

A Study on the Global Competitiveness and Way of Coexistence of Korean ICT Industries

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Abstract

Infinite competition on ICT industries is starting again. The basis of competence over global dominance will be human resource, a global ecosystem for products and national agenda for science and technology, etc.. This paper presents the six solution for the Global Competitiveness and Coexistence of Korean ICT Industries. Korea should nurture the brand of "World Best Korean ICT Forever" to secure technical competency of ICT related fields in global market. All ICT technologies should be aligned to global standard and market demand from beginning and the ecosystem around product needs to be established. System framework for utilizing the resource of core SW experts must be established. Through global partnership with China as manufacturing base for Korea-developed products, technical competency can be maintained including product planning. Security measure for technical assets is mandatory. Finally, core technology that will drive the future of ICT industries in Korea should be regarded as core subjects.

Keywords: *Fintech, Bigdata, Sharing economics, Smart TV, 8K TV, Smartphone, Smart watch, 5G, Global Competitiveness, Coexistence, ICT Industries*

1. INTRODUCTION

Around 1987, electronics shop in US featured more than 200 different televisions from Japan and US companies. By the comparison, TVs from Korea were only 2-3 models from top 1 and 2 Korean companies, which was only 1% in market share. At that time, TVs from Japan dominated the market. If you are looking it now, the situation is completely changed.

TVs made by Korean manufacturers are the number one selling models in last 10 years, and market share in the world is reaching 30%. More positive side of story is Korean TV consolidates #1 position in high-end TV market.

Korea had complete victory over Japan in electronics industries including TV. Also, war on smart devices with US and Finland also showed significant improvement and winning market share. However, the global warfare on ICT will be starting from now.

2. SOFTWARE INFRA SITUATION ANALYSIS

2.1 FINTECH

Mobile payment, which is the major platform for fintech, expects the severe competitions between Samsung, Apple, Google, Alibaba, etc. Platform suggested by each competitor has own advantages from the others, such as non-defective security using virtual account, cardless payment, contactless payment, biometric authorization, NFC, etc. Securing the global dominance in this field will be the key driver for next quantum leap of Korean economy. The next image map was shows the gravity of fintech.

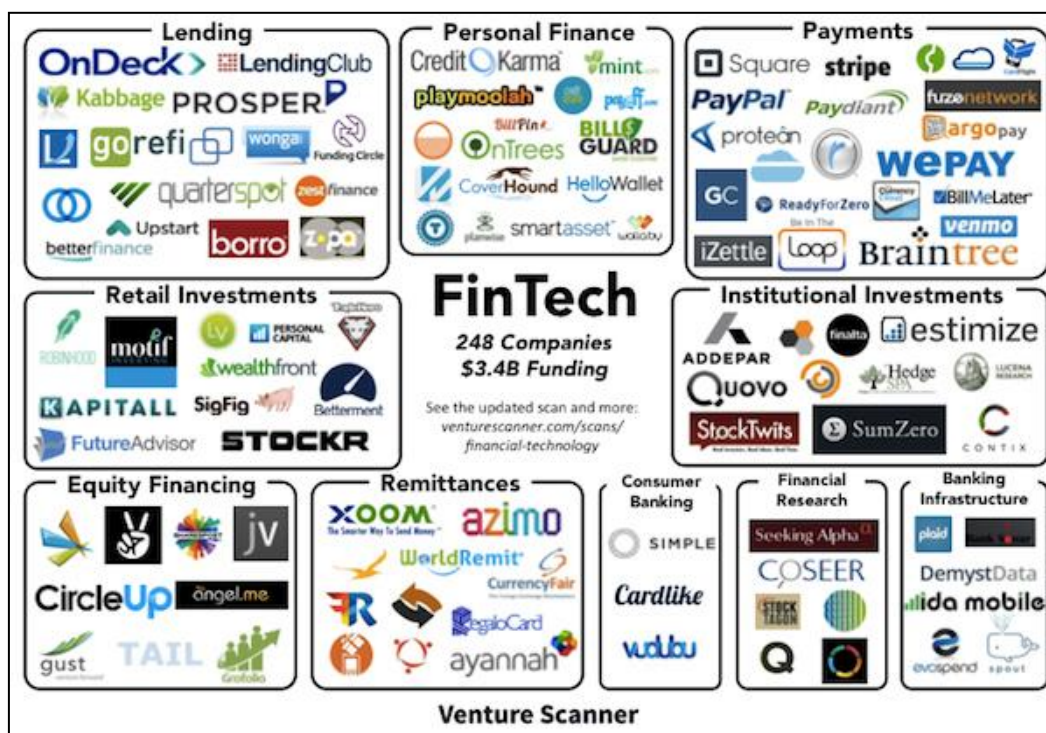


Figure 1. FinTech Industries Reference Map

The above fintech industry reference map was made by Wayne Wong, an analyst with Venture Scanner, who tracks financial technology companies. Wayne has identified 1,012 fintech companies in 17 categories (the above fintech industry reference map is just a partial set). Over \$12.7 billion has been raised by ventures in that sector.[1]

