An Infosocionomist's View

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Good Morning. The resume you have has been revised a bit but it's almost the same, so please take a look at it.

I know this academy is called the Socioinformatics Forum, but I have founded Infosocionomics Society. I feel sorry for the confusing name.

It is difficult to directly reply to questions regarding "Inquiring now the Socioinformatics," so today I'd like to talk about what problem consciousness Infosocionomics has and I'd be happy if you make it a reference or get some stimulation from it.

As you can see on the slide, I worked for many years at the Faculty of Arts of Tokyo University with Yasusuke Murakami and Seizaburo Sato, and the lifework for Murakami was, so to speak, "Industrial Society-ology," which I think was the general and interdisciplinary study of Industrial Society. From this viewpoint he published works such as "Pathology of The Industrial Society," "The Era of the New Middle Mass" or "Anti-classical Political Economy," but after Murakami's death I wondered in many ways what I should do to succeed his lifework of "Industrial Society-ology," and I realized that the following issues still remain.

Many 20th century economists besides Murakami identified modern society with industrial society, while political scientists regard the rise of nation states or sovereign states as the beginning of modernization. From economists' point of view, however, the full-scale foundation of the nation state was achieved only after industrialization. Thus they emphasize that it was industrialization that provided the foundation for the modern, full-fledged nation state. However, if you are free from the notion that "Industrial Society = Modern Society," you may be able to have a different view.

By the way, one well-known idea about the social revolution that includes modernization as a part of it is Alvin Toffler's "Third Wave" theory that adopted a trichotomy of human history into the pre-modern, modern and post modern eras. Toffler asserts that since the 1980s the "3rd wave society" emerged, following the agricultural and industrial societies. However, terms such as "information revolution" or "information society" were not

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used in his book. In the 1970s Daniel Bell was among the first to develop the "Post-industrial society" theory asking what kind of society will come after industrial society. But it was much later that he started to use a positive term such as "knowledge society" or "information society."

In Japan, the term "Information Society" was created very early. The pioneer was Tadao Umesao, who published an article on "Information Industry" (1963). Then, in the late 1960s, more new terms such as "information society (joho shakai)," "information revolution (joho kakumei)" or "informatization (johoka)" were created one after another by Yujiro Hayashi (Economic Planning Agency), Reikichi Shirane (then at NTT), Ken'ichi Koyama (Gakushuin University), and Yoneji Masuda (former researcher at Manchuria Railway and the author of an English book, The Information Society as Post-Industrial Society). By the way, I happened to learn recently that in the 1st Comprehensive National Development Plan (1969), it was already pointed out clearly that "From now on, it is the era of informatization. We have to be ready to respond to the information society." This means that nascent discussions on informatization in those days were promptly understood and reflected in a formal development plan of the government.

But Murakami still had some doubts, even in his late years, about the assessment of "informatization." He argued that at least two different interpretations can be given to this phenomenon. One is to identify informatization with "super-industrialization" so that it means the "third industrial revolution." In other words, this new "revolution" centering around the computer industry is nothing but a new "industrial revolution" that follows the second industrial revolution in the 20th century. At the same time, however, Murakami admitted the possibility of another interpretation - that is, to view informatization as "trans-industrialization." If one adopts this interpretation, Murakami thought that informatization could be the process of "post-industrialization" that surpasses industrialization itself. If the latter interpretation is more valid, and if one identifies industrialization with modernization, then "informatization" should mean the transition to post-modernity. But could we really assert that? Murakami passed away before he settled this question.

So I thought I should establish my own viewpoint and decided to adopt a view that information society is society in the "last modern" phase of modernization. That is to say, modernization will continue beyond the phase of industrialization. But then, it can be thought that, modernization had also begun before industrialization. In other words, there was another phase of modernization preceding industrialization. It was in this first phase, the phase that might be named "militarization" or "statization," namely the emerging phase of modernity that the modern sovereign states were given rise to. In this sense we may say that, agreeing with the political scientists, modernization emerged in the 16th or the 17th century.

