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INNOVATION IN TECHNOLOGICAL START-UPS:

KOREAN START-UP ECOSYSTEM

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ABSTRACT

Nowadays, South Korea has proven to be one of the most rapidly advanced technological countries due to its high percentage of economic output devoted to R&D, innovation, technology improvements and great network of all these institutions for cooperation. Korea calls for a more robust ecosystem led by smaller firms have also been rising. Korea's technology and startup ecosystems are becoming Asia's leading startup hub just after a half a century being at par economy with Ghana's.

The paper will start by providing a profound research on the startup definition and its origins. Later we will explain why South Korea has one of the World's most extraordinary social and economic development history rising from the very bottom to the top of international rankings.

The aim of this paper is to analyze the Korean pro-business government approach for technological innovation.

In order to obtain this analysis we will have to analyze the startup ecosystem of the country. Education system, R&D, patents, investors, accelerators, incubators and networking events create unique experience within the startup ecosystem.

We will analyze if all these is actual situation from the founders of the startups side conducting interviews and analyzing the outcome.

To sum up we will provide a conclusion regarding the relevance of the Korean market as one of the most up-to-date for startups and suggestion for improvement of the efficiency.

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1 INTRODUCTION

1.1 Importance of startups

Having a high successful startups rate could be very beneficial to economy of every country. Nowadays governments are relying on disruptive innovation, globalization of services and products, creative economies or internet of things to achieve economic growth (Northcliffe Electronic Publishing 2011).

Years ago factors such as the high cost of getting the first customer, long technology development cycles, low entrepreneurs involvement due to uncertainty of startups and underdeveloped venture capital industry were not adding faith in this industry. (Blank 2013)

We are observing significant reliance on technology startups in order create innovation economy. Therefore, economy will take a completely different drive and the change will come from the new technological ventures. The importance of startups comes from the required change of landscape for the new fully techy lifestyle that we are experiencing every day. Now the infrastructure allows new products and services to be delivered to the customers in quicker and cheaper manner. Today, services such as *Dropbox* let you save data you want in a cloud for free, *Skype* allows you to communicate with people on the other side of the globe or thanks to *Spotify* your favorite music is available to listen online, all for free.

1.2 Technological innovation

We have huge an innovation environment that is becoming a more and more important part of our everyday lives and our society. We have entered a new economical era that could possibly emit the “fordism” that has been taking place. Automated routine work will be done by robots. So, what are the people going to do? In addition, plenty of conventional jobs are getting obsolete (e.g. automated teller machine in the banks, self-checkout machine in the supermarkets, etc.). Maybe some people find this as a problem but we could clearly state that this is an opportunity to think of all untapped creativity and wisdom for innovation. Most people are building products that are going to fail. There is a massive problem to be solved and we have to focus on how the innovative entrepreneurial work going to be carried out.

The logic behind the innovation is very simple; if we are not changing the way of creation of services and products, we are always on the edge of the risk that someone else would do it before us and take a market share. Survivors will be those capable of maintaining a regular change. (Eric Ries 2013)

On the other hand innovation is strongly related to growth. William Baumol has assured: “virtually all of the economic growth that has occurred since the eighteenth century ultimately attributable to innovation”. The relation between innovation and entrepreneurship relies on skills to find new ways of tracking opportunities which is the center of the innovation process (Bessant and Tidd, 2007: 5)

Nowadays, innovation in the technological sector is becoming more and more popular. The way of delivering services is completely new. In 2015, Uber is the world’s largest taxi company and it owns no vehicles, Facebook is the world's most popular media owner and creates no content, Alibaba is the most valuable retailer who has no inventory, and Airbnb is the world's largest accommodation provider and owns no real estate. (Twitter, 2014)

“Companies that do not invest in innovation put their future at risk. Their business is unlikely to prosper, and they are unlikely to be able to compete if they do not seek innovative solutions to emerging problems.” (Australian Government website, 2006)

Innovation arises in many forms and encompasses many different processes (Hansen, 1991). The understanding of innovation process which has been shaped largely by scientists, such as Joseph Schumpeter, John Kenneth Galbraith, and Alfred Chandler, was based on the assumption that the main reason for such a process was large enterprises. The dynamic and positive roles of small and medium-sized enterprises (SMEs) are a significant factor in building competitive economies in a global market. Thus, extensive literature has addressed the importance of SMEs in innovation (Leeet al., 2010; Acs and Audretsch, 1990).

