Interview with Joichi Ito, Director of the MIT Media Lab

Will Digital Technology Make Human Beings Happy?

By *Japan SPOTLIGHT*

Joichi Ito has worked in the IT business since the 1980s, earning a high profile as an entrepreneur who has founded a number of IT start-ups and as a board member of distinguished companies like The New York Times Company, the Mozilla Foundation, and Sony Corporation. He currently works as a professor of Media Arts and Science at MIT and is director of MIT Media Lab. Born in Kyoto and educated in the United States, with a variety of international work experience, Ito is one of the most distinguished IT experts in the world. He gave us his views on the digitalized world and human beings in the following interview.
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Introduction

JS: Could you briefly introduce yourself and in particular what the MIT Media Lab is doing?

Ito: I am the director of the Media Lab at MIT, and I also have an appointment as a visiting professor at Harvard Law School. The Media Lab is about 30 years old, and we are less focused on any specific field — it's more of a process. The important thing about the Media Lab is that it is very applied, and so we only do research that involves making something, whether it be biological or digital or physical. Everything we do is project-oriented. The structure is fairly unique in that we are corporate funded; we have about 90 companies that fund a consortium that we then distribute among projects. We have about 800 people, some 250 of whom are graduate students and 300 part-time undergraduates, and 500 projects, ranging from the study of learning to music, synthetic biology, robots, AI — there is quite a range. I think that the key point is that whether we focus on something that involves humans or machines or society and technology, we approach it in a very interdisciplinary way. My personal research is mostly focused around AI and ethics and law. My background is in Internet-related organizations and protocols and their impact on industry and society.

Photo: Diana Levine

Joichi Ito

Fourth Industrial Revolution's Impact on Social & Political Economy

JS: So you are definitely the right person to talk with about the interaction between society, technology, economy and politics. Firstly, could you give us your general assessment of the Fourth Industrial Revolution upon economy, society and politics?

Ito: One key thing is that we are now struggling with the problems caused by the Third Industrial Revolution. If you think about postwar Japan, for example, we spent a lot of our energy trying to become more efficient and producing more things, really trying to rebuild Japan by increasing production and the economy. Any problem could be solved by working hard and being more efficient, which was well suited to traditional market economics and market systems. But if you look at the primary problems that face us today, such as climate change, income disparity or social polarization in both the economic and political realms, and also health problems — chronic diseases, mental diseases — you will find most of these problems are much more complex than in the past. We cannot solve them with the linear solutions we used in postwar Japan.

One of the interesting things happening with the Fourth Industrial Revolution is that we are starting to see that the Internet has lowered the cost of communication and collaboration and has had a dramatic impact on increasing complexity. It also has given us new kinds of organizations, like Wikipedia or Linux, and enabled political movements like #MeToo and #BlackLivesMatter to organize with very low financial costs. So I think we're in a very new environment with high complexity, complex problems and a new way to organize

production. Professor Yochai Benkler at Harvard has a wonderful paper titled "Coase's Penguin". In it, he explains how the Internet has created a new kind of production that we call "Commons-based Peer Production", like with Linux or Bitcoin or Wikipedia, where people assign their own work and work as volunteers. This doesn't happen inside of a corporate system, it happens in the commons, the public realm.

So we have a new type of production, new problems, and a new way to create organizations. If you add things like AI, we continue to increase complexity while diminishing the cost of doing many things. I think that the biggest impact is that we have to change the way we think about and address society's problems, and I think that if we continue to measure our success with things like GDP and other traditional economic and financial measures, trying to apply the same tools that we have been using for decades, I think we're going to make these problems worse. This is my general assessment.

JS: To be more specific, those new technologies seem to have both positive and negative aspects for the economy and society. Starting from the negative aspects, my second question addresses the risk of alliances between authoritarian states and large data-rich IT monopolies. Would this bring about a corporate surveillance system in addition to a state surveillance system?

Ito: I think the ability to conduct surveillance is clearly becoming easier — and I know you have a question later about General Data Protection Regulation (GDPR) by the European Union — but I think that the surveillance state will obviously increase its surveillance. Since Facebook and Edward Snowden, especially in democratic countries, the concern about surveillance and privacy has become quite high, and many organizations and NGOs are starting to track these data-rich IT companies and surveillance-related activities, even overseas.

For instance, Amnesty International is doing a lot of work to try to understand the use of Western companies and their technology in other countries. The big question for me is China. Citizens there actually mostly support surveillance, and they have some of the best IT around surveillance — and the Chinese are rapidly gaining a tremendous amount of influence. While Europe and the US are struggling with this idea of balancing privacy and IT, China is having a very different conversation, and we can't really tell China what to do — it will decide on its own. Western companies will argue about losing competitiveness due to strictures placed on them by governements, but China anyway has its own companies that are doing a lot of this work. So I think it is a very good question, and it starts to also connect to cyber security and cyber warfare. This is not anything secret, but the Chinese don't have the same segmentation between national intelligence and corporate espionage. They share a lot of information between the different groups, whereas in the US, there is a very strict separation between government and business. The rules of engagement are quite different for the Chinese as well, as is the relationship between military and civilian activities. We need to better understand the Chinese way of thinking from now on.

