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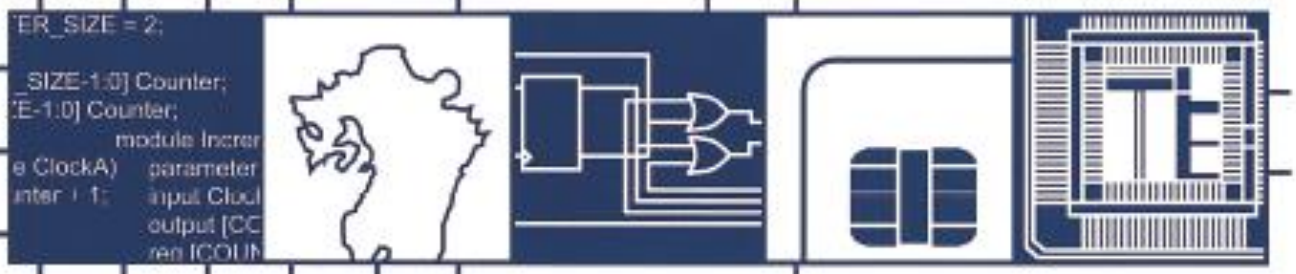

Digital innovation and analog complements:

Making the digital economy prosperous

Akihiko SHINOZAKI

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Akihiko SHINOZAKI[2]

Abstract

This is a proceeding of the first keynote speech at Session 1: G20 and the Digital Economy, for an international joint conference entitled "Global Governance and the Digital Economy: Prospects and Challenges," held in Shanghai on November 29, 2018. Session 1 is designated to explore the broader state of discussions among G20 members and serves as an assessment of the initiatives and plans in the run-up to the Japanese G20 presidency in 2019. For this purpose, the presentation addresses two aspects of digital economy, which are *digital dividends* and *analog complements*. It then considers the critical role of the G20 summit in a prosperous digital economy. Finally, it shares the concept of the Japanese Government's latest strategies—"Grab the Chance by Change with Technology"—to encourage insightful discussions among participants, which will assist in constructing a common framework of digital rules and guidelines as well as reshaping a multilateral partnership toward a promising digital economy.

JEL Classification: O3, O1, F2, F5, F6

Keywords: Digital Economy, Analog Complements, Digital Dividends, Global Partnership

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[1] This paper is a presentation record for an international joint conference entitled "Global Governance and the Digital Economy: Prospects and Challenges," organized by The Shanghai Institute for International Studies and The Friedrich-Ebert-Stiftung, held at Shanghai, PR China on November 29th30th, 2018. A part of the presentation includes analyses from the research project supported by JSPS KAKENHI, Grant Number JP18K01572.

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Global governance and digital economy: Prospects and challenges

Shanghai, PR China, November 29-30, 2018

Session 1: G20 and the Digital Economy

Keynote speech:

Digital innovation and analog complements: Making the digital economy prosperous

Akihiko SHINOZAKI

1. Introduction

Thank you, Ms. Zhang, and good morning. It is a great pleasure to join you today and offer a presentation for the very first session concerning digital economy. As the first speaker, today I will address two aspects of digital economy. The first is *digital dividends*, and the second is *analog complements*.

The first aspect—digital dividends—refers to the broader development benefits gained from using digital technologies. The second—analog complements—refer to aspects of digital economy such as training and education pertaining to human resource development as well as institutional reforms concerning the reshaping of regulations and competition policies pertaining to international corporations.

These analog complements are essential in order to gain optimum benefits from digital technology. Additionally, allow me to share a third topic, the Japanese Government's latest strategy toward digital economy.

2. Facts in the world

2.1. Global views in 1995

To start with, I would like to share world facts by presenting a number of figures that represent dynamic changes in the global community over the past decade. The driving force behind these changes is the rapid spread of information and communication technology (ICT) that shapes digital economy.

Figure 1 clearly demonstrates global views from 1995, approximately a quarter of a century ago. The chart shows the relationship between income level (GDP per capita) on the horizontal axis, and coverage population (percentage of Population) on the vertical axis concerning fixed line telephones (green dots), mobile phones (blue crosses), and the

internet (red triangles). In 1995, more than a hundred years had passed since the invention of practical telephony by Alexander Graham Bell. In the days of Bell, the fixed line telephone was the sole technology in the world.

(Fig. 1)

More importantly, the linear relationship between the GDP per capita and fixed line coverage in 1995 is very clear. It indicates that the higher an individual's income became, the greater access the individual had to technology. This fact points to developed countries having a distinct advantage concerning technology at the time.

2.2. Global views at the millennium change

With the change of the millennium, five years later, mobile telephony started to take off, catching up with fixed line telephones, followed closely by the development of the Internet (Fig. 2). Despite this change, the linear relationship remained, indicating that higher income countries had an advantage concerning technology, with the income of a country showing a direct correlation to their technological advances.

(Fig. 2)

It is for this reason that the international community was afraid of the "digital divide," which could expand the existing gap between developed and developing countries, or the "haves" and "have nots." However, the picture has changed dramatically since the mid-2000s. Please study the next three slides carefully.