Vaona and Pianta suggest that product innovations are the outcome of a search for technological competitiveness as for example the strategy of market expansion and patenting activity. Furthermore, process innovation is suggested to emerge from a strategy of active price competitiveness dominated by a search for efficiency. Therefore, this is the reason why startups count more on innovative dynamics when it comes to

product innovations, and they critically depend on greater production flexibility in terms of process innovations.

Vast amount of works has reinforced the relationship between innovation and SMEs based on the market concentration and the knowledge-based environment in which firms operate. SMEs are more innovative in competitive markets, whereas large firms perform better in monopolistic markets and concentrated industries with high entry barriers). Rothwell and Dodgson (1994) argue that the role of SMEs is more significant where niche markets exist and entry costs are lower. (Karlsson, Johansson, and Stough, 2013: 290). Moreover, startups take more advantage of the networking knowledge for innovation and all the benefits that arise from R&D centers conglomerates and universities.

Given all the previous findings, we could deduct the importance of innovation in technological startups and all the SME area. In addition, government of every country tries to implement such policies in order to promote technological innovation which at its end will enhance the economic performance of the country.

1.2.1 Connection between startups and technology

The first fundamental linkage between technology and startup ideas is “*the rapid change in one area uncovers big, soluble problems in other areas.*” The second connection is that startups come up with new ways of doing things and that translates straightforward to innovation in technology. Now we know that a startup is not a small company that takes on a hard technical problem. In technology, companies that grow slowly tend not to grow as big.

Schumpeter believed that innovation would be pushed forward by established firms, possessed of sufficient economic power to take the risks of introducing new technologies. There are two clear connections that we observe between business and technology. The first one is that the rapid innovation uncovers new opportunities to be explored even though this technology has not even been developed. The second one is the way of performing things or uncovering new way of interaction with the resources available.

Business by SMEs would not be able to innovate due to its own inefficiencies and also its deficit of resources and knowledge assets necessary to create and promote ideas (Acs and Audretsch,2005). However, this conventional understanding of innovation has been

challenged by the *Entrepreneurship Theory*. The new approach suggests that entrepreneurial SMEs, as well as large established enterprises, play an important role in innovation (Lee et al., 2010).

Joseph Schumpeter (1942): old Joseph Schumpeter was right stating that big companies having enough resources and capital to invest in R&D are the main actors who drive into innovation. However, young Joseph Schumpeter discussed that the innovation and technological change of a nation comes from the entrepreneurs. From here we could follow and induce that innovation leads to a concentration and market power of new dynamic firms.

Startups play crucial role in improving economic performance while at the same time contributes to its developments by innovating technology and strengthening the capacity of a given country. (Schumpeter, 1942)

We have to understand the growth in order to understand startups. And here is the reason again why startups focus on technology “Growth is why startups usually work on technology—because ideas for fast growing companies are so rare that the best way to find new ones is to discover those recently made viable by change, and technology is the best source of rapid change” (Paul Graham)

2 WHAT IS A STARTUP?

Richard Feynman said that the imagination of nature was greater than the imagination of man, he meant that if you just keep following the truth you'll discover mesmerizing things than you could ever have made up. For startups, growth is a constraint much like truth. Every successful startup is at least partly a product of the imagination of growth.”

When I started this research I found out that there is no official definition of what a startup is and there have been different opinions on it. Even one of the emblematic figures of the startup environment, Steve Blank, said on an interview for *Nature Review* (August, 2014) that he has changed his own definition's application of what this term means during the years.

There have been quite a lot of intends to explain what a startup company is. I am going to analyze a few of them and try to get a general overview of what the word start-up stands for and how it differentiates from other conventional companies.

