Digital Capitalism & Japan

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A Sense of Greater Well-Being

The digitalization of daily life took off in 2014, when 4th-generation smartphones began to be widely adopted. Data clearly show that this caused a significant change in the sense of well-being in the daily lives of the Japanese people.

The "sense of one's standard of living compared to the rest of the Japanese public" as given in the response to the "10,000-Responder Survey on Life in Japan" conducted by the Nomura Research Institute (NRI) every three years shows an increasingly large number of participants giving their standard of living as "upper" or "upper middle" since 2006 *(Chart 1)*.

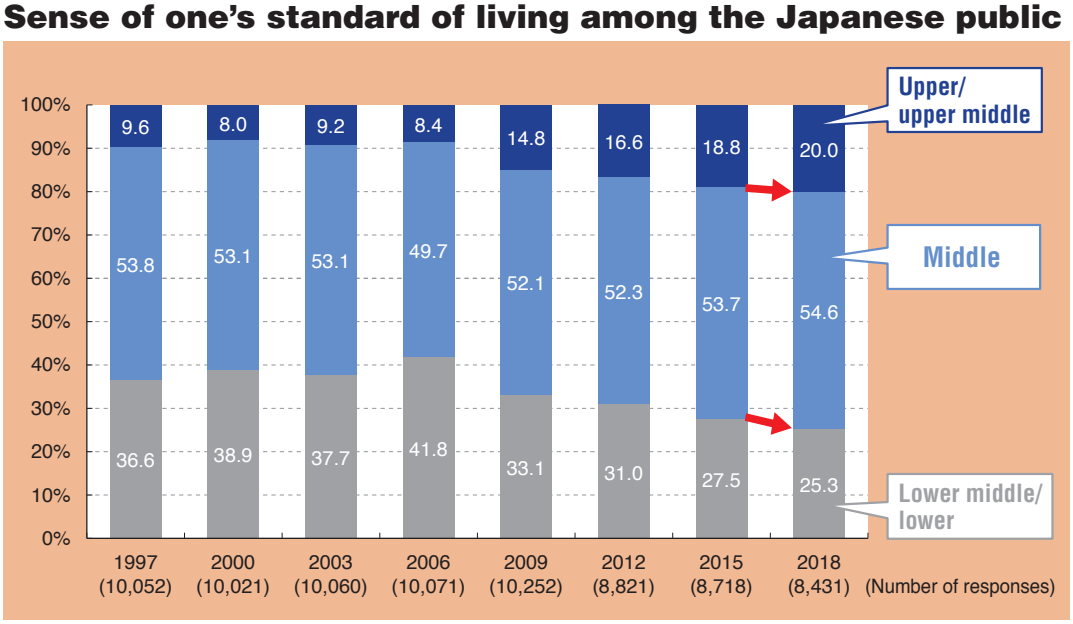
Why has the sense of well-being among the Japanese public grown during this period even as GDP and wage levels stalled, and income disparity is said to have widened in Japan? What the people who responded "upper" or "upper middle" have in common is that they responded that they had "become able to consume wisely by collecting information on daily life and bargains through the Internet and other means". It can be observed quantitatively here that the use of information technology has risen dramatically with the result that the standard of living can be sustained on a higher level even as income has remained stagnant.

GDP figures tell us that the Japanese economy is stalled. At the same time, the people experience well-being in their daily lives. Dig into this a little deeper and we realize that digitalization is providing us with something that does not show up in GDP statistics.

What digitalization has offered is a decline in price levels that was unthinkable before. Consumers can be thorough in comparing prices on the Internet, which puts relentless downward pressure on retail prices even if production costs remain unchanged. Online vendors can interact directly with consumers, eliminating the cut for the middleman. A report published by the Bank of Japan (BOJ) estimates that Internet retail sales could account for a price reduction of approximately 0.3% ("Impact of the Growth in Online Retail Sales", *Bank of Japan Review*, June 2018), but it is possible that price decline is even larger in certain areas. Music and other merchandise

CHART 1

Sense of one's standard of living among the Japanese public



Note: No responses excluded from aggregation
Source: "10,000-Responder Survey on Life in Japan" conducted by the Nomura Research Institute (NRI) (1997-2018)

that can be digitalized can be copied at negligible cost, reducing overall production costs dramatically. Even when a product is functionally unchanged from its analogue days, its price and cost are greatly reduced by digitalization.

Producer Surplus & Consumer Surplus

When someone purchases a merchandise or service, there is a maximum amount that the person is willing to pay for that particular content. This is the "willingness to pay (WTP)". The difference between the WTP and the actual price is the "consumer's surplus". Think of the consumer's surplus as the degree to which consumers can feel that they have made a profit or secured a bargain.