2.2 BIGDATA

Big-data that can re-produce infinite value is also hot potato. Almost all companies and investment firms in Korea and other countries are focusing on the market utilizing big data, which will be the key element of potential economic value in future. Competence in Korea is limited to basic manipulation of big data, but global industries already planned out the actual applications out of data mining on big data.

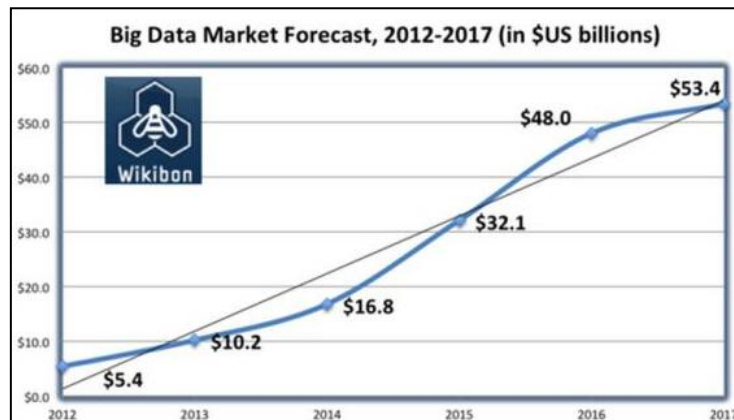


Figure 2. Big Data Market Forecast

Compared to the 2012, big data is expected to grow tenfold in 2017.[2]

2.3 SHARING ECONOMY

ICT business as sharing economy is more like furnace. For example, car sharing and reservation system like KakaoTaxi, Uber, Lyft, Diditache in China, BlablaCar in Europe, and lodging service that shares private space like Airbnb, which expects to provide more than 80 million reservations in 2015, can be the exemplary case that business frontier can create completely different value chain.

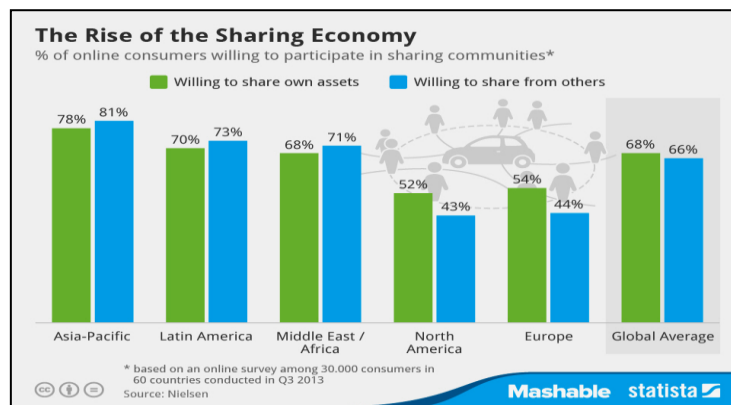


Figure 3. Sharing Economy Outlook

The above chart, based on Nielsen data, shows how accepting people in different parts of the world are of sharing communities. Interestingly, consumers in emerging regions seem to be more open to sharing than those in Europe and North America. However, the overall acceptance of sharing schemes is pretty high.[3]

3. HARDWARE INFRA SITUATION ANALYSIS

3.1 SMART TV

Smart TV, which infused with TV and internet access, can run various applications, and is a truly interactive TV by providing user-based information, such as SNS and game, etc. Now, streaming video service is included

in TV. Regarding to smart TV, Korean products take the 1st place in Chinese market, which is the largest one in the world since 2013.

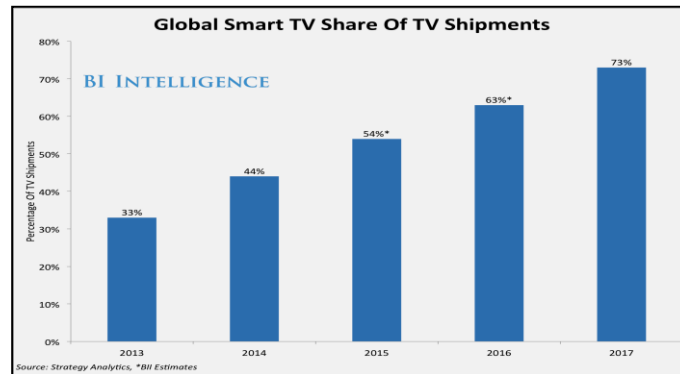


Figure 4. Global Smart TV Share

Figure 4. shows that Smart TVs are on pace to dominate the television market. They will account for 73% of global flat screen TV shipments by 2017, up from just 33% in 2013, according to Strategy Analytics.

