Excellency, Minister of Information and Communications,
Distinguished Speakers and Participant Scholars,
Ladies and Gentlemen!!

I am very pleased to have this opportunity to speak at the ITS 14th Biannual Conference. This morning, I would like to discuss the topic, which may be unfamiliar and easily overlooked, but of great importance. I will discuss the negative side effects of information technology, which I call 'infollution' -- standing for informatization pollution, as I will explain. I suggest that we should take care to investigate infollution and to strengthen IT economy by shielding our society against its harmful effects.

1. The Power of Information Technology and its impacts on human nature

It goes without saying that information technology and its application to business processes have increased the productive capacity of the economy. Information technology and informatization have enriched the material abundance of society. Their economic contribution is sometimes compared with the sharp productivity increase during the industrial revolution, and we have named the enormous impact of information technology "the information revolution."

This information revolution, however, also has produced some negative secondary effects, and it is only recently that people have recognized this fact. The information revolution has affected not only the structure of the society but also human nature itself. The sad part is that with regard to the impacts on human nature, we have noticed only the tip of the proverbial iceberg.

At this point, let me sketch the impacts of information technology on

human nature.

As Internet use becomes widespread, the major mode of contact among people is changing from analog to digital communication.

The Internet allows for anonymity as the basis of interaction. Faceless contact on the Internet strips away emotional feelings that people communicate through physical contact. Life can become too dry and too dehumanized.

There is no doubt that the advanced communications infrastructure of optical fiber and mobile networks gives people the benefit of instant and convenient communications, but it also seems to encourage people to be more quick-tempered, impatient, and impetuous. People in the information society do not tolerate delay any more. They are frustrated by slow or interrupted Internet connections; they change or terminate links and interfaces at will; they approach communications on the model of purchasing fast food.

Even though people managed to live without the Internet for thousands of years, we now see more people who are addicted to the Internet. The balance of life for some is in great danger.

And so, while it is certain that information technology has increased economic efficiency and given rise to many new business opportunities, it is uncertain whether 'the quality of life' has been enhanced by the technology.

Economists and sociologists have paid some attention to the Digital Divide. Scholars have researched the causes of the Digital Divide, and they are now proposing remedies for its harmful effects.

However, other side effects have not received due attention from scholars. Only a few psychologists and mental physicians have noticed the side effects of the Internet on human psychology. They are beginning to suggest that we need to learn more about it, but their voices are not loud enough to attract major attention. The firms invested in information technology, whether they are service providers or vendors, are eager to launch their services and products to make money. They are not in any way adequately attentive to the side effects of their products and services for users.

This situation resembles that of the 19th century Industrialization era. Let me discuss the industrial age and derive some implications from this analogy for the discussion of infollution.

2. Industrialization and Pollution

The phenomenon of negative side effects in the information age bears close comparison with the industrial age. The industrial revolution of the 19th century brought about an expansion of productive capacity in the economy. A lot of people escaped from hunger and absolute poverty.

However, industrialization also produced adverse secondary effects. It deepened the income gaps between people and nations. It destroyed the natural environment, emitting pollution. Mass production society also did not make a priority of protecting diverse cultures. The beauty of uniformity and standardization was praised, while variety and diversity were regarded as unusual and non-productive. According to Marxian economists, workers were alienated both from the products they produced and from their peer workers. The spirit of community was lost in the industrial factory, and workers conceived of themselves as a mere factor input of production.

What can we learn from this comparison with the industrial age?

First, there is no free lunch!

Industrialization did not unilaterally enhance the quality of life. It increased the productive capacity of the economy at the expense of economic equity, the natural environment, and cultural diversity and variety. And just as industrialization was two sided -- benefits and costs -- so now is informatization. There surely will be a cost side to informatization, but its characteristics may now appear very subtle, implicit, and hard to observe, until the effects fully unfold.

Second, A stitch in time saves nine!

Prevention is better than a cure. It took a substantial amount of time for people to recognize the costs of industrialization. People did not consider it seriously in the period of expansionary industrialization. For example, it took more than one hundred years before researchers recognized the

harmful consequences of environmental pollution. The prominent English economist, A. C. Pigou, observed in 1920 that pollution causes this detrimental negative externality, and he asserted that serious research on pollution and its welfare impacts was needed. Although pollution is one of the important topics in economics nowadays, it was not so until 1920. People did not pay sufficient attention, until pollution became critically detrimental; even today many continue to discount its significance. The upshot of this late recognition is that we now pay substantial amounts to correct the problem. It is always too late to prepare for rain, if we do so only when the rain begins to fall. In turn, we have to consider the harmful effects of informatization and develop preventive measures, or else the clean-up will cost more.

This discussion yields an important third lesson!

A negative side effect, if it is not prevented at the right time, can even rival or dominate the good effects. Since due care was not paid to the side effects of industrialization, some people opted out of industrialization and capitalism, denying their basic benefits. If we do not pay enough attention to the side effects of informatization, there could be a wild wave of anti-informatization resulting in the loss to many of information technology's basic benefits.