From this point of view, when we consider the "three waves" of modernization itself, we can argue that the modern society first "emerged" in the form of the militaristic society in the 16th century, then made the "breakthrough" as the industrial society in the
second half of the 18th century and is finally entering its "maturation" phase since the second half of the 20th century as a transition to the information society takes place. I would also like to point out that each phase doesn't necessarily begin after the end of the preceding one, but they overlap to a certain degree. Moreover, we can further distinguish three minor phases in each major phase of modernization. For example, the phase of militarization, which is the "emergence" phase of the modern society, can be divided into 3 minor phases: "emergence of emergence", "breakthrough of emergence" and "maturation of emergence." We can then postulate that the "maturation" phase of the militaristic society itself, which corresponds to the "maturation of emergence" phase of the modern society, actually overlaps with the "emergence" phase of the industrial society, which in turn corresponds to the "emergence of breakthrough" phase of the modern society. According to such a view, we can argue that the industrialization has entered its "maturation" phase since the second half of the 20th century. In other words, the industrial society has entered the era of the third industrial revolution since the second half of the 20th century, but at the same time, this era overlaps with the "emergence" phase of the information society, which corresponds to the "emergence of maturation" phase of modernization. In my view this emergence phase of informatization is nothing but the era of the first "information revolution" that is simultaneously taking place with the "third industrial revolution."

So if I distinguish three phases of modernization, each should be similar in the sense that they are phases in an overall modernization process and, at the same time, each should have its own uniqueness in the sense that they represent a different phase.

Now, if I focus on the similarities I can say that modernization as a whole represents a continuing process of increasing power of individuals and organizations. Thus in the militarization phase, regional organizations are gradually centralized to form a modern sovereign state, and further, once the process of sovereign-state formation is completed these states launch global expansion (promotion and exhibition of their national prestige) by means of war and colonization. Similarly, in the industrialization phase, economic power is first concentrated in industrial enterprises. Then these enterprises seek global development in the world marketplace by means of accumulation and demonstration of their wealth. Finally, in the informatization phase, intellectual power will be accumulated in newly rising organizations that may be called "information intelpries." Then they will be engaged in what may be called the "wisdom game" in the global "intelplace" by means of acquisition and execution of wisdom. If war was the basic form of interaction between sovereign states and competition was the basic form of interaction between industrial enterprises, then collaboration will be the basic form of interaction between information intelpries in the informatization phase of modernization. I am tempted to posit that one important outcome of the wisdom game is self-accumulation or self-organization of what might be called "intellectual capital" or "intai", just as "capital accumulation" was the main
outcome of the capitalistic "wealth game."

Recently the book *The World is Flat* by Thomas Friedman seems to be widely read. In this book the author distinguishes three forms of globalization: Globalization "1.0", "2.0" and "3.0." In my conceptual framework his globalization 1.0 corresponds to "internationalization" during the statization phase of modernization because the process of modern sovereign-state formation led to the birth of international society. Globalization 2.0 corresponds to the process of world-marketplace formation during the industrialization phase of modernization. Globalization 3.0 of today, which is actually globalization *per se*, will then be interpreted as the process of global-intelplace formation, in contrast to the process of world-marketplace formation. It is through globalization 3.0 in this sense, in which most knowledge will be freely sharable and what I call "intel" will be self-accumulated all over the world with the Internet as the fundamental infrastructure for such a process, that propagation of modern civilization will finally be truly global and modernization itself will reach its maturation (and probably last) phase.

When it comes to modernization, until quite recently it has been taken as granted that social change such as modernization can take place only in Europe, with Japan as the only exceptional non-European case. That is to say, the rest of the world was believed to be unable to modernize. For this reason the central theme of "modernization theory" was to explain why modernization outside Europe was possible only in Japan. But today no one can deny the fact that modernization is propagating to almost everywhere, beginning with four little "dragons" in East Asia, followed by the BRICS and the "Next Eleven" as Goldman Sachs pointed out. Clyde Prestowitz, who once became famous as the author of the bestseller *Trading Places*, has just published a new book called *Three Billion New Capitalists: The Great Shift of Wealth and Power to the East*. In these newly developing areas, what Chalmers Johnson and Yasusuke Murakami called "developmentalism" has been the guiding principle, particularly among the BRICS countries. At the same time, however, there seem to be many other areas that cannot successfully adopt developmentalism by themselves. We will probably have to work out a new principle that might be called "co-developmentalism" to help or collaborate with them in order to promote modernization of those areas. I would like to talk more about this later.

Having those new issues in mind, I am tempted to argue that if modernization should really propagate globally, it might be worthwhile to review again the process of modernization as well as modernization theories in the past.