2.1 Growth definition of a startup (Paul Graham)

Paul Graham is one of the founders of a well-known incubator worldwide in the Silicon Valley. He defines the so called start-ups as: “a company designed to grow fast. Being newly founded does not in itself make a company a startup. Nor is it necessary for a startup to work on technology, or take venture funding, or have some sort of "exit." The only essential thing is growth. Everything else we associate with startups follows from growth.”

The substantial objective is to create something that grows fast and could target a big market. Two conditions are to be followed:

- A) We should think about something that could fit a truly big market that actually needs the certain product or service.
- B) It has to be easily accessible and try to serve all the people.

Most business models are not made to fit both A and B at the same time but they are constrained to one of them. Start-ups are not limited only to A or only to B. A start-up has to open a whole new market and find something that others have missed. Successful founders of innovative businesses are able to observe different problems and intend to solve it thanks to the technology when most of the people are not even able to find the problem. That is why Paul Graham said: “But at the moment when successful startups get started, much of the innovation is unconscious. “ It means that founders discover the solution of the problem intuitively and not necessarily understanding the importance of it.

2.1.1 How fast does a company have to grow to be considered a startup?

Graham does not provide a specific time limit. Entrepreneurs commit to their ambition to develop a fast growing company. At the very beginning, they start as good listeners and observer. Attendance of networking events where they could get more inspiration, listen to other entrepreneurs’ experience with startups and meet with investors, developers, teammates and any other person that could inspire and inform them.

2.1.2 Deals. Why investors like startups so much?.

A recent research by Shikhar Ghosh published by Harvard Business School shows that 75% of all start-ups fail. Fundamentally the support that they would receive will help

them grow even faster. Graham says: “Raising money lets you *choose* your growth rate.”

One of the main decision driven factor for investors is the ratio of return to risk. As you will see an interview that we conducted with the CEO of Educast, he explains us that startups are risky but the returns on even one startup could be immensely high.

2.2 The Lean Startup definition (Eric Ries)

Eric Ries is a Silicon Valley entrepreneur and follower of the lean startup movement. He was one of the first to apply a scientific method to building sustainable businesses. He defines start-up as human institution designed to create new products and services under conditions of extreme uncertainty. The vital part of a start-up is to learn how to build a sustainable business.

Ries affirms that one cannot do entrepreneurship if one does not have a vision. Having strong vision helps you see better the hypothesis. Most of the people fail if they do not have hypothesis or they cannot explain it. We have to learn better the rule of causality to better explain the whole process. According to Ries, a startup was a small company that takes on a hard technical problem. That is the most common recipe but not the only one as we will explain on the next definition which is at the origins of Ries’.

2.3 Origins of the Lean startup method (Steve Blank)

Steve Blank has been involved with eight high-tech start-ups, as either a founder or an early employee. He invested in a startup founded by Eric Ries with a single requirement for Ries to take Blank’s course. With the time Ries recognized that the traditional system had to be replaced. Eric dubbed the combination of customer development and agile practices the “lean start-up.” This method is now taught at more than 25 universities.

The lean start-up is a new methodology that is making the process of starting a startup less risky and “*favors experimentation overelaborate planning, customer feedback over intuition, and iterative design over traditional big design up front development*”. (Blank, 2013)

According to Blank we have been wrong for the last half a century about the entrepreneurial world. We have erroneously believed that new ventures are smaller versions of large companies and that they have to apply technology analogically as their

“*bigger siblings*”. Now we see the importance of the business models in startup. They do not have a clearly defined business model and are seeking for the most appropriate one. Breaking up with the old-fashioned way of starting a business, Steve Blank proposed new approach before even starting with the business plan. The lean startup consists of three components:

- A) Founders need to summarize their hypotheses in the ‘business model canvas’
- B) Founders have to “get out of the building” and test the hypotheses by feedback of the end users, partners, etc.
- C) Founders have to create ‘minimum viable model’: developing products incrementally and iteratively, with agile engineering

One of the critical differences is that while existing companies *execute* a business model, start-ups *look* for one. This distinction is at the heart of the lean start-up approach. It shapes the lean definition of a start-up as a temporary organization designed to search for a repeatable and scalable business model. The lean start-up methodology focuses on the importance to constant customer feedback.