2.3. World views since the late 2000s

In 2005, mobile phone development overtook other technologies, and in 2010, the advance of the mobile phone was highlighted more clearly, and the internet followed, overtaking the fixed line telephone. The latest data in 2015 shows that mobile technology had spread all around the world (Fig. 3, 4, and 5).

(Fig. 3) (Fig. 4) (Fig. 5)

This illustrates that these innovations have reached billions of people in just ten years. Human history have never experienced such a rapid spread of brand new technology. These slides illustrated what we have experienced over the past decade. These dynamic changes are still going on, and are even accelerating.

3. Digital dividends

3.1. User-side innovation

Due to this rapid technological development and global expansion, the global community receives vast digital dividends. Digital dividends refer to the benefits from *using* digital technologies, which are *user-side* innovations, rather than producer-side innovations.

As an example, farmers, fishermen, and nomadic traders in rural areas can *use* mobile technology in innovative ways such as obtaining weather information concerning

the best timing for planting, fertilizing, or harvesting, and checking the prices of their products to discover the best marketplace *before* they travel to sell their fish or livestock.

This is but one example of the changes brought about by technology that provide billions of people in developing countries with "*inclusion into the market economy*." One of the typical areas is "*financial inclusion*" brought about by developments like mobile payment such as M-Pesa launched in Kenya in 2007 (Fig. 6).

(Fig. 6).

3.2. Earning opportunities with ICT-enabled new biz

Beside mobile payments, many other ICT-*using* new businesses have emerged, such as crowd sourcing, ride sharing, online vacation rentals, and a wide variety of delivery services. These are known as "ICT-enabled" *user-side* new businesses. The driving force to generate new business is the global spread of the digital platform where AI, Big data, IoT, and many other innovations are systematically accumulating (Fig. 7).

(Fig. 7)

Technological development also offers earning opportunities for billions of people who used to have fewer chances to earn an income, especially those in developing countries and even those in the least developed countries. As a result of these earning opportunities, we can observe an increase in the GDP per capita, or improvement in living standards.

According to a World Bank Report in 2016, a survey in twelve African countries reported that 65% of individuals believe that their family is better off due to *having mobile phones*. These are the facts of *digital dividends* showing that we have to get the most out of technology (Fig. 8).

(Fig. 8)

4. Analog complements

However, this is just one aspect of the digital economy. The other side is of digital economy is *analog complements*, which refer to the challenges we face and have to address to reap the full benefit of technology by maximizing *digital dividends*. When referring to *analog* we have to keep in mind the following three points:

First, technology has spread rapidly, which has increased opportunities and might boost economic growth, as I mentioned before. Second, however, the great spread of technology alone is not enough, since all of these positive impacts have fallen short and is still in the growing process to maximize benefits for all people. Third, to achieve the desired digital economy by gaining the most from technology, we also have to recognize the importance of a wide range of institutional changes, which include the following:

- Reforming regulations to ensure fair competition among businesses.
- Reinforcing education and training to improve skills concerning human resources for development.

- Reshaping the system of international coordination toward a new economy under the revolutionary change.

All of these aspects are far removed from technology itself and quite analog, rather than digital. Nevertheless, these concepts have very close ties to each other and they are critical factors for a successful digital economy. We therefore have to keep in mind that *digital technology* and *analog complements* are two sides of the same coin.

5. Institutional changes

5.1. Regulation

Concerning institutional changes, regulation is the first point. Take a ride-sharing business like Uber for example, which is not allowed in the Japanese market. It is illegal. Can you imagine never using any ride-sharing service at all? There seems to be many complicated reasons behind this, one of which derives from the fact that the traditional taxi business is strongly controlled, or somewhat overregulated. Furthermore, existing taxi drivers are afraid that ride-sharing businesses will be too competitive and render them redundant, meaning that this new business will wipe out their jobs.

Therefore, the traditional offline—or *analog*—taxi business needs to build practical business models, seeking a win-win solution with newer ICT-enabled online ride-sharing businesses. We are still struggling in the process of trial and error efforts for the best solution.

5.2. Education

The second analog complement is education. Tension concerning technology and jobs is a classical and ongoing issue. Technology has surely taken over legacy jobs, resulting in permanent job losses rather than temporary layoffs. On the other hand, new technology puts a premium on certain types of jobs that technology complements rather than replaces.

Unfortunately, however, it is impossible to show an entire list of future jobs line by line, particularly due to the fast changes in digital technology. The solution is continuous upgrading of our skills throughout our careers, like *lifetime education* or *lifelong learning*. Additionally, we should keep in mind that ICT-*enabled* jobs are emerging now and will continue to emerge in the future.

There are still many open questions concerning the best training & education. Nevertheless, we can consider that digital economy requires *creativity*, *teamwork*, and *critical thinking* to enable solutions for the social problem. An important fact is that the traditional education system have been slow to respond to this challenge. Therefore, we have to *move fast* to reform the education system, although we are still in the early stages of trial and error efforts.

5.3. Global partnership and G20

The third and most important analog complement is global partnership, because digital economy provides global digital platforms and generates *leapfrogging* development leveraged by the global spread of knowledge and information. Once knowledge and information have spread around the world, it promotes *borderless mobility* of not only goods and services, but also businesses, capital, and even cross-border movement of human resources.