For example, how about extending the time-horizon of Umesao's "Ecological View of History"? In his original view Umesao postulated that the modernization process began sometime in the 16th century in both Europe and Japan in parallel. But can we not assume that "modernization in a broader sense" started about 500 years earlier, for instance around the 10th century, not only in Europe and Japan alone but also in many other parts of this planet? This may suggest that "modernization in a broader sense" first
emerged as "feudalization" that laid the foundation for rise of regionally autonomous powers. The maturity of this "emergence" phase itself (namely, the maturation of emergence) may have been the "statization," or the formation of regional "sovereign states." But then we can also find that, since about 500 years ago, the "breakthrough" phase of modernization in a broader sense had already started with the formation of the "world capitalism system" in Wallerstein's sense. And finally, since the second half of the 20th century as modernization in a narrower sense(that is, modernization lead by European states since the mid 16th century entered its maturation phase in the form of "informatization" modernization in a broader sense also entered its maturation phase simultaneously. This is my overall vision of "modernization in a broader sense."

Modernization in this broader sense started, most probably, independently in both Japan and Europe, and then evolved in parallel at both ends of the Eurasian Continent. But this is not the whole story. According to Heita Kawakatsu, an economic historian, we can find that a similar process of social change had also started in the Song period of China, especially in the Southern Song period. He further suggests that the activities of Mongols stimulated both Japan and Europe to accelerate the modernization process that had begun autonomously. That is a very interesting idea. Having those developments in mind, we can even more convincingly assert that, since about the 10th century, both Japan and Europe simultaneously started the process of modernization in a broader sense; that is, the process of "feudalization" in a parallel fashion. During the following several centuries, these two modern civilizations in Japan and Europe twice experienced main encounters. The first encounter took place in the mid-16th century. On that occasion, Japan accepted two important civilizational components from Europe: The "2 Gs" of God and Gun. Then in a mere several decades that followed, both faith in Christianity and production and use of guns prevailed among the Japanese people with enormous speed. However, after about 100 years both of them were virtually abandoned or forbidden and Japan and Europe pursued separate paths. In terms of economic development, Europe achieved the "industrial revolution" while Japan succeeded in the "industrious revolution."

In the mid-19th century a second encounter between Japan and Europe took place. On that occasion Japan again accepted two new civilizational components: the "2 Is" of Imperialism and Industrialism. Japan then launched building and expansion of a sovereign state after a European model. Japan also made endeavors to graft European-style industrialization onto its industrious economy by ways of mechanization and commodification of the production process. This time again, within less than 100 years, Japan made great successes in accepting those new civilizational components, though at this time it hasn't yet reached the point where Japan can abandon them. Of course, we may claim that Japan has in fact abandoned at least the first "I" (Imperialism) after having lost the war in the past, but there still remains some doubt about that. On the other hand, with respect to the second "I" (Industrialism),
we have recently been observing a rise of strong criticism or reflection of industrialism not only in Japan but also globally, so chances are that by the mid-21st century, Japan or for that matter the rest of the industrialized world also may be seriously considering the possibility of abandoning or at least self-restraining further industrialization. At this juncture, I may also take into consideration some implications of maturation of modernity in a broader sense. During this coming maturation phase I expect that there will take place reevaluations of value systems, namely "culture," that lie behind the modern civilization so that it can take some alternative course of development after it enters the maturation phase.

To consider those issues more fully, I would like to introduce you to two fundamental hypotheses of infosocionomics. The first one is a diachronic hypothesis that the birth and extinction of social things follow an S-shaped curve or a sigmoid. That is, if we measure size, or the growth rate, or some other relevant index of a social thing in question on the vertical axis and time on the horizontal axis, we can visualize that it first "emerges" and grows very slowly but then makes a "breakthrough" so that its growth accelerates and finally it "matures," in many cases after some bubble-like overshooting. In this process the bubble blows up and its size is readjusted so that it gains a certain well-established position among other existing social things. After maturation it may keep on surviving for a long time or may eventually decline and pass away.

Moreover, we can imagine that a series of similar social things repeatedly and succeedingly emerge following similar sigmoid paths. If there occur some overlaps between the preceding sigmoid and the succeeding one so that the former's maturation phase coincides with the latter's emergence phase, we may regard such an overlapping phase as a downward-sloping phase of a "cycle," particularly a "long cycle" that some social scientists claim to have discovered in the process of social evolution. During this phase a "progressive" way of thinking trying to come to grips with the emerging new phase and the "conservative" way of thinking clinging to the matured phase tend to stand in conflict with each other, which may lead to social turmoil and in some cases political conflicts such as a war or a revolution. In contrast, when there is no overlapping and just one sigmoid is in its "break-through" phase, there is little conflict in understanding the character of the era, or the "Zeitgeist," and the social cycle is in its upward-sloping phase.