The idea behind the lean startup is not only about the entrepreneurs themselves, but it has bigger approach. Blank does not rely only on this method for companies to get successful since there are much more factors to be cautious about. However, he claimed that “Using lean methods across a portfolio of start-ups will result in fewer failures than using traditional methods.”

3 DEVELOPMENT OF SOUTH KOREA

“Even from a small stream, a dragon can arise” – Korean proverb

South Korea has experienced pronounced economic growth over the last half a century becoming one of the largest economies in the world. During the period 1960–2012, its gross domestic product (GDP) per capita (constant 2005 US\$) increased from \$1,107 to \$23,893 (World Bank, 2015).

3.1 The Hermetic Kingdom

The Korean history roots go back to the first century CE. Back then it consisted of “Three Kingdoms”. They adapted and implemented most of the Chinese governance, educational, agricultural, medical, artistic systems as well as Buddhism. However, they

developed their own language (Hangeul), alphabet known as one of the most scientific ones, a unique pottery tradition and distinctive cuisine from China and Japan. Except of maintaining diplomatic relations with these two countries, during the 17th century the Korean Peninsula closed its borders to the rest of the world. It is important to highlight this dramatic change since it did not bring any international developments. Due to its own isolation, Korea was not prepared to defeat a modernized and technologically advanced Japan. It disappeared from the map of the world for 35 years starting in 1910. On the one hand, Japan colonized Korea, and Korean citizens were heavily exploited and suffered one of the worst suppression periods for their culture, language and society. Towards the end of the colonization they were forced to assume Japanese names, official documents were written in Japanese and Korean language education was banned.

On the other hand, as a colony of such a progressive country, some of the most important social, economic and political changes took place due to the colonizer. The Japanese introduced modern administration, law and education expanded. They smoothly supported a growth to modern economy investing in infrastructure and industry. Japanese and local-owned companies were established and listed on a stock exchange. National life expectancy and population augmented whilst media, literature and film blossomed.

Korea felt its freedom after Japan's defeat at the last days of the World War II. The defeaters of Japan agreed on 38th parallel of the Korean peninsula, later on also known as the Demilitarized zone (DMZ), as the demarcation line between the two regions. URSS then, took over the northern Korea and USA controlled the southern Korea. North Korea has influence of communism and South Korea of the capitalism. The South obtained plenty of useful skills in management, engineering, entrepreneurship and improvement of English language from the US army.

Korea is now independent but continues to adapt the USRR way and the American way but foreign powers continue to overshadow them. However there are some facts that still connect them. The citizens have developed a fierce nationalism, the function on a basis of hierarchy, based on a respect towards their elderly morality. (Salmon, 2014)

3.2 The builder of the nation – Park Chung-hee

In 1963, one of the most relevant figures in the Korean history– Park Chung-hee – was elected president of South Korea with the support of the United States' president by that

time – John Kennedy. His first move was to implement Japanese style of a private enterprise which would be tightly connected with the state – the so-called *chaebols*. The private businessmen were preferred, 50 firms would be assigned specific tasks in a concrete sector with scarce capital whilst they would get the protection of the state in competition with the imported goods. Moreover, Park's goals were not to boost national supply but exports of Korean products in order to become more competitive on global markets. Even today Korean products' prices are higher at home than abroad – making Korea a producer economy. Unquestionably Korea took advantage of “the most favored nation” trade status in the US market – the largest of the world. His blueprint was to start with heavy industry (steel, autos, shipbuilding, electronics, machinery and petrochemicals) and create great infrastructure (Seoul-Busan, as the German autobahns) along with the boost of the automobile industry. “Samsung” or “Three Stars” was producing wigs and textiles but now it entered to the electronics and shipbuilding. After the opening of the highway in 1970, “Hyundai” meaning “Modern” in English was created in order to provide the Korean population with the right means of transportation for this growing nation (ships and autos). “Daewoo” or “Great Universe” went into electronics, autos and ships. (Salmon, 2014)

Main funding of these projects was coming from Japan's compensation for colonization, the aid provided to the US (with Korean soldiers in Vietnam), West Germany (with Korean nurses and miners' remittances sent back to their homes) and commercial loans.