Since the digital platform is shared globally, it is impossible for small groups like G7 to address all of the global issues, which include digital taxation, privacy protection, intellectual property, AI ethics, big data handling rules, digital openness, algorithm openness, and cyber security, among others. Therefore, we have to seek an alternative approach to global coordination.

I believe G20 could be a great platform to address these challenges, since G20 consists of major emerging and developing countries as well as developed countries, representing a wide range of countries concerning income level and coverage populations of technology (Fig 9). In seeking a prosperous digital economy with a desirable *analog complements*, G20 has an important role to bridge across the global community.

(Fig. 9)

6. Japan's strategy toward digital economy

6.1. Grab the chance by change with technology

Before concluding this presentation, let me to share the Japanese Government's latest strategy, entitled the "Grab the Chance by Change with Technology" released in August of this year (Fig. 10).

(Fig. 10)

It is well known that Japan has been facing "the Quiet Crises." This refers to Japan's diminishing demographic trend and aging society, resulting in sluggish economic growth. In an attempt to turn the crises around, the government has established a new strategy, targeting the decade of the 2030s as a desirable future.

This strategy focuses mainly on *social changes* leveraged by aggressive investment in technology, which is what we call "Grab the Chance by Change with Technology." The concepts of a desirable future in the 2030s consists of 1) inclusion of diverse individuals, 2) connectivity with local communities, and 3) transformation in business practice (Fig. 11). The abbreviation when using the initials of the three concepts is ICT.

(Fig. 11)

6.2. Main message: "MOVE FAST"

What the Japanese government emphasizes the most is "MOVE FAST," which stands for moonshot, opportunity, value, focus, aggressive, super-diversity, and trust (Fig. 12). Hmm, it almost seems like a kind of word game, which is quite good for me to make

a long story short. Whatever, *move fast* to change and drive the society toward desirable digital economy is the main message of this strategy, where both *analog complements* and digital technology are critical elements.

(Fig. 12)

To put it briefly, Japan's strategy depends upon the recognition of the following facts (Fig. 13). Firstly, we have huge potential for digital dividends. Secondly, the driving force behind the chance is, of course, innovation in digital technology. And thirdly, we also need reform concerning analog complements to maximize digital dividends. Let me reiterate: "grab the chance by change with technology."

(Fig. 13)

7. Conclusion

Allow me to wrap-up my presentation with the following. To make digital economy prosperous, we have to walk a fine line between 1) ensuring that the potential advantages of digital technologies are accessible and affordable, and 2) facilitating analog complements—such as regulations—to ensure a favorable business climate, strong human capital, and global partnership with a governance of transparency and accountability.

With all of these factors carried out successfully, we could achieve a maximization of dividends in digital economy. Finally, I would like to mention again that G20 could play an important role to take the initiative in the global community (Fig. 14). Thank you.

(Fig. 14)

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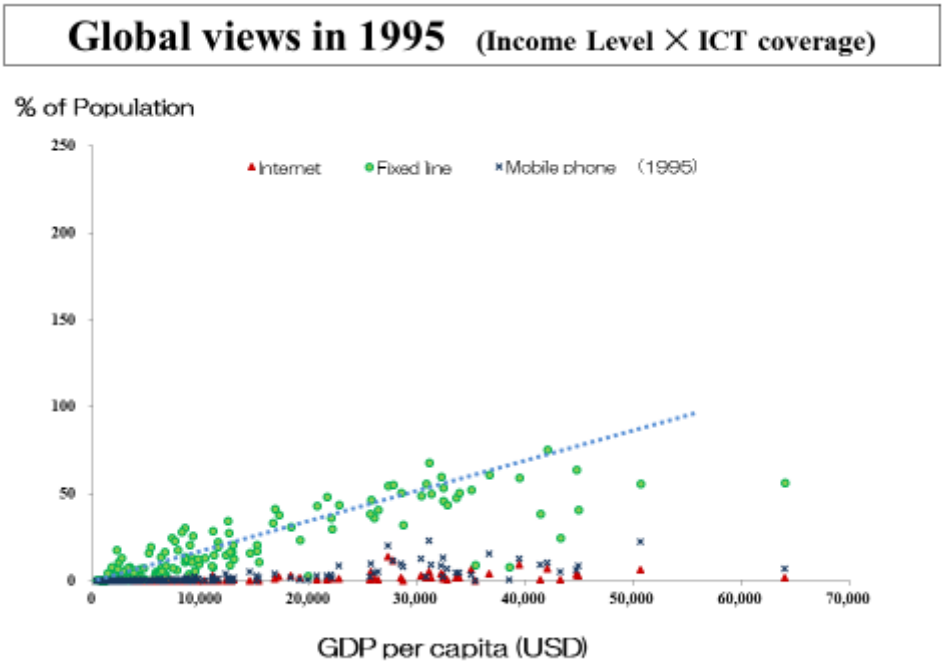
Figures

Figure 1.