But in the next phase of ascending (that is the breakthrough phase of the next ogive), those confrontations are basically resolved and the growth advances in a manner of "Go for it!" In that sense, the diachronic process of the social change may be explained in the form of the repeating long wave. We may also conceive of a situation where one large sigmoid representing a social thing at large can be divided into an overlapping and overlaying chain of smaller sigmoids, each corresponding to "emergence," "break-through," and "maturation" of the larger social thing but itself representing a smaller social thing. We can then imagine a "fractal-like" structure of sigmoids of various orders.

The second fundamental hypothesis is a
synchronic one. It assumes that many classes of social things follow, in terms of their size distribution, the "power-law" or "Zipf" distribution.

Recently the term "long tail" became quite popular, so I think many of you have heard about it. In fact the white paper on Information and Communications for this fiscal year took a special look at that and dedicated a whole column to explain this phenomenon. Chris Anderson, who first coined this term, initially argued that the long tail phenomenon denied the "Pareto Law" or the "Law of 80:20" in business. This Law asserts, for instance, that the top 20% of employees earn 80% of the total profit of the firm they work for, or that the top 20% of best-selling books occupy 80% of the total earnings of booksellers. However, in his new book published this July, he discarded his former claim and instead points out that the long-tail phenomenon is just another expression of the "Law of 80 to 20" or the power-law distribution. This means that power-law or Zipf distribution is a universal law that applies to the business world. Thus, when we correlate the level of revenue and the rank of firms according to their revenues, the shape of the distribution looks like a hyperbolic curve type. Or it is drawn as a downward-sloping straight line on a double logarithmic plane. With this result in mind Anderson notices that the development of information technology is freeing people from the physical and institutional constraints of the past, so that, for example, they can now publish or sell books online that sell only in small numbers and were regarded as unsuitable for publication or to be kept in stock. In other words, some of the long-tail part that had been cut off can now be realized making the power-law shape of distribution more conspicuous. Of course, I am ready to admit there still remains a lot of room for further discussion and elaboration concerning this hypothesis. But, as a kind of first-order approximation I think now we may safely expect that quite a few social things follow the power-law or Zipf distribution.

To recapitulate my talk so far, I would like to posit that many social things follow these two empirical "laws." Thus, diachronically, they emerge, grow, and perish following S-shaped paths and, synchronically, they are distributed according to the power-law or Zipf distribution. I am also tempted to anticipate that there is some correlation between the value of exponents and the phase of S-shape curves. At any rate, I believe that for Infosocionomics to move ahead further research concerning these "laws" are strongly called for.

Let me now add a few more words about the S-shaped curve. As I have said, a social thing can be decomposed into its components, each of which follows its own S-shaped path during its life. Probably we can repeat such a decomposition many times, thus obtaining a fractal-like structure of overlapping and succeeding S-shaped curves.

For example, if we visualize the whole process of modernization with a big S-shaped curve (as is shown in the resume by a thick red line), it can be decomposed into at least three smaller S-shaped curves, each corresponding to the phases of 1) militarization, namely, "emergence" of
modernization as sovereign-state formation, 2) industrialization, namely, "break-through" of modernization as development of modern industrial enterprises, and 3) "informatization," namely, "maturation" of modernization as emergence and spread of what I would like to call "information inteprise" and the "wisdom game" they play. Please notice that I have drawn a decomposed picture so that the maturation phase of the preceding small S-shaped curve overlaps with the emergence phase of the following small S-shaped curve. At the same time, we can imagine a possibility that the "maturation" phase of the overall modernization itself may be overlapping with the "emergence" phase of a new, post-modern civilization. If so, then we can also argue that "informatization" represents overlapping of maturation of modern civilization and emergence of post-modern civilization. Even though I have no objection to such an interpretation, I still would like to emphasize the viewpoint to regard "informatization" above all as the last, maturation phase of modern civilization.

Let me now return to the topic of modernization in a broader sense. If we place the historical process of modernization in a longer time-horizon, we may postulate that modernization started in Japan and Europe in about the 10th or 11th century. It was around that time that the "feudal society" emerged in Europe and the "ie society" was born in Japan. Both of them saw a rise of local, territorial powers that had formidable military power and were highly independent. If we recognize these phenomena as the "emergence" of modern civilization in a broader sense, then the period after the 16th or the 17th century during which the building process of sovereign states took place in Western Europe and, in Japan, formation of a centrally united political power that eventually produced "Edo civilization" or "Tokugawa society," could be interpreted as the "breakthrough" phase of the modernization in this broader sense.