Impact of the Digitalized Economy on Law

JS: You are also a professor at Harvard Law School. The digitalized economy does seem to have caused some legal questions, and so how do you assess the impact of the digitalized economy upon regulations?

Ito: It was in the mid-1990s, I think, that the Internet was an important moment. There is a famous argument by Lawrence Lessig called the "argument about the law of the horse", where he in essence argued against devising new laws for new technologies because we'd run the risk of having so many rules no one could keep track of them, just as judges in the West once had trouble keeping up with all the laws made regarding horses. I think the argument that the Internet lawyers made was that the Internet made many things fundamentally different: jurisdiction, copyright, many legal ideas were challenged by the Internet. Even in Japan, when the Internet started, a very famous Japanese legal scholar wrote a long essay about why the Internet is illegal and why it cannot happen. But it happened nonetheless, and although it broke a lot of laws, the laws had to change to adapt to the Internet. So, I think that when we consider regulations, and let's take bitcoin as an example, we can try to make things illegal, but if we can't enforce the laws we make, or if they hurt the technology so much that it can't benefit society, many of these technologies will force us to change the law and change the regulations. It has to be an evolutionary relationship between regulation and law and advancement of technology.

Again, Lessig has identified four areas that have to work together when considering the law as it applies to technology: one is law, one is technology, but also one is the market/corporations, and the other one is "norms" — which are society's values. If you take something like self-driving cars, companies want to do one thing, regulators want to do another thing, people want another thing, and the technology is developing regardless of what anyone wants and is also being researched in universities and other places. There is an interesting study that we did at the Media Lab where we surveyed millions of people about self-driving cars, and the conclusion to the question of "Should a self-driving car sacrifice the passenger in order to save more people?" — in other words, if you have to swerve and kill the person in the car to save a group of children, should the car kill the passenger? — was that everyone says the car should kill the passenger to save more lives. But no one wants to

buy that car — even though they think that everyone else should. The point is that when you leave it up to individual choice, people will make a decision that is selfish, but from a regulatory perspective, everyone wants society to be more fair and focused on ethics.

So the discussion and decisions about how regulations get formed has to be a collaboration that is public/private sector and multi-stakeholder. Europe is doing a more government-centric system, so the Germans have an autonomous vehicle directive that they have started. In the US, the government is kind of leaving leadership to the companies building autonomous cars, and so I think regulation is going to be quite different depending on the country. Similarly, many countries with digital currencies are trying different initiatives like financial sandboxes or government experiments, and actually, Japan is quite progressive. I think everyone is looking at each other's regulations to see which ones work the best. But again, in places like China where they have very different attitudes on these topics, the regulations that work will be very different from the US or Japan. We will start to see some centralization, but we will also see very different regulations in different countries, and we will be experimenting quite a bit.

JS: On the question of the EU's General Data Protection Regulation (GDPR), many people seem to be concerned about this regulation being too strict and hindering economic competitiveness. Should there be a balance between privacy and economic competitiveness?

Ito: I agree that there should be a balance, but I think this balance right now is in the wrong direction. There's not enough privacy. I think GDPR is great, it is a good basic law, and it will evolve. My concern around GDPR is that big companies like Google and Facebook and others will be able to adapt to it and to lobby it into something they can work with, while smaller companies will have more difficulty. So my main concern is that it won't be hitting the target that the Europeans originally targeted, but I do think that it will have some economic cost. We need to balance that cost, though, because it is very similar in my view to the environment. We have climate change because we ignored the climate in order to optimize our economic gain. Similarly, I think the political and social cost of lack of privacy is higher than the competitiveness of the companies fighting privacy constraints.

Also, in future I think we will want more privacy, and there is now a competitive advantage for companies that are now designing their systems with privacy-enhancing technology. For example, using new cryptography — like homomorphic cryptography. These kinds of cryptographies are used for encrypting data, and for doing research and doing machine-learning on data that is encrypted. There are some experiments going on. But places that are required to protect data will come up with new technology that is privacy robust and that will be a competitive advantage. The change in the privacy law in the medium term will start to encourage a new kind of technology that wouldn't have been developed if we didn't have these laws.

Impact on Supply Chains

JS: There do seem to be great benefits from the Fourth Industrial Revolution, or this big data or the new technologies that are emerging; one of these is the possible gains for sales and supply chains. How do you value these potential gains?

Ito: I think that a lot of the gains that we see from AI and the Internet are difficult to value from a GDP perspective. Because they are increasing our ability to learn, or increasing the arts, or just increasing happiness, they are difficult to measure. I would first say that many of the gains that we will see are about quality of life rather than economic benefit. Some studies have shown that above a certain amount, more money doesn't make you happier; you have to have other things, like amenities. So I would say that a lot of the value of these technologies is intangible.