(Source) Noguchi, et al. (2018) http://www.icr.co.jp/ICT/index.html#DP

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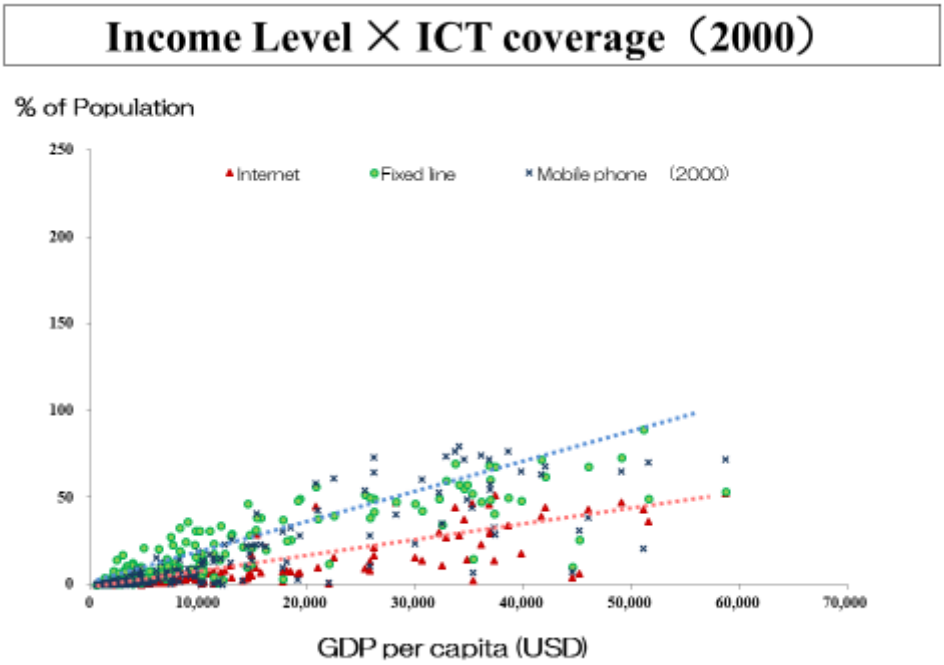

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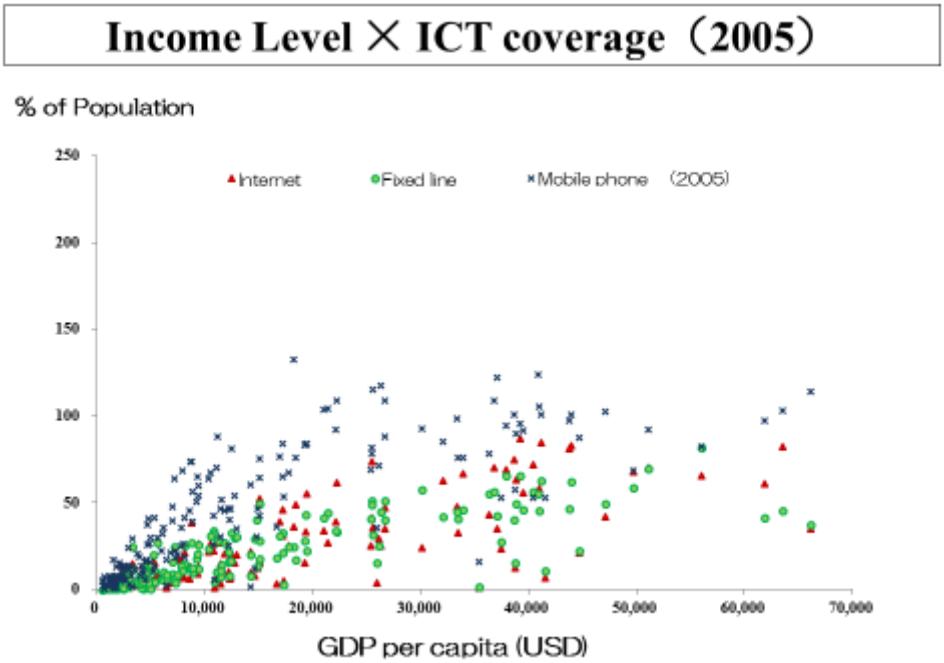

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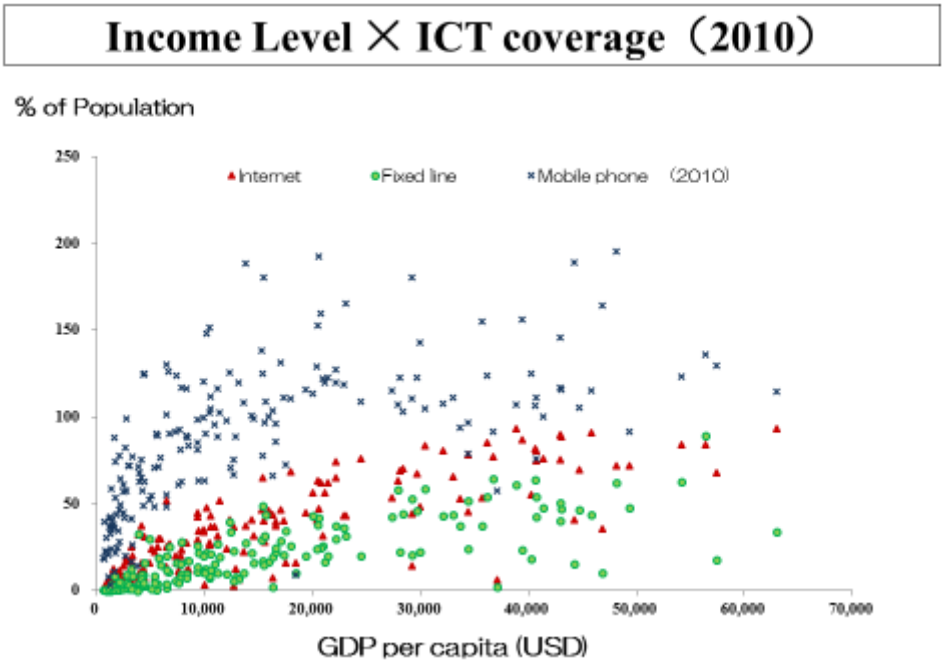