It was in eastern Japan that a unique group of warriors emerged and developed between the 10th and the 15th century. They were developer landlords who had mastered the art of arrow-shooting while riding on a horse. They managed to build their own state, the Kamakura state. And since the 16th century the center of new developments shifted to central Japan, where local farmers turned into warriors and built their own regional states (Kokka), beating down the existing warrior powers. The Tokugawa state can be seen as a global unification (Tenka) of those regional states. In other words, if I follow Kyoji Watanabe's fascinating interpretation of Japan's history (The Origin of Early Modern Japan), the Tokugawa state was a state built basically on the parvenue farmer-warriors' power rather than traditional warriors.

Then since the second half of the 20th century, this modernization in a broader sense entered into the phase of maturation almost at the same time both in Japan and Europe. Today, we are becoming aware of similarities rather than differences between the maturing Europe and Japan in lifestyles, new values, and attitudes toward informatization of society. These two regions may be nearing each other even in terms of "culture" so that they value collaboration and sustenance much more highly than competition and growth.

If we review again the process of social
changes in Europe since the mid-16th century, in terms of modernization in a narrower sense, militarization or statization that emerged as the rise of "absolute monarchy" shifted into the "break-through" phase in the form of "constitutional monarchy" about a hundred years later, finally maturing as "republican democracy", still another hundred years later. Since then "republican democracy" remains as the global standard for the modern polity. This maturation of statization overlapped with emergence of industrialization, namely, the break-through phase of modernization in a narrower sense. Following this overall trend of modernization in Europe, since the mid-19th century all of Germany, the US and Japan, who were the "latecomers" of modernization in a narrower sense, intentionally adopted the "developmentalistic" policy with the help of which they successfully promoted both militarization and industrialization simultaneously.

But since the mid-20th century, the number of nations or regions admitted to be independent increased very rapidly. Most of them ambitiously attempted to employ "socialism" as the latest version of developmentalistic modernization, alas, without much success either in state-building or in industrialization. No matter how miserable the performances these newly emerged states made in their attempts to modernize, as long as the international society regard it as their sacred right for them to modernize, harbingers of modernization must accept it as their international obligation to help or collaborate with those latecomers so that propagation of modernization takes place globally. This is, in my view, a new ideal that should be widely shared in this century. I would like to call it "co-developmentalism" and sincerely hope that it will replace the philosophy of "international development aid" in the 20th century, which seems to have been more one-sided and selfish.

At the same time, however, I am afraid I cannot deny the possibility that some of the bigger latecomers continue to adopt traditional "developmentalistic" strategies to promote modernization by themselves, leading to depletion of natural resources, environmental destruction, and/or international conflicts. In other words, the 21st century may witness repeat performances of the 20th century like the developmentalism principle in the sense that new latecomers first make their best efforts to develop nuclear weapons and only after they have succeeded they launch promotion of industrialization in earnest.

By the way, the 20th century could be seen as the century of developmentalism. The first-generation latecomers such as Germany and Japan who had successfully built modern sovereign states also rose as formidable industrial and trade powers. They then made a case against the monopoly of colonies and world markets by early-comers and even challenged them militarily. That challenge finally turned into a war among the latecomers themselves (namely, US-SU-China versus Japan-Germany-Italy), with the outcome that wars of invasion and colonization (or what I call the Prestige Game among sovereign states), that had been admitted internationally as execution of sovereign rights of the modern states were
deprived of their legitimacy. Since then most states, particularly those first-generation latecomers who lost wars decided to concentrate on industrialization and to make their states economic powers.

Contrary to that, in the 21st century or since the mid-20th century, some of the second-generation states seem to have learnt the lessons of economic developmentalism with which Japan or Germany made a great success again. China and India, which have been showing remarkable economic success these years can be taken as typical examples. However, doesn't this imply another nightmare some decades from now? That is to say, after the success of this new developmentalism, wouldn't it be possible that some of the second-generation latecomers might want to challenge another time the advanced states in some form or other, including something like a cyberwar? This is certainly undesirable. I don't want the world to repeat the tragedies of the previous century. There is some hope, though. That is the rise of a new wave of what I called "co-developmentlalism." I believe that we will have to make our best efforts to propagate this philosophy so that we can control the older developmentalism, thus avoiding the clash between the early-comers and latecomers of modern civilization either in the form of all-out war or international terrorism.