Koreans had a traditional distaste for business and manpower. Therefore via schooling the morning affirmations as “We were born with the mission of modernizing our nation!” emerged to promote industrial diligence. During this period the “Palli, palli” phrase which literally means “Quickly, quickly” became extremely popular. They were inspired to work and study hard in order to achieve success they never had – Korean culture will be defined by this simple phrase. Koreans worked for six days a week with a week of holiday per annum; nationalism was promoted strength of unity and prosperity as final goal.

In 1970 South Korea's GDP was US\$8 billion; in 1975 it grew to US\$21.1 billion; in 1980, it almost tripled to US\$62.2 billion; and in 1985, it was a surprising US\$93.4 billion. South Korea's coming-out party fortuitously showcased the nation as a business

partner to Eastern European nations emerging from communism. Korea had gone from an agrarian basket case in the 1950s to an industrial powerhouse in the 1980s and was being talked of as another Japan. In 1985 Newsweek declared, “here Comes Korea, Inc.” In urban areas in the 1980s and 1990s, gigantic, identical apartment complexes rose as the population shifted: 50 per cent of South Koreans lived in the countryside in 1970; by 1990, 81.9 per cent of them lived in urban areas.

By the 1980s the national champions that Park had incubated were giants, diversified in at least two areas family-run conglomerates – *chaebol*. The term “chips to ships” fitted Samsung, Hyundai and Daewoo. Under Park links between government and business had always been tight. In 1996 the country suffered a record trade deficit of US\$23 billion. These were bad numbers for a country that had in 1996, joined the OECD. During year 1997 more than five chaebols collapsed and South-east Asia’s property bubble burst. The citizens donated their gold at banks to pay off foreign debt; US\$1.3 billion was raised. But that was not enough. IMF granted US\$58 billion bailout – record by that time. Previously, it was almost impossible to fire people; the social impression was a “job for life”. Suddenly, there were 1.8 million unemployed. The important thing was that factories were running and they maintained chaebols slimmed down between 1998 and 2000 affiliates dropped 30 per cent. Government sponsored “big deals”, overlapping business were merged; Hyundai and LG’s chip-making arms became Hynix, etc.

Historically, foreign investors had been unwelcome unless involved in technology transfer or joint ventures. However, during the period of two years starting in 1998 a total of US\$40 billion were accumulated from FDI; more than the period of 1962 to 1997. At the end of 1997, Korea had just US\$4 billion; by 2002, US\$116 billion had been accumulated in reserves. Graduating from crisis ahead of time, Korea had astonished the world – again.

In 2003 South Korea was racked by a credit crisis due to the promotion of easy credits. There was a change of pattern from being some of the world’s heaviest savers to carrying some of the world’s heaviest household debt. They were clever and protected themselves from the financial crisis in 2008. The way of diversifying its trade portfolio beyond the US and the EU was the key part. China is today South Korea’s biggest export buyer and South Korea is China’s biggest direct investor.

This left the big boys to profit from the tech boom and another infrastructure boom. Surviving chaebols exited the crisis stronger. In 1998 they refocused on core competences rather than doing everything. Yet neither is a blue ocean inventor: no Korean company has yet invented a new product category. Their “second mover” strategy obviates the investments made and risks taken by “first movers”. Instead, chaebols forge up extant pathways with their fast decision-making, efficient manufacturing and global distribution. While not inventors, they are incremental innovators, registering huge numbers of patents – thinner displays, faster chips devices with more applications. Korean companies still faces intellectual property issues. Currently, Samsung Electronics is the world’s largest electronics company, the biggest seller of memory chips, smartphones and TVs, and number two in semiconductors. LG Electronics is the world’s largest display maker; Hyundai Heavy is top shipbuilder; and Hyundai Motor is the fifth biggest car manufacturer.