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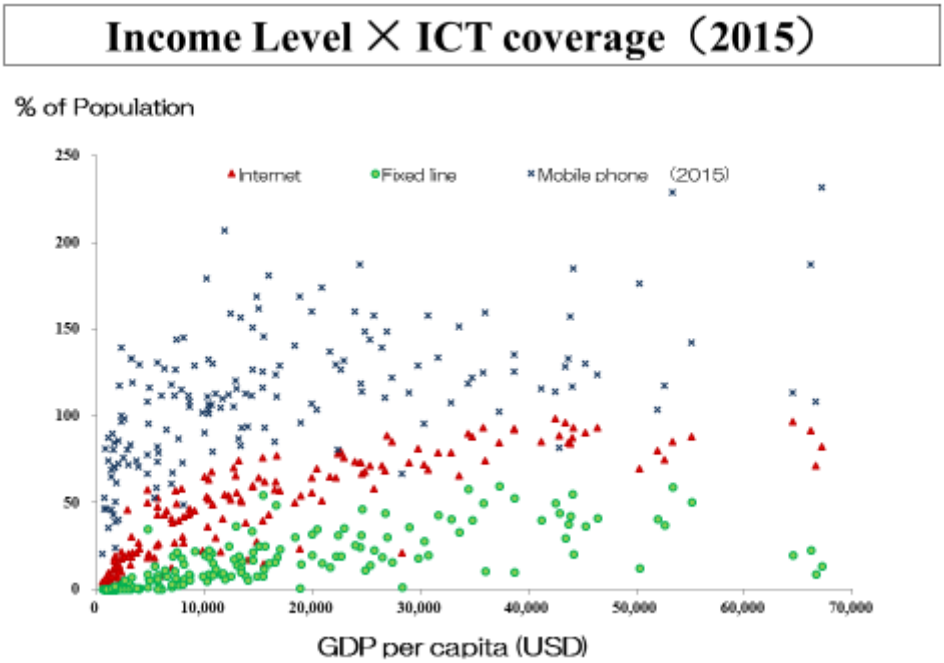

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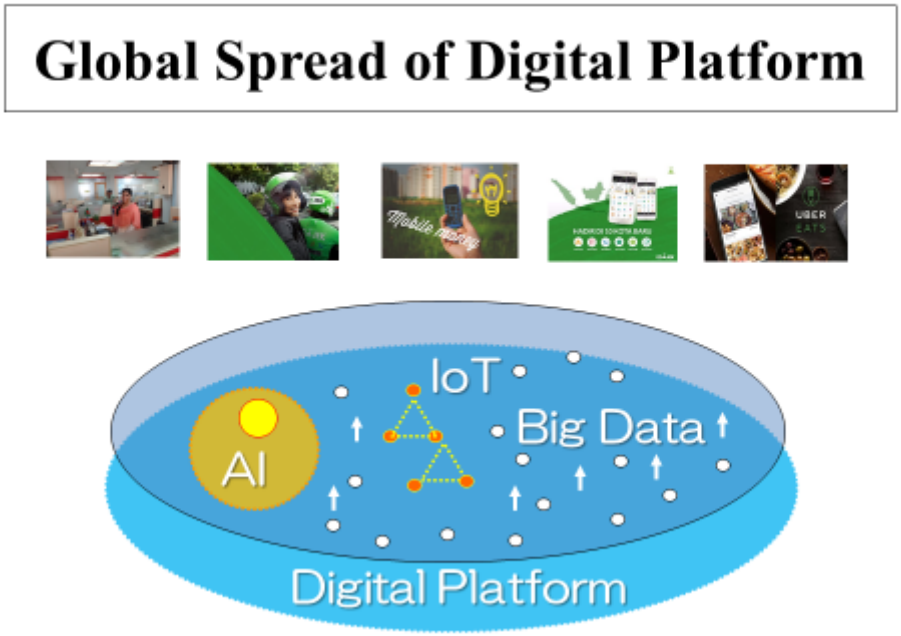