So far I have been talking about my diachronic hypotheses. Now I would like to move to the synchronic ones. A graph of the Zipf distribution, which is the distribution of correlation between the sizes and ranks of social things, shows a small number of huge things on the left ("big head" or "short head"), while the overwhelming majority of small ones is placed on the right forming a "long tail" so that the whole curve looks like a hyperbolic curve. If the graph is drawn on the double logarithmic plane, it becomes a downward-sloping straight line. That means each individual that belongs to this distribution class is homogeneous with one another in the sense that there is no demarcation point separating the "head" from the "tail" on this straight line. So dividing this straight line somewhere and calling one the "head," the other the "tail" is just an arbitrary distinction. If the so-called "long tail" concept is based on such an arbitrary distinction it should be viewed with some suspicion.

But I think such a distribution has a unique use in social science. That is, it can provide an overall view of distributions of wealth, income, and so on in a society. For example, in a pre-modern "class" society, if enough data is available so that one can draw its graph placing its members according to the size and rank of wealth or income on a double logarithmic plane, most probably it will not be a straight line but a kinked line corresponding to the "class division" of such a society. Namely, people were divided into a small number of aristocrats, a middle number of citizens and an extremely large number of farmers, even though the farmer class is represented as only a "short tail" on a double logarithmic plane. In contrast, the central feature of capitalistic modernization (industrialization) was, at least "theoretically," in removing the traditional class distinction and provided an equal chance to participate, if you like, in capitalistic competition on a level-playing field for all the members of
society. However, needless to say, such a homogenization never meant an "equal" distribution of wealth or income. Wealth and income in the modern society are distributed following the "power-law" or Zipf distribution. In this sense, in today's society where there is assumed to exist no institutional class distinction, a big inequality of wealth/income distribution still remains and even seems to be expanding as informatization proceeds. Nevertheless we should note that, in a capitalistic society, people can move up or down along one downward-sloping straight line. The fundamental feature of such a society is that a social environment for "free" competition is formed in which people can go upward to rise or down to ruin. But Karl Marx, I think, thought that in this capitalistic society there is not only a class distinction between bourgeoisie and proletariat but also there eventually develops a further bipolarization as the result of completion, producing just a few monopolistic capitalists on the one hand and, on the other hand, a large number of "lumpen proletariat" who has nothing to lose but an iron chain. That was why he believed that a political revolution by the proletariat was inevitable.

What actually happened in the real industrialized society, however, was not a revolution but a transition to the welfare society. That is, the government introduced an anti-monopoly policy together with a redistribution policy of income and wealth in the form of progressive income and inheritance taxes that were used to compensate incomes of poor people. This policy was effective both in deterring monopolies and in raising the minimum level of income while reducing its maximum level. As a result, I presume that the shape of the Zipf distribution curve of income in today's "welfare society" came to have two kinks. Namely, instead of being just one straight line, it probably is comprised by three straight lines. This means that a kind of qualitative (class) differentiation was reintroduced among the members of modern society, even though the distribution of wealth and income were relatively equalized. This has certainly been the development in modern society quite different from Marx's anticipation.

In infosocionomics, the most prevalent type of social interaction individuals or organizations performs in each of the three main phases of modernization is regarded as a kind of social game. For example, in the militarized society, sovereign states have been playing what might be called the "prestige game," the study of which has been established as the discipline of political science. Then in the industrial society, it was the "wealth game" that came to be widely played leading to the birth of a new discipline of social science called "economics." Together with Adam Smith's Wealth of Nations I believe Karl Marx's Das Kapital was a monumental writing that deeply analyzed the wealth game.

Similarly, in the information society from now on, we will observe the development and spread of a new social game that I would like to propose to call the "wisdom game," of which the main purpose is, in my term, to acquire and use the power of persuasion, though I also notice that the term "reputation game" has already been used widely. Just as the prestige game acted as a stimulus to the
birth of politics and the wealth game to the birth of economics, the wealth game will also act as a stimulus to the birth of still another social science discipline. I am tempted to call it "sociology." But the term sociology has long been used to indicate the rest of social study fields that have not been covered either by politics or economics. In my humble opinion, however, it is precisely with the rise of a new social game that a new discipline of social science obtains its inherent object of study. So, if I am to avoid the use of an existing term, I would like to suggest "socionomics" as the name of this new discipline. Actually, that is why we adopted "Infosocionomics" as the name of a new academic society to study the information society where we believe a new social game, the wisdom game, will spread.