When we think about supply chains and payment systems such as blockchain, it may help us address the allocation of capital and also help us to include people in the economy who currently have difficulty being included. If we do this well, we will create a system that may help reduce income disparity and inequality, allowing developing countries to participate more. Trade finance, for example, could benefit greatly from a lot of this work, allowing people to participate more in global trade. I can imagine investing directly into power grids in developing countries, for instance, and being paid directly using digital currency. I can imagine a farmer depositing his grain in a warehouse getting a digital certificate he can then use to borrow money before his grain is sold. So I think it will increase access for individuals at the edge of the network. Again, we will have to fight for this, but I do think it may help reduce the unfair rents by large incumbent monopolies everywhere along the supply chain, from financial systems to logistics and to energy systems like utilities.

So I think there is an opportunity for quite a degree of redistribution of power and wealth. Like the Internet, I think blockchain will destroy many companies through dis-intermediation but in the long run it will benefit society and people. The way I would describe it is, there are companies in a position to extract unfair rents, and these new technologies will help to make pricing at least fairer and more competitive. It has to be tied with regulations, but I think we can help diminish some categories of monopolies.

Role of Education in the Digitalized Economy

JS: What do you think about the role of the education system in the Fourth Industrial Revolution? Education does seem to be very important, but do you have any comments on the Japanese education system in this regard?

Ito: I have never participated directly in the Japanese system except for a few months, so I only have an outside view. However, I think that traditional education, including in Japan, has been about teaching a standardized curriculum to make workers standardized and regular. I think this is valuable when you are trying to make large organizations or factories where you need people to have a predictable set of skills. However, I think that the key thing about the Fourth Industrial Revolution is that with machines, robots, AI, many of the regular skills can be done by machines. I think that the human being's role will be more about creativity, about asking questions, and about being different. Current schools are focused on teaching knowledge and skills, and broadly many of these can be acquired in a lifelong learning way when you need them, rather than trying to get everything done in the educational system. During the period from five-years-old to 22-years-old, we should be focusing on helping people understand ethics, their own passions, learning how to learn, leaning how to elaborate, learning arts. So I think we need to change the education system, which is difficult to do because there is a whole chain of vested interests that goes from companies to universities to schools. So it is quite a political process.

I think that we need to change it fundamentally. If I were to pick one of the hardest but most important things to change — in a way, this is quite radical — it would be just getting rid of traditional education and having more of a project-based learning system where we use computers and communities to teach the core skills but without all the structure — this is where we might eventually evolve to. I think Finland has a system like that.

Balance Between Privacy, Competitiveness & Happiness

JS: Coming back to the question of the right balance between social concerns such as privacy and economic competitiveness, how do you estimate the efforts that have been made so far in achieving the balance between those two?

Ito: I think we have done a very poor job. Most countries are focused on economic competitiveness, and I think that even the idea of focusing on competitiveness is maybe not the right way to think about the world. In evolutionary biology, there is some great research now showing that competition is not the most important component for success in evolution and actually cooperation is more important. Actually, some of the most interesting traits and complexities that we see in nature come from evolution through cooperation. So I think the idea of economic competitiveness may have been an important idea when we were struggling with a lack of abundance, but now we have too much food so we are fat, we have too much convenience so we get out of shape — we have a lot of stuff. We have enough food but it is not well distributed. We have enough food to feed everyone, but people are dying because we are not able to distribute it. Our problems are substantially social concerns and not to do with economic competitiveness.

With Japan, I would be thinking about how do we look after the elderly and how do we increase happiness. The economy needs to be healthy but it does not necessarily have to be growing. The pursuit of growth is important when you are small, but when you are the right size, you can instead try to focus on the social issues. It's like a nice Japanese garden — you don't try to make everything grow, you try to make everything beautiful and flourishing. To me, definitely we should have a healthy economy, but we also should think about different measures of success. My favorite point I make to non-Japanese is that our economy may not be growing, but we have more Michelin stars in Tokyo than Paris. So if you measure Michelin stars as happiness — which I do — we are doing OK. How do we measure our success? I think we need to pivot more to the social side — but I am quite biased!

JS: Do you think that the digitalized economy would archive economic efficiency and happiness at the same time?

Ito: I think we can. I would maybe end by saying that one of my favorite things to think about is Ise Shrine. It has been around for about 2,000 years, and is sustainable, is beautiful and has a very nice balance. It doesn't grow, but it is very active and I think it is wonderful. Ise Shrine is not trying to become more efficient; it is trying to continue its practice. So I think that IT and the new technologies can — if we focus them properly — increase our ability to thrive and increase efficiency, but my concern is that many of our problems today — climate, income disparity and health — are not going to be solved by more money or more efficiency. They have to be solved by a different way of thinking, and I hope that is where we apply a lot of this work. JS

Written with the cooperation of Joel Challender, who is a translator, interpreter, researcher and writer specializing in Japanese disaster preparedness.