On the other hand, the producer is actually producing its product at a lower cost than the price. It is gaining the difference between the price and cost as the producer's surplus. This is the profit of the producer. Digitalization can influence WTP, price and the cost of things, but it seems price and cost have been lowered even though the WTP has not changed much. This is causing the consumer's surplus to grow and the producer's surplus to shrink.

To go back to the relationship between the impact of digitalization and GDP statistics, the key point is that the producer's surplus is quantified and reflected in GDP statistics but the consumer's surplus, given its subjective nature, is not measured and therefore goes unaccounted for. Thus, we look at GDP statistics without recognizing the consumer's surplus that digitalization has amplified and sense that there is a gap between the economic trends and our impressions from our daily lives.

The sum of the consumer's surplus and producer's surplus is called total surplus, or economic welfare. This overall surplus could be viewed as the value-added in the true sense created by the merchandise or service. Overall surplus consists of the producer's surplus, which can be objectively measured, and the consumer's surplus, which can only be grasped subjectively. Overall surplus is difficult to identify as data. However, subjective matters can be quantified, as the NRI confirmed in its questionnaire survey. In a world where digitalization is progressing, it is becoming difficult to measure value with GDP as the sole indicator. The time is ripe for a new benchmark.

Free Digital Services in Japan

Internet usage is rising rapidly in Japan. According to a survey by the Ministry of Internal Affairs and Communication (MIC), the average Japanese spent 86 minutes per weekend day on the Internet on average in 2013. This figure rose to 120 minutes in 2016 (MIC, *Survey on Time Spent on Information Communication Media and Information Activities 2017*). The numbers vary greatly between age groups. While the 10-19 and 20-29 age groups logged significant time, at 225 and 216 minutes respectively, the 60-69 group only used it for 43 minutes. The information and digital services provided over the Internet are making our daily lives so convenient, and much of this is being provided free of charge.

Erik Brynjolfsson, professor at the MIT Sloan School of Management, and Joo Hee Oh, assistant professor at the Rotterdam School of Management (RSM), Erasmus University, developed a model to express the consumer surplus that these free digital services produce in monetary terms and applied it to the United States (*The Attention Economy: Measuring the Value of Free Goods on the Internet*, 2012). According to this study, value equal to 2.3% of GDP was being produced on average between 2002 and 2011. The same model applied to Japan indicated that consumer surplus from free digital services could be worth up to 90 trillion yen per year, or the equivalent of 17% of GDP between 2012 and 2016. Japan has been gradually slipping from 20th among 63 countries in 2013 to 27th in 2017 in the IMD World Digital Competitiveness Ranking published by the International Institute for Management Development. As the IMD report notes, it is true that Japan lacks human resources in digital technology and Japanese businesses are slow to adopt digital technology. However, as the 90 trillion-yen consumer surplus shows, Japan is at the forefront in the acceptance of digital technology in the daily lives of its people.

The consumer surplus being produced by digital technology explains the paradox of the rising sense of well-being in the face of a stalling GDP. Digital technology is generating a significant increase in consumer surplus, i.e. the unmonetized value.

History of Capitalism

Digitalization is causing significant changes in the daily lives of the Japanese. It is also changing the economic system and capitalism itself, as can be seen from the significant loss in the effectiveness of traditional economic indicators (such as GDP). Let's take a look at the characteristics and history of capitalism.

In this essay, capitalism will be defined as a "system for pursing the permanent accumulation of capital by obtaining profits through

discovering, utilizing, and creating differences". Let's call the first stage of capitalism "commercial capitalism". This will be easy to understand if you imagine a merchant who engages in long-distance trade. The merchant buys merchandise at a low price in one country and sells it at a higher price in another. In other words, this is an activity that finds existing differences in the price system and earns profits from them.

The system following it, created through the 18th-century Industrial Revolution in the United Kingdom, is called "industrial capitalism". The Enclosure Movement turned communally-owned land into private property, chasing out the farmers there, who began selling their labor as if it were merchandise. Capitalists amassed labor, land, and other resources and achieved mass production though massive investments and division of labor. Under industrial capitalism, profits are accumulated by utilizing the difference between labor productivity and wages and creating products that are distinguished from those of competitors through innovation.

Actually, there is no consensus among experts over whether the ongoing digital revolution is creating a new stage in capitalism. There is a wide range of opinions, as some say that capitalism is nearing its end while others say that industrial capitalism is becoming ever more sophisticated. Still others say that a new type of capitalism, one that we haven't seen before, is emerging.