Recently, Yochai Benkler published *The Wealth of Networks*, which is no doubt a very important and timely study of the information society. But if I could I would rather write *The Wisdom of Networks*. Or I hope I could be ambitious enough to write something like *The Wisdom-Capital* or perhaps *The Intel mimicking Marx* rather than Smith.

Marx began *Das Kapital* with the phrase "The wealth of those societies in which the capitalist mode of production prevails, presents itself as an immense accumulation of commodities,' its unit being a single commodity. Our investigation must therefore begin with the analysis of a commodity" (quoted from the English edition). So, on my part I am dreaming to begin my would-be book *The Intel* with a phrase such as "The wisdom of those societies in which the intelist mode of creation prevails, presents itself as an immense accumulation of sharables,' its unit being a single sharable. Our investigation must therefore begin with the analysis of a sharable." What I have called "sharables" here are nothing but individual elements of the wisdom of the information society, which are created not for the purpose of selling it but sharing it. In other words, sharables in the information society are not commodities that are produced to be sold in the marketplace. They are freely shared in what might be called the "intelplace," the concrete form of which may be guessed from today's Internet.

And each sharable has its unique "URL" taking the form of a "permalink" that can be directly reachable. It is also linked to and from many other sharables in various ways. There are both "outgoing links" to reach other sharable and "incoming links" to come in from other sharables.

Most probably typing in URLs directly to reach other sharables can be compared to bartering of commodities in the industrial society. Needless to say it is as inconvenient and cumbersome as bartering of commodities. But once the search engine is invented and improved so that one can easily find and reach almost any sharable simply by typing relevant keyword(s) into it, we can compare this way of sharing of sharables to exchange of commodities mediated by money. Namely, in sharable-sharing it will be keywords/search engines that play the role of money in commodity exchange. Thus I presume that the fundamental part of "infosocionomics" or simply "socionomics" would be comprised by analyses of sharable-sharing both in its direct form (URL typing) and in its mediated form (keyword searching).

In any case, I think one characteristic of the
social order in modern society is that a macro-level order spontaneously emerges out of micro-level social game interactions. If I borrow the words of Wataru Yasutomi and Kunihiko Kaneko, "a certain dynamic equilibrium state is achieved where there is stagnation of order and then it leads to growth of the whole."

Thus during the initial "emergence" phase of modernization, that is, militarization, a general recognition was formed. It was the recognition that if the "prestige game" is widely played following a certain set of rules, there will eventually emerge a relatively peaceful situation where something like a "balance of power" between warring states is achieved, while the power and prestige of each state keeps on growing. Similarly, during the second "breakthrough" phase of modernization, that is, industrialization, it was widely recognized that if the "wealth game" is widely played following a certain set of rules, a wonderful order is created during the game, and there will eventually emerge a relatively prosperous situation thanks to the functioning of "God's invisible hand," where something like a "market equilibrium" between supply and demand of commodities is achieved while the power and wealth of society keeps on growing. For this reason I anticipate that during the third "maturation" phase of modernization, that is, informatization, if the "wisdom game" comes to be widely played following a certain set of rules, there will eventually emerge a relatively pleasant situation (or what Ivan Illich called "conviviality") where something like an "intellectual equilibrium" between supply and demand of sharables will be achieved, while the power and wisdom of society keeps on growing.

Of course, no social order is perfect. For that matter the modern social order of balance and growth that spontaneously emerges as a result of a social game is no exception. It is inevitably accompanied by such negative traits as an unacceptable degree of inequality in the (power-law) distribution of social powers and cyclical disturbances (such as war and depression) in growth of social powers. Thus it is highly likely that the future social order of conviviality will also have to be accompanied by some kind of inequality (such as "digital divide") and cyclical disturbances (such as rages and doldrums of fashion).

When these negative traits are recognized, intentional efforts to alleviate them will be made in the form of governmental policies, such as the "balance of power policy" or "anti-cyclical economic policy.” We may call such policies attempts to "create" desirable social orders.