Foreign investors in South Korea often fail to grasp the quirks of the local business environment, for Korean capitalism was never a free-market variety. Internally, it was a centrally planned, state-led, producer- rather than consumer-centric model. Externally it was assisted by ex-colonizer Japan and Cold War ally the US. Korean driving force was global trade.

Twenty-first-century Korea is the world’s eleventh largest economy and seventh-largest exporter; it is home to world-class companies, infrastructure and technology. Given that the country was poverty stricken, inexperienced in global trade and home to not a single global brand in 1960s, this is remarkable.

4 GENERAL OVERVIEW OF STARTUPS ECOSYSTEM

4.1 Development of the IT infrastructure

What is more important and media was not keeping eye on it was the IT development of South Korea. During the 1990s the nation took a radical approach to IT. Just like the industrial transformation, its high-tech miracle would be a top-down approach. Government led the way, providing funds, subsidizing technology and co-operating with companies to create infrastructure; firms then created the services and products to run on it. Korea’s first mobile phones had been imported for Olympic management. They established a network as new comers with first service in 1996. Becoming the first

nation to adopt and commercialize Code Division Multiple Access (CDMA), created by US venture Qualcomm. Europe and the US had adopted different standards, meaning that Korea would be globally out of synch – but could run better services.

In 1993, government officials knew that they needed an “Information Superhighway”; all new office and residential buildings were embedded with fibre-optics. The fact that most of the Koreans were living in apartments accelerated the wiring and by 2005 the whole country had broadband coverage. The connection speeds were four times faster than in the US, and soon 30 per cent of global Wi-Fi hotspots would be in South Korea. It was probably the world’s finest national Internet backbone.

The country was hailed as a living IT test lab. Tech royalty such as Bill Gates visited it. Business boomed: carriers KT and SKT ran services, manufacturers Samsung and LG sold gadgets, while “PC bangs” (high-speed Internet cafés) proliferated. New companies – Internet portals *Naver* and *Daum*, game developer *Nexon* – joined Korea’s list of top firms. Despite this success, South Korea has always been poor at capitalizing and incubating small companies and there had been excessive promises and over-exuberance. The venture industry was snuffed out amid the credit crisis.

Koreans’ enthusiastic adoption of IT is usually explained by its cutting edge infrastructure and world-class tech companies, but culture has its word too. Koreans are communal and education-obsessed and IT is both communication enabler- explaining higher number of personal gadgets – and education enabler- explaining high number of home PCs. The mentality of egalitarian-but-competitive is common: if Kim has something, Park and Lee want it, too. Hence, Koreans upgrade personal gadgetry with dizzying frequency. Moreover, *hanguel* is tailor-made for digital devices: it reads vertically and horizontally.

Korea’s cyberspace is renowned. Seoul City provides a global benchmark for e-government. Social networking sites Cyworld and I Love School predated Facebook. Game designers are world-class and are pioneers in monetizing free games by selling online gear, avatars and advertising. It is even therapeutic: after a 1999 fire killed 23 elementary schoolchildren, a web designer provided parents avatars of their deceased children, which they could take for outings in a bucolic virtual landscape. (Salmon, 2014)

4.2 Korea's beginning of entrepreneurial development

In 1997, as a consequence of the Asian Financial Crisis the unemployment rate as a percentage of total labor force of Korea grew from 2.617 during the crisis to 6.950 in 1998 (EconStats, 2010)

In order to boost the economy the Korean Government tried to expand venture companies including IT companies through a Venture/IT New Deal Policy. It consisted of supply of providing IT equipment and aid to all education institutions. As a consequence, the industry started to expand, newly IT departments were established and there was increase of students enrolled. Since the middle of the 2000s, the Korea we knew it started developing abundant amounts of innovation and inventions in the IT sector. The scope of the Korean industry was now focused on products such as display, semiconductors and mobile phones. This whole pattern has been followed in the "creative economy" concept that will be explained below.

