



**NATIONAL PRODUCTIVITY ORGANIZATION
LIAISON OFFICE APO, JAPAN**

BRIEF REPORT ON PRODUCTIVITY TALK ON
HOW VR/AR TECHNOLOGY CAN CREATE OPPORTUNITIES FOR
ENTREPRENEURS AND SMES

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Expert: Mr. Dillion Seo, Co-founder of Oculus, Country Manager of DTCP (Deutsche Telekom Capital Partner), South Korea

Presentation/ Discussions by Mr. Dillion Seo

Purpose of the session was to try foreseeing that how AR/VR (Augmented Reality / Virtual Reality) can reshape the business and how Covid-19 is impacting this technology.

To understand the topic Asian Productivity Organization (APO) Japan invited Mr. Dillion Seo, Co-founder of Oculus, Country Manager of DTCP (Deutsche Telekom Capital Partner), a most famous company on VR, which manages assets of USD 1.7 billion and is looking for promising start ups.

Q 1: What was your experience at Oculus?

Answer: Oculus was very small VR startup, founded in 2012 at California. The company's first consumer product was Oculus Rift (VR headset) introduced in 2016. It was acquired by Facebook in 2014 for USD2.3 billion. During this time, my roles at Oculus include:

- Content Sourcing
- Component Sourcing
- Manufacturing partnerships

Korea was focused on PC development and had best display companies such as Samsung & LG. Oculus needed hardware manufacturing companies' partnership and was looking for high quality consumer products and high quality manufacturing products, and Korea has Samsung electronics and LG electronics. So, Korea was very important for Oculus in the beginning.

Q 2: Why did you leave the Oculus?

Answer: It was a great team to work with. At that time, I was focusing on content, and creating the attractive VR content is the next big thing. Consumers only want hardware to play with. Creating content was adding value to the products and company.

Q 3: What kind of VR content did you try to create?

Answer: We tried to create human soulmate based on the idea from movie “her”, released in 2013. We thought it was interesting to create a physical presence on the base of voice only technology.

Q 4: Did you succeed in developing an AI based VR soulmates?

Answer: We actually miserably failed. Visualization of a female character was not a difficult part but creating and compelling direct experience was not easy. Main issues in AR/VR technology are:

- VR consumer market penetration was very low
- Continuous development and making it profitable was very challenging
- VR consumer market is very small

Q 5: What was the biggest challenge in the VR consumer market?

Answer: There are three main challenges that VR Market cannot grow:

1. Prices were too high
2. Compelling content was not available
3. Public interest and awareness were lacking

In 2016, device price was USD 599 to 799. Moreover, it require very expensive and high performing PC to play the content. Price of recommended PC was over the USD 1000 to 2000. So, the total price for kit was from USD 2000 to 3000. This was very expensive for target audience, aged between 15-30.

It was very new experience for developers and consumers as well. Creating compelling content for most of consumers was not easy. This is very true for any new device coming into market today.

Final challenge is to increase public demand for VR technologies. We are used to see the content through a smart size window like tablet, pc, smart phone etc. VR is however very different and uses VR headset.

Q 6: Does VR/ AR technologies have any future?

Answer: In 2019, new device is developed which doesn't need to be connected with expensive PC. The price is much cheaper. You only have to pay USD 299 to enjoy the VR experience. Better content design now offer more attractive user experience. Games like “Beach Saver” did very good job in capturing the VR audience. Gained 20 million US \$ revenue.

Due to covid-19 and social distancing, many companies and institutions are looking to invest in VR/AR technologies. VR is now being tested as a tool to create class room area. It allows the students and teachers to join virtual class room. Companies are thinking about new meeting room model based on AR/VR.

Ford Gravity sketch through VR: Automakers are building clay models to approximate the things because 3D model build in computer cannot depict the things in real life.

All the big corporations are taking VR as next virtual meeting room. An American company name Spatial's AR platform is now working with companies like Facebook are providing meeting room for companies as Covid-19 is posing companies to work from home.

Before Covid-19, AR/VR was taken as instant technology of future. Now people recognize the technology that needs to be utilized. SK Telecom the largest telecom company in Korea claims that usage of AR/VR content increased by 41.7% in market in March 2020 compared to its usage in January 2020. Another company is Korea claims usage of its AR/VR technology increased by 71% in March as compared to usage in January.