In fact, in modern society until now, a number of such policies as well as strategies for them have been designed and implemented for the purpose of intentionally and artificially creating better social orders rather than just wait-and-seeing if the spontaneous forces work. Adoption of "developmentalistic strategy," implementation of "structural reforms policy," and collusion for a political "revolution" are typical examples. The very important point to be noticed, however, is that those intentional endeavors do not work out fully, or they are destined to have some limits. After all, we human beings are not omnipotent. I would rather like to point out here that, as a rule, new social
orders that alleviate the defects of old orders spontaneously "emerge" as a result of transition into a new phase in the evolutionary process of modernization. That is, it was economic growth and industrialization that basically solved problems related to human rights. Similarly, I think chances are that intellectual growth informatization will be more effective than today's socio-economic policies in solving or alleviating people's dissatisfaction due to unequal distribution of income and wealth.

In this sense, first, there's some limit in our endeavor to intentionally "create" a better social order. When it comes to solution or alleviation of existing social problems, more promising is "emergence" of a new order. But second, human beings nevertheless will never give up intentional efforts to "create" a better order. Actually, from a higher point of view, the intentional efforts for creation themselves "emerge" both spontaneously and necessarily.

This reminds me of Kozo Uno's three levels of economic theory: "principle," "stage theory," and "present state analysis." In my interpretation, his "principle" means an analysis of the "emergence" of capitalistic economic order that looks to reproduce itself eternally. Such an order transcends the dimension of time. In contrast, his "stage theory" is an attempt to demonstrate that in each phase of industrialization different types of economic policy, or intentional efforts to "create" a certain economic order, are almost inevitably made as if they are governed by a natural "law." And it is only in the last level of his system of economic theory that Uno provides a room for human free will or choice. This incidentally is the level from which Uno himself abstained as a social scientist and yielded it to "revolutionaries." I think this is very interesting and suggestive.

If we are to learn again from Karl Marx, the most important point in *Das Kapital* is the recognition that the social order of market exchange and capital accumulation is something that inevitably "emerges" beyond intentions and desires of individual capitalists or politicians, governed only by the law of "natural-historical" development of human society. After extensive observations and analyses of this "emergence" process, he not only wondered about and praised its exquisiteness and efficiency, but also pointed out that it is also accompanied by some serious defects, particularly too large inequality in the distribution of wealth and too violent disturbances of the order that cyclically take place as economic crises. Then Kozo Uno, his disciple, went one step further and pointed out that the efforts to cope with these defects themselves "emerge" following natural-historical laws.

Then what can we say about a "revolution"? Does it also "emerge" necessarily following some natural-historical law such as the "correspondence between forces of production and relations of production," or is it a product of human revolutionaries' intentional choice? Uno obviously took the latter view. But I am not so sure about Marx's position on this issue, though we might say that his "materialistic interpretation of history" predicts from, so to speak, the highest viewpoint, the historical necessity of "emergence" of revolutions. It is well known that Stalin took a gray, sophisticated position concerning this issue by saying that revolutionaries perform a revolution by
"subjectively" applying the "objective" law of necessary "correspondence between forces of production and relations of production." But distinction between "emergence" and "creation" can only be made depending on which viewpoint we take to analyze human behavior.

Be that as it may, the final point I would like to make today is that the decisive error Marx made was that he expected that a revolution would be lead by the suppressed masses. That is, he believed that it is the "proletariat" class who occupies an overwhelming majority in the capitalist society that creates the next communist stage of social development. This could be the limitation of the times for Marx who was living in the 19th century when industrialization was only in its emerging phase. Nevertheless I don't understand why Marx overlooked the simple fact that people who lead the "bourgeois revolution" in the industrial society belonged to the citizen class who exclusively embodied the newly rising strong economic power but who represented only a small minority. Similarly, if a political "revolution" is to take place in today's nascent information society, most probably it would be lead not by the "proletariat" of the industrial society but by the newly emerging social group who embodies the power of informatization, namely, those who are called "netizens." It was because Marx expected the coming of a next "revolution" too hastily before the new phase of modernization arrives that he could only place his hope on the then-existing repressed mass of "proletariat."

Having said that I am also ready to admit that the suppressed mass may sometimes cause a revolution depending on the social situation of the day, but they could never be the promoter of a revolution that cuts out a new phase of social evolution. In that sense they would be more reactionaries than revolutionaries. That is their historical limitation and, at the same time, the limitation of the researchers who placed hope on them. Since Marx didn't know informatization or the rise of the netizens class, his theory of socialist revolution had to be limited in many ways. Considering that, we may come to more interesting interpretations different from Marx's original views on the directions and traits of social changes that are going on today. That is what we, infosocionomists, are pondering these days.

This concludes my lecture. Thank you so much for kindly listening.