4.3 Creative economy

Korea's current president Park Geun-Hye (PGH) has prioritized the implementation of a "creative economy" (CE) in her administration's agenda to promote economic democratization in order to reduce inequality. This shift has only been positive for Korea. It reflects increasing recognition that Korea has reached the limits of its previous "fast follower" economic strategies and that its future prosperity depends on becoming a global leader in developing and commercializing innovative products, services and business models. Concentrating on regulatory, structural, education and cultural obstacles are necessary to reach the goals. Relations with the US with the Creative Agenda are frequent: With KORUS, they will increase cooperation through innovation.

Park defined "Creative Economy" as the creation of new industries and employment through "the convergence of science and technology with industry, the fusion of culture and industry, and the blossoming of creativity in the very borders that were once permeated by barriers." She also recognized the importance of cultivating the ecosystem needed to foster the innovation that will make possible this vision.

Innovation definition: implementation of a new or significantly improved product (good or services) or process, a new marketing method, or a new organization method in business practices, Workplace organization, or external relations. It also includes R&D

and intangible assets (organizational management, human capital, workforce training, marketing, design and IP). Fundamental Questions to consider in Korea's CE Agenda:

1. What are the core components of innovation-focused growth policies?
2. What are the most effective role for governments in promoting innovation?

Innovation ecosystems are produced by framework policies, economic conditions, and interactions among diverse groups of institutions. The main actors are governments, small and large businesses, universities and research institutes, legal, financial, and other professionals engaged in the innovation process. Among the Framework Policies we should focus on R&D, education, physical and regulatory infrastructure, tax burdens and incentives, trade and investment, standards-setting processes, labor mobility and government procurement. Most agree that the most effective roles for the government are to facilitate and shape the framework conditions, coordination among the broader networks of actors and policies involved. (Connell 2014)

4.3.1 The Creative Economy in Context

Korea's gross domestic expenditure on R&D is one of the highest in the world, and it is one of the world's 4th largest sources of triadic patents. It is a global leader in patents related to information and communications technology (ICT), Korea has one of the strongest internet infrastructures in the world. This overshadows imbalances within the country's innovation ecosystem.

Examples 2010:

- A) $\frac{3}{4}$ of Korea's R&D was done by the private sectors (large companies and applied research)
- B) 88% of R&D was in manufacturing sector of which 48% was in the single category of radio, television and communication equipment.
- C) Korea rates low in the OECD economies in patents for biotech and nanotech. (organization for economic Co-operation and Development)
- D) Korean Public Universities R&D activity is low since it is conducted by small and medium-sized enterprises (SME) and R&D related services.

Korean government focused on export-driven growth by chaebols more than SME and services sector. In addition, the above indicators reflect disparities that emerged during

Korea's rapid industrialization that have led to growing wage and productivity inequalities.

PGH: "For the CE to blossom, economic democratization must be achieved. "

SME are thought to be fruitful sources of innovation and job creation but they cannot develop innovative capabilities due to their role as suppliers and subcontractors in the vertically integrated structures (typical in large Korean companies). Also due to the high levels of trading with *chaebols*, opportunistic practices by large companies towards SMEs and limited financial, human and other resources.

Regarding the existing educational and cultural challenges, Korean government will try to improve university level in vocational training and creative problem solving graduates. There is a notable pressure on the youth to have stable jobs in government or large companies (*chaebols*). Moreover, the results surveys for Koreans show that there are positive views toward entrepreneurship, high fear of failure and negative perceptions of entrepreneurial skills and opportunities. There is a need for people to feel empowered to explore entrepreneurial opportunities and take risk in order to have a successful CE agenda.

4.3.2 *The creative Economy Blueprint*

PGH is different from the rest of past presidents in Korea because she places CE as a priority in the policy agenda. She has done a lot for it: establish new ministry of Science, ICT, and future planning (MSIP) for the purpose of leading the development, coordination, and implementation of creative economy policies within the government. On regular basis, she visits startups and holds meetings with renowned entrepreneurs and futurist to seek their insights. More than 200 tasks will be assigned to 20 Government Agencies to set them out and achieve the Dynamic and Innovative Economy (Connell 2014).