Klaus Schwab, the originator of the World Economic Forum, calls the ongoing digital revolution the Fourth Industrial Revolution, and the German government is promoting what it calls Industry 4.0. As the terms show, these people believe, or hope, that industrial capitalism will be enhanced through progress in digitalization.

By contrast, as Peter Drucker stated, "That knowledge has become the resource, rather than a resource is what makes our society 'post-capitalist'." Dr. Katsuhiko Iwai, emeritus professor of the University of Tokyo, states that the era of post-industrial capitalism has begun and points out that the capitalism at the dawn of the Internet actually has the characteristics of commercial capitalism, the primeval form of capitalism, in that it creates value from differences in information.

The Arrival of Digital Capitalism

This report agrees with Dr. Iwai that capitalism has metamorphosed into a new form, which I will call "digital capitalism". There are several reasons for this. First, those who call the ongoing digital revolution the Fourth Industrial Revolution and Industry 4.0 are the main players of industrial capitalism. The more they are invested in the existing capitalism, the more likely their mindset is unconsciously biased and that they have a vested interest in denying that industrial capitalism is coming to an end.

Next, a comparison of the ongoing process with industrial capitalism shows that value is coming to be created in a

CHART 2

Industrial capitalism & Digital capitalism

	<Industrial Revolution> Manufacturing and transportation revolution	<Digital revolution> Revolution in data collection and analysis
	Industrial capitalism (18-20C)	**Digital capitalism** (21C-)
	"Maximizing producer's profit"	"Maximizing user's subjective utility"
Player	• Industrial capitalist	• Platform provider
Venue for value creation	• Factory/market	• Digital platform
Value pursued	• Maximizing production and profit	• Optimal use/maximizing utility
Source of value	• Labor	• Activity information

Source: NRI

fundamentally different manner. The Industrial Revolution, in short, was a revolution in production and transportation. There, the industrialist was the value creator, and physical factories were the places where the value was created. The value being pursued was quantitative expansion; growth through mass production and consumption was the aim. And labor was an important source of this value.

By contrast, the digital revolution is a revolution in the capacity for data collection and analysis. Here, digital platforms become the venue for value creation. The core value is no longer mass production and consumption, but optimal utilization by or maximizing utility for the user. The sharing economy is the framework that embodies this value and is difficult to conceive under the industrial capitalism framework. The development of car-sharing services increases options for the user, enhancing convenience, but it is likely to reduce the number of cars sold as its share grows. As a result, while the frequency of travel and the market for car-sharing grows, production in the automobile manufacturing sector declines, with a possible negative net impact on GDP. This is the paradox that may arise when GDP, a benchmark of industrial capitalism, is used.

The digital revolution is also creating new sources of value: the information activities that we humans as well as machines are generating. Just as human labor was separated and turned into merchandise in the Industrial Revolution, all information activities by humans and machines are currently being separated from their sources and sucked into platforms to be conglomerated as Big Data, from which value is extracted through analysis *(Chart 2)*.