In the U.S., BI Intelligence estimates that around 25 million smart TVs will be active in American households by year-end 2016. Additionally, the television replacement cycle is shortening, as declining TV prices accelerate smart TV adoption.[4]

3.2 8K TV

Japan-based electronics company is now preparing to release 8K TV for the first time in the world. In China, 10K display is unveiled even though 8K TV is not commercialized. Technical governance on the next generation TV seems like the war without bullet. Competition on OLED TV, which is now getting traction for the next generation TV, is also quite fierce. For the time being, Korean companies take the first place, but it can be changed in no time .

Super Hi Vision vs Full HD			
	Super Hi Vision / 8K Ultra HD	4K Ultra HD	Full HD
Resolution (pixels)	7680 wide x 4320 high	3,840 wide x 2,160 high	1920 wide x 1080 high
Total pixels	33 million	8 million	2 million
Frame rate	120 frames per second	50 or 60 frames per second	50 or 60 frames per second
Standard viewing distance	0.75 x screen height	3 x screen height	3 x screen height
Standard viewing angle	100°	60°	60°
Audio channels	22.2	5.1	5.1

Figure 5. Comparison of 8K and 4K and Full HD

Figure 5. shows that 8k tv compared to the six elements for 4k tv and full hd tv.

3.3 SMARTPHONE

From 2011 to now, company with top market share in smartphones is also based in Korea. However, competition with Apple is getting stronger, and there is only 2% gap if compared with market share of top 3 smartphone suppliers, which are all located in China. To secure the lead in smartphone market, all kinds of new technologies are developed and applied. Apple is leading with 3D force touch, one of differentiator for user experience. Depending on the amount of pressure applied on screen, different context menu is provided, and can execute specific function accordingly.

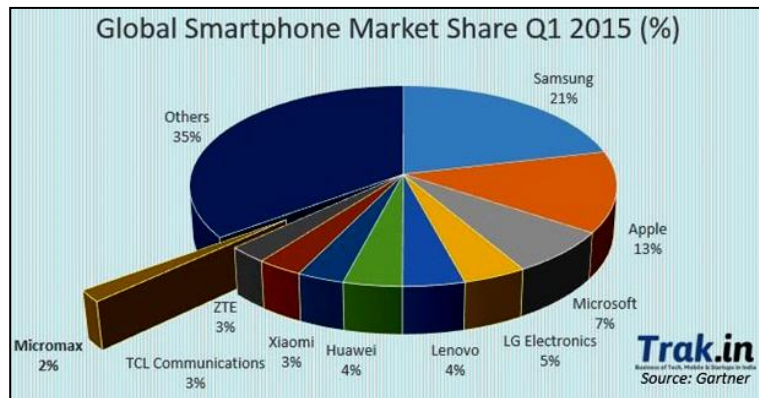


Figure 6. Smart Marker Share

According to a figure 6. report shared by Gartner, Samsung Mobiles has been able to hold its top spot for this quarter as well and has 21.3% of the global smartphone market share. Apple was the second most popular smartphone maker with a market share of 13.1%. The report also pointed out how Apple has managed to reduce the difference in smartphone shipments between its iPhones and Samsung phones by entering new Asian markets. There was a difference of 40 million units in the sales of Samsung phones and iPhones for Q1 2014, but the difference has reduced to 20 million units for Q1 2015.[5]

3.4 SMART WATCH

Continued development on smart watch, which integrates health and fitness feature with simple fintech, will be the next battlefield for electronics companies in the world. Korean product had been secured the first place, but since the launch of new product from Apple, the market share is changed.

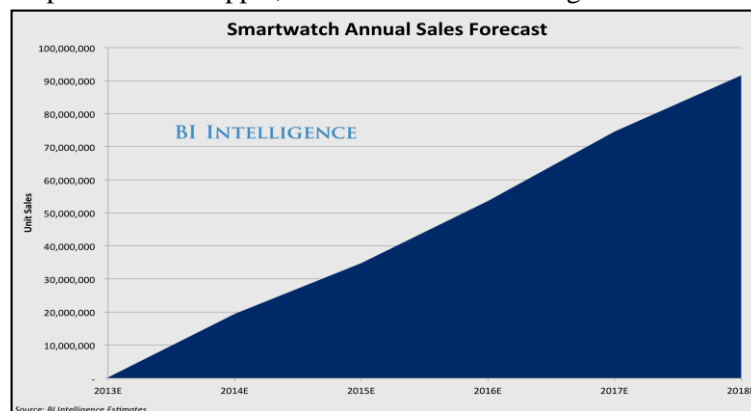


Figure 7. Smartwatch Sales Forecast

The above graphic forecast 91.6 million smartwatch units sold globally in 2018. With an average selling price of about \$100, that translates to a \$9.2 billion market by 2018. A mass-market smart watch would be the first new mobile device since the smartphone to upgrade or enhance a ubiquitous consumer product.[6]