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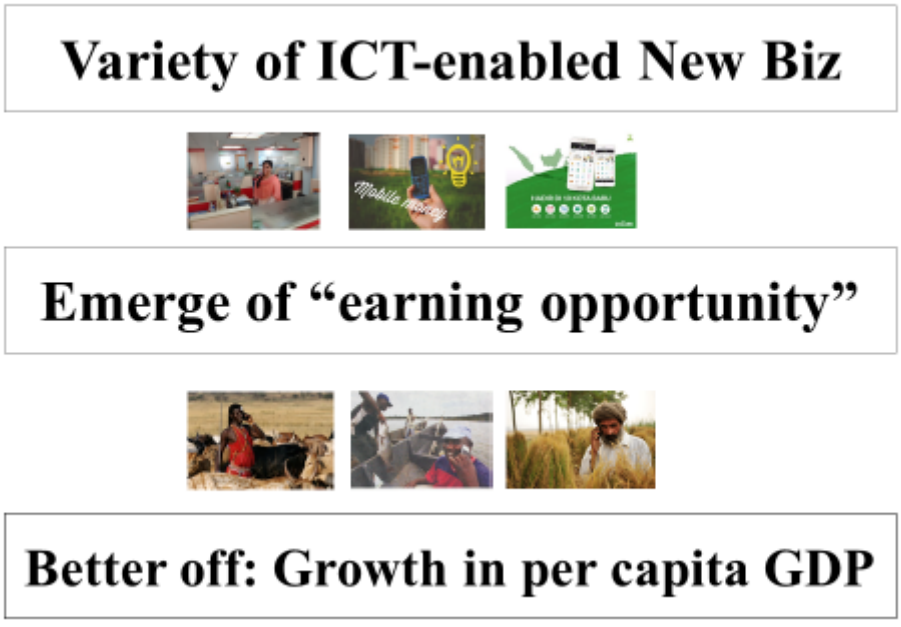

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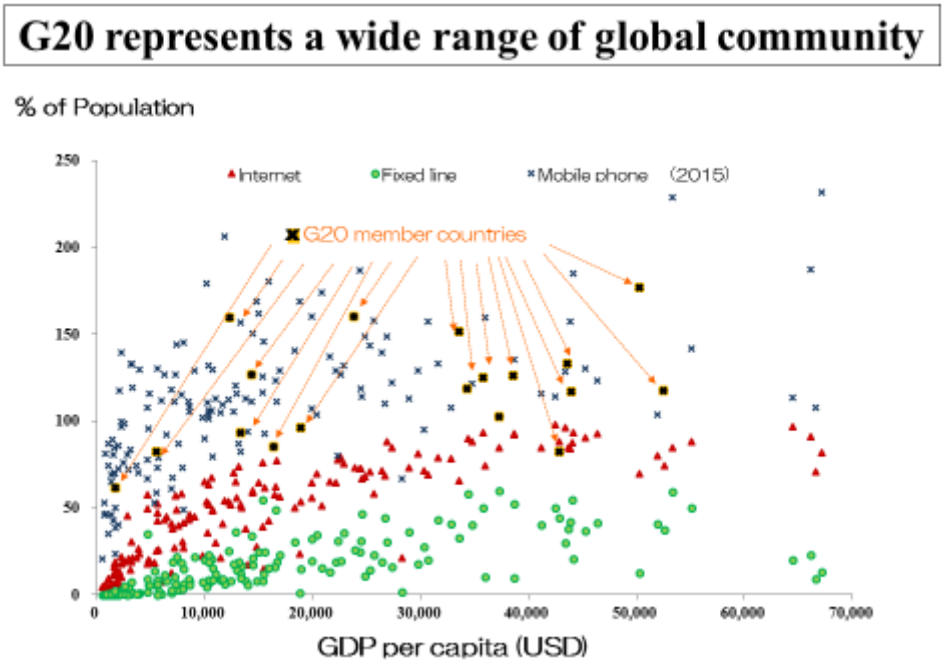

(Source) Noguchi, et al. (2018) http://www.icr.co.jp/ICT/index.html#DP

Figure 10.

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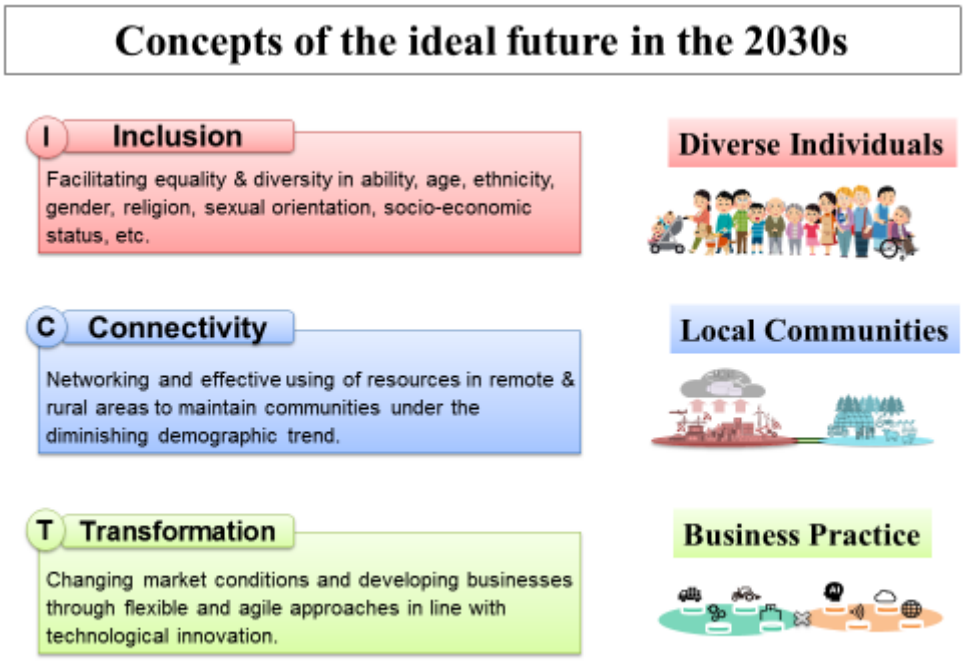
Figure 11.