3. Informatization and Infollution

Before describing infollution, let me say that the concept of infollution is not yet mature or well established. This is because we are just starting to see these side effects of information technology. We are still in the phase of expansionary informatization, so the tip of the iceberg is only beginning to emerge above the sea, and the vision of many is not accustomed to looking for it.

Infollution may be defined as any undesirable side effect brought about by information technology and its application. These side effects may be economic, social, cultural, or psychological. Infollution in the economy has been well documented under the name of the Digital Divide, so I will not allocate further time here to discussing it. Rather, I will devote the rest of my time to explaining some forms of infollution in society, culture, and human nature.

Here are some phenomenons of infollution.

Multiple Identities and Anonymity on the Net

Some people tend to pursue a dual identity, one in the physical world, and another in the virtual world. They may be confused among their multiple identities, and may even experience an identity crisis. This identity crisis explains why some people change their behavior dramatically because of the Internet -- because it provides a supposed shield of anonymity in the virtual world and deniability in the physical world. A nice or prudish person may flame with anger on the Net despite having no apparent reason to do so. It is not clear whether the Net encourages offensiveness or aggressiveness in human nature, but it is clear that the Net encourages many people to act out multiple or anonymous identities and associated personality traits.

Addiction to the Net

Some people are addicted to the Net. In Korea, where Internet usage is among the top-tier globally, Net addiction is widespread. Here is one case, reported in a Korean newspaper:

"Mr. J (30), who is a public employee in the city of Seoul, has resigned his job and terminated all external human relationships. He became so depressed, almost crippled for life. The reason? He spent most of his time playing the online game 'Lineage' in an Internet cafe. After his precious game items (armory and shields) were stolen by a hacker, he lost his appetite for life. He said, "I even felt like losing my family at one time."

You may regard this as an extreme case, but in Korea it is not. Even average people experience some degree of Net addiction. Economists say that for commodities and services, people exhibit a law of diminishing marginal utility, but for the consumption of the Net, this law does not seem to hold. Think of checking e-mail. In the first phase, you check e-mail daily, but in the second phase, you check it in the morning, noon, and evening; finally, you check it every hour. There seems to be some narcotic potential with the Net, and it is reported to be more prevalent among younger users.

Anti-social communities on the Net

There are some anti-social communities emerging on the Net, including

Web sites for suicide and for easy guides to make explosive bombs. These kinds of communities may have existed even before the information revolution, but the Internet has given added impetus to their formation. Here is one case reported in a Korean newspaper:

"I want to die beautifully. Tell me how.' This is the kind of Frequently Asked Questions (FAQs) you commonly see on a suicide website. The Korean Police reported that more than 36 suicide websites are in service. One teenager was arrested for suspicion of aiding a man to commit suicide in return for 700 dollars. They met each other through a suicide website."

Exclusiveness of Online communities

It is reported that an online community is more exclusive than an offline community, on average. This exclusivity is typified in the communities of online multi user dungeon (MUD) games. They view themselves as rival clans. If one clan's user attacks another clan, they form adversarial relationships easily. The problem is that this virtual relationship can amplify itself and spillover into the physical world. This type of extreme exclusiveness is not a basis for the development of community culture on the Net. A community, whether it be physical or virtual, needs to be tolerant and somewhat open. The Net can change human behavior and compromise the building of genuine communities.

There are also other phenomenon of infollution such as **information overload and spam-information, easy access to violence and obscenity**, which I will not mention here.

4. Concluding Remarks

Informatization is two-sided. There are benefits and costs of informatization. While we can see the benefits easily, the cost of informatization cannot be observed easily. We have to guard against undesirable infollution that information technology brings to us.

Here are some suggestions.

First, we researchers in information and telecommunications should devote much more attention to the causes and forms of infollution. More

scientific study of the relationship between information technology and human socio-psychology is in order. The fields of economics and business administration can also make substantial contributions to the research on infollution. Just as environmental economics considers the benefits and costs of industrialization and provides lots of useful policy implications, so should economics and business administration experts explore infollution in the fields of information technology and telecommunications. We need courses in the ethics of information technology, personnel training and seminars, and general education for students on infollution and the healthy use of the Internet. These would be some of the best practices to institute.

Second, firms in information technology should be more responsible for providing the financial and human resources to shield society against the harmful effects of infollution. They make money by selling products and services related to the Net and associated infrastructure, implicitly infolluting the society and possibly human nature itself. They also should include the social costs of infollution in their balance sheets. Otherwise, the level of infollution will be higher than the optimum level, just as the level of pollution was too high in the industrialization era. The consequence of unchecked infollution might even result in a backlash against the informatization process itself. This scenario would not be good for firms or for society itself. It is recommended that IT firms set aside some portion of their earnings to support research on infollution and to assist in funding resulting industry and societal prevention measures.

Thank you for listening and I wish you have a great time in the Conference!