3.5 5G INTELLIGENT NETWORK

Network framework that is the basis of previously described technologies is also reinvented to 5G intelligent network, which connects human and IoT seamlessly. Next-generation network system should feature better security, traffic control, and connectivity, etc. It would be the key infrastructure for cloud service, big data, 8K high-resolution TV, IoT, etc. Attempts to commercialization have been done throughout the world to seize market entry opportunity.

5G provide more requirements, i.e. higher peak data rate, more capacity, better cost efficiency, above all the new buzzword Internet of Things (IoT) provides new challenges to be addressed. It is anticipated that millions of devices will “talk” to each other, including machine to machine (M2M), vehicle-to-vehicle (V2V) or more general x-2-y use cases.

This will impose different requirements than those currently addressed by 4G systems, which were optimized to provide mobile broadband data access. But not only the number of devices is critical, high reliability, very long battery lifetimes (years instead of days) and very low response times (latency) call for another “G” in the future. Reduction of power consumption in cellular networks is another important requirement.

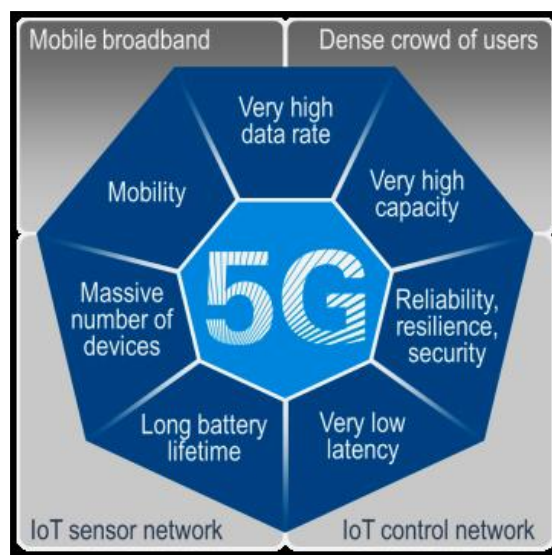


Figure 8. 5G Fundamentals

This is particularly challenging since capacity and peak data rates need to be increased at the same time.[7]

4. PROPOSALS FOR GLOBAL COMPETITIVENESS AND WAY OF COEXISTENCE

From now on, to secure technical competency of ICT related fields in global market.

Firstly, Korea should nurture the brand of “World Best Korean ICT Forever”

Secondly, all ICT technologies should be aligned to global standard and market demand from beginning, and the ecosystem around product needs to be established.

Thirdly, System framework for utilizing the resource of core SW experts must be established.

Fourthly, Through global partnership with China as manufacturing base for Korea-developed products, technical competency can be maintained including product planning. Security measure for technical assets is mandatory.

Fifthly, core technology that will drive the future of ICT industries in Korea should be regarded as core subjects. ICT in Korea would be the future of world and center of technical developments.

5. CONCLUSION

Alipay from Alibaba is now available at Coex, which is one of the largest exhibition and trade showcase in Korea. Chinese electronic devices, which have good functional features with low price, are getting better attentions of young people in Korea.

Now infinite competition on ICT industries is starting again. The basis of competence over global dominance will be human resource. One Korean high school student, who achieved the perfect score of 600 points, which is unprecedented score, had a difficulty to enter Seoul National University even though the one received scholarship offer from MIT. This is the one of nonsense from unique entrance qualification guideline in Korea.

Therefore, this paper presents the six solution for the Global Competitiveness and Way of Coexistence of Korean ICT Industries. Korea should nurture the brand of “World Best Korean ICT Forever” to secure technical competency of ICT related fields in global market. All ICT technologies should be aligned to global standard and market demand from beginning and the ecosystem around product needs to be established. System framework for utilizing the resource of core sw experts must be established. Through global partnership with China as manufacturing base for Korea-developed products, technical competency can be maintained including product planning. Security measure for technical assets is mandatory. Finally, core technology that will drive the future of ICT industries in Korea should be regarded as core subjects. ICT in Korea would be the future of world and center of technical developments.

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