Beauty of VR / AR is that you have full control of time and space. Although market is not big enough to make profit, but Covid-19 is driving the adaptation of new technology. All the world is working on development of 5G network. AR/VR technology will be benefited with development of 5G network.

The interest in AR/VR technology is not a short-term fad. The world is not sure how long this pandemic will last. So it is the only force for enterprise to adopt and minimize its productivity problems caused by Covid-19. VR/AR has great potential. I believe this will open up new opportunities we never had before, interesting ideas which we never had in market before. VR/AR is a tech which will break the limitation of time and space. SME's can think that how this time and space benefit can solve the productivity and cost deficiency problem, and will help them in winning business ideas.

Covid-19 is accelerating VR/AR technology adoption in a range of fields. VR/AR devices are now readily available; now we need major content providers.

Q 7: Are Zoom, Skype, MS team enough? How AR/VR technology can make a difference?

Answer: Video conference has limitations, it only share voice. As an example, I shared earlier is clay model of car, where you can visualize the model and share individual opinion. So when you need to look at certain aspect together, then it helps. Right now I am in Korea and Zoom is solving this time and space issue a little bit but if expanding a worst go beyond just exchange information beyond your voice I think the idea has much greater potential than a simple video conferencing.

Q 8: The Covid-19 Pandemic from the investor's view point.

Answer: As Covid-19 situation is getting worst in North America and Europe. The impact is getting bigger. All businesses are getting effected by Covid-19. The companies investing in these countries are not able to operate properly. It is creating a lot of uncertainties in global economy and investment, and forcing the companies to come up with counter measures.

Q 9: Which counter measures we need now?

Answer: Companies are localizing production lines. More technologies and automation are being adopted. All companies should be prepared for a crisis and deploy countermeasures with agility. Huawei is looking for Google independence.

Global supply chains can break down without warning, so companies and governments must be prepared. When the global supply chains are broken, domestic alternatives are vital. Covid-19 forced border closing, affecting the production of major companies. High- tech manufacturers looking to be more self-sufficient will accelerate investment in smart manufacturing. FDI reductions will call for countermeasures by the governments and companies.

Q 10: There is no guarantee that Pandemic will not occur again, so what will be the strategy?

Answer: Supply chains will become more domesticated and production lines be more automated dependency on foreign labor force will drop and knowledge transfer with other countries will be limited because the foreign investment amount will be decreased in other words ODM and OEM request may drop with the adaptation of smart factory technologies. All these statements are just predictions. It may not come true very quickly but I believe they're not possible either. Covid-19 can be a trigger to accelerate this change.

For policy makers, they should start investing in Education more to raise more skilled workers locally. Also start making more starter friendly policies where startups can test various business models and services.

Startups will create more jobs and contribute to the domestic economic growth. Creating more investment friendly environment in country will attract more foreign capital because it will create more earning potential.

Q 11: The economic down turn and recession is actually coming and some people even jokingly say that we might die of Covid-19 or because of economic so even though it also true that many startups and SMEs actually going out of business still we would like to see that there is a silver lining as an investor and also at the corner. What are opportunities for future?

Answer: If we look at industrial revolution or talk about fourth industrial revolution, every time we have this industrial revolution taking place, two biggest questions they want to solve our productivity questions and cost efficiency question. A return to our old normal is unlikely for two reasons: productivity and cost efficiency. We can define our first, second and third industrial revolution by defining what technology and what energy source have increased productivity and cost efficiency. So, this pandemic situation will force these companies to come up with different solutions to increase the productivity and cost efficiency. Companies have already recognized the productivity and efficiency gains of digital transformation. The companies will be utilizing their findings that there are much efficient ways to produce finished goods or reduce the amount of money and time spent on production. Companies will learn the lessons and will prepare themselves with new pandemic situations that may happen in next 5 to 10 years and will become more stable.

Q 12: Some companies are declining and some are rising up drastically like IT companies. What is your advice for SMEs and startups?

Answer: It is not going to be easy for SMEs to continue doing what they were focusing before. Because companies will start localizing. They will have less dependency on foreign investment. Most of global giants who are trying to enter into Korean market have failed because local companies are doing far better job. For example, Amazon is doing good in the world while Coupang in Korea is doing much better job in Korea as compared to Amazon. Similarly, AhnLab is doing good in Korea as compared to other Anti-Virus softwares. My idea is to take inspiration from global business models, localize them and launch new startups.