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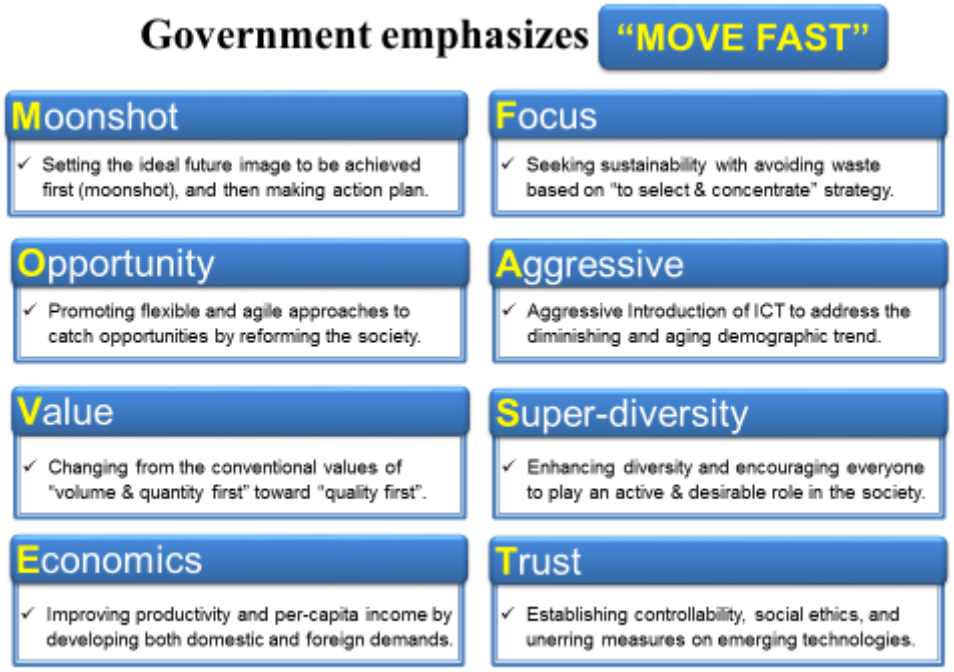
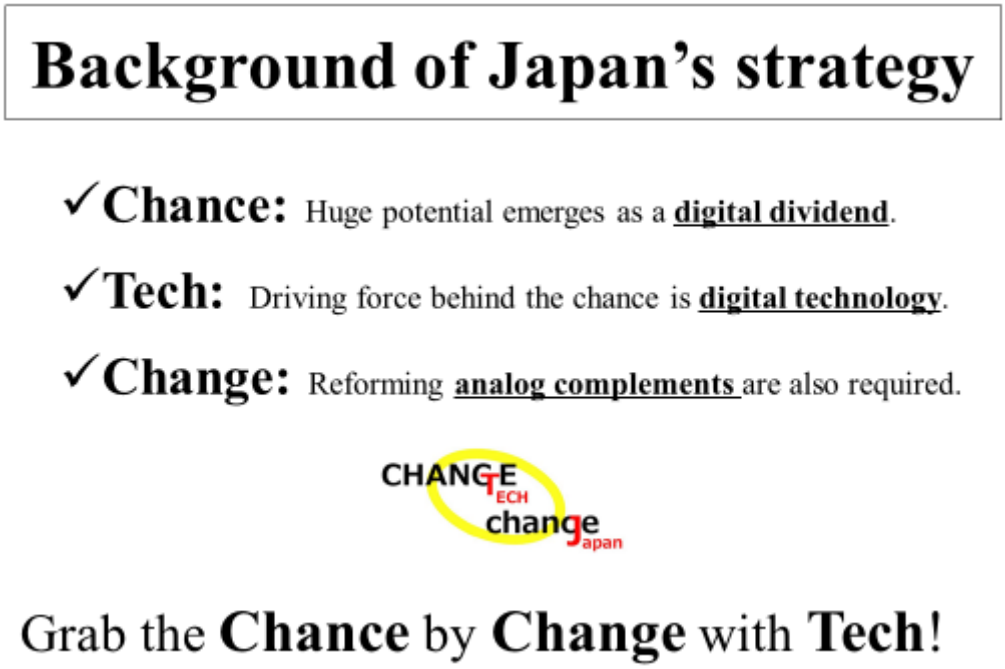


Figure 13.