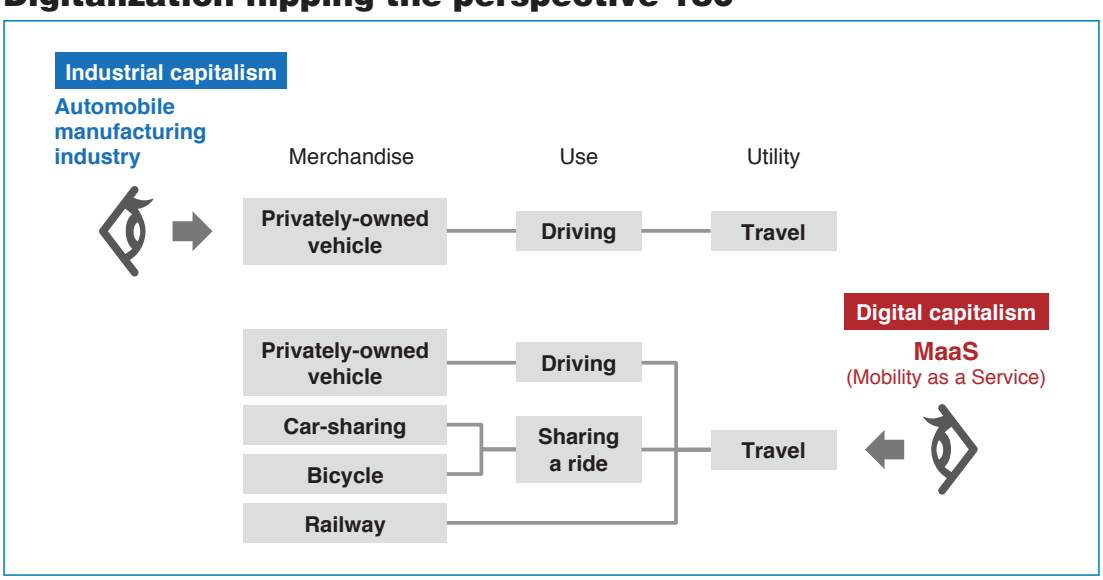
Flipping the Perspective on Industry

"Mobility as a service", or MaaS, has emerged as a concept in transportation. This describes service as a business that provides the optimum means of travel from the user's perspective, a concept that transcends existing industrial categories such as automobile manufacturing and transport. There, whether or not you possess a vehicle is irrelevant. The choice between a taxi, ride-sharing like Uber, or renting a car P2P depends totally on the level of convenience for the user.

Under industrial capitalism, business traced the supply chain in which the producer is the starting point. The producer makes the

CHART 3

Digitalization flipping the perspective 180°



Source: NRI

product by procuring materials and the complex distribution channel leads to consumers at the end. There, the preferences of the individual consumer were given relatively little consideration. The "masses" were supplied with mass-produced merchandise.

By contrast, in digital capitalism, the user is the starting point. The needs and references, the payment capability, indeed every element of each user is analyzed using artificial intelligence (AI), then reverse-engineered to find the optimal solution. Here, there is no such person as a standard-issue member of the "masses", just a wide variety of individuals that are connected by a wide variety of networks so that they are both "I" and "we" in a mandala-like world *(Chart 3)*.

The term "industry" will gradually lose meaning in a world like this. "Industry" is a word used from the perspective of "what is being manufactured", whereas "what kind of utility is being provided to users" is the key perspective in digital capitalism.

From Labor Society to Action Society

The role of humans also changes under digital capitalism. Let's explore this point using the framework provided by Hannah Arendt, one of the most representative philosophers of the 20th century. In her book *The Human Condition*, Arendt divides "active life" into three types of activity: "labor", "work" and "action". She defines labor as repeated processes, work as having a clear beginning and end, and action as the means by which we disclose ourselves to others. She is said to have explained the difference between labor and work as "kitchen and typewriter". The kitchen is where labor takes place and the typewriter is where writing, or work, is conducted.

Arendt goes on to call the industrial capitalism of the 20th century the victory of "animal laborans" and states that among the three categories, the proportion of labor has grown overwhelmingly large. Then what has been the effect of the ongoing digital revolution on the role of humans, or "labor", "work" and "action"? First, labor is coming to be replaced by machines and AI. Human labor is being pushed out of the workplace, much as farmers were pushed off the land by the Enclosure Movement at the dawn of the Industrial Revolution. Meanwhile, action by humans is increasing dramatically under digitalization, albeit in cyberspace and many actions are still done by hiding identity. It covers a wide range of activities using social network services such as posting one's activities and communicating with others on social networking sites as well as posting reviews on Amazon, TripAdvisor, and the like.

Moreover, you are disseminating information on your activities unintentionally such as where you are going through your smartphones and your preferences and interests through your online searches.

Take the YouTuber, an emerging job category. YouTubers are people who make a living with the advertisement revenue from the number of views of the videos that they post on YouTube as their main source of income. They became a hot topic in Japan in 2018, when they came in third in an annual survey of occupations that elementary schoolchildren wanted to take up when they grew up. The content and quality of the actions aside, this is an area that is becoming increasingly active in the digital revolution. An action society is emerging here.

Digital Capitalism & the Role of Japan

Finally, I would like to offer a few perspectives on the role that Japan is playing in the age of digital capitalism. As I stated at the beginning, I believe that the invisible value created by free digital services (consumer's surplus) is extremely large in Japan. Japanese businesses may be very slow to digitalize, but Japanese consumers are highly receptive to digital technology and generally like new services. In other words, Japan may play the global role of testing ground for new digital services. Hosting the 2020 Olympic Games in Tokyo will propel Japan in that direction.

Another major role that Japan is likely to play is as a global showcase for the different ways that digital technology can be used. It is widely believed in the developed countries in Europe and North America that machines and AI threaten to replace humanity, but Japan has a long history of using tools for extension and support of the human being. This is a technological culture that complements humans. Of course, it is not always appropriate to use technology to complement humanity. It will become necessary to use technology selectively for both replacement and support. It is my belief that the ways that digital technology is used in Japan will contribute to the search for that balance. JS

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