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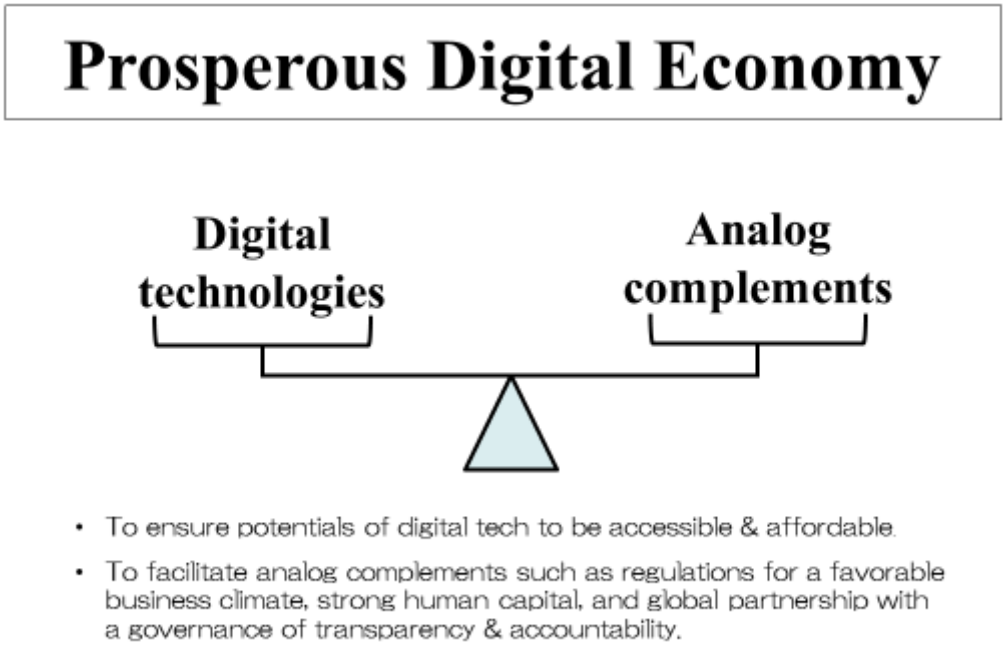

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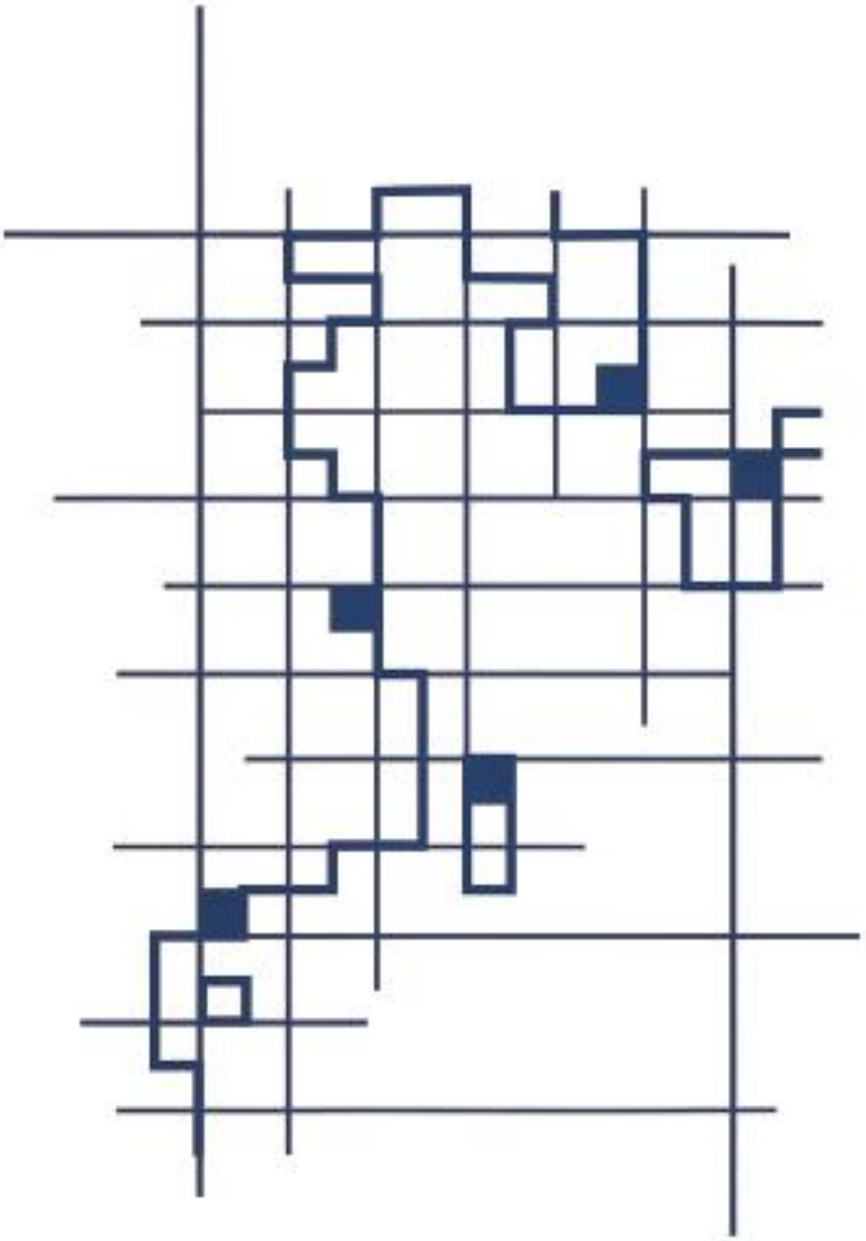

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