4.3.3 *Measures to improve SME productivity:*

- A) More funding
- B) support for SMEs to enhance their technology development and commercialization development
- C) New synergies between large and small companies;

- D) Strengthening legal frameworks to prevent IP and technology leaks.
- E) Government support in recruiting, training and maintaining high skill workers.

4.3.4 Governments Role:

- A) Recognize limitations
- B) Implement regulatory tax to reduce risk for entrepreneurs and encourage business to invest in R&D and create new jobs
- C) Caution to no create dependencies on public funding
- D) Build strong public consensus around the value of innovation and CE à encourage more people to consider entrepreneurial opportunities, and frame and build public support for more comprehensive and politically sensitive education, labor and social welfare.

Since 1970, South Korea, as an OECD member has experience undeniable growth. Several events have led to the countries success. First, in the 1960s, South Korea aimed for labor-intensive manufactured exports. Second, the government invested in sectors such as industry, engineering and manufacturing hoping for growth. To top on to this, the government spent a considerable amount of public funds in venture capital and business incubator industries at the same time it enhanced access to different types of financing, in the hopes of the SME role in regional economic performance.

In the year 2010, aware of the relevance of innovation, the Korean government has increased the promotion of SME innovation with 957 million US dollars (14.2 % of total R&D investment for SMEs). As a result of this, South Korea is now recognized as being one of the leading models for SME development. Owners of Small and Medium Business Administration (SMBA) claim that these patterns for innovation of SME have brought benefits such as new job opportunities. This has also led to a more sustainable, and advanced, stronger and balanced growth for the national economy on the global framework. Up to this point, evaluation of SME programs had been reserved for individual achievements based on reports without exteriorizing it. Now it reaches the policy objectives including technological development networks with outside organizations such as universities, and public and private research institute corporations.

According to some experts of the technological and scientific development of South Korea, the growth of the past two decades has been produced by the main conglomerates – *chaebols* such as LG, Hyundai, and Samsung.

The region of Gyeongbuk which is not far away from Seoul, is hoping to be Korea's Silicon Valley. The government is looking to create clusters of innovation-oriented regional development in areas of new material development, electronic information devices and oriental biotechnology.

4.4 Personal review of the Korean startup ecosystem

An important part of everyday situation in my life relies on technologies. Since very young I have been fascinated by the power of innovation in technological sector. Starting from the way you get up in the mornings – having the “*Lark Alarm*” to wake you up at the right time you wanted with wristband vibrations and without bothering your roommate in the shared room of the dormitory – to even revolutionizing the whole laboratory testing with health-care startup “*Theranos*”. Innovation is something that drives our society into the next level economy where we are every time more dependent on the technological resources. Nowadays, knowing a programming code is something as basic as knowing English language for communication with people in the technological startup ecosystem. Moreover the importance of the sharing economy is constantly increasing; spreading the knowledge through both off and online channels such as networking events or massive open online course (MOOC) is becoming easier and more effective than expected. However when analyzing the entrepreneur or startup ecosystem of a certain country we have to look into details some other parameters too.

Starting to analyze a country with such a short period of development we have to consider all the historical facts described in the previous part of this paper. We ought to start from the Miracle of the Han River that South Korea experimented from the late 1960s to the new millennium. Additionally, we have to take into account the implementation of the Creative Economy, that we explained on the previous Chapter of this paper, as a tool of boosting the economic growth and nurturing the startup ecosystem.

Most of the people do not know much about this country and more likely would imagine Koreans as conservative or reserved people. However, there is an impressive change of the global representation of their culture. Korea has become a courageous,

assertive, and enthusiastic First World country for a record time period. Some people might have watched Korean dramas and all of us have heard about PSY's K-pop hit that made YouTube's counter surpassed the 32-bit integer. And of course who has not discussed about the great battle between the Korean *chaebol* Samsung and Apple for the global smartphones' market share. Or perhaps the perception of Korea you have is the vivid, fast-paced, vibrant metropolitan capital – Seoul. All perception that you might have about this isolated on the South of the Korean peninsula country are right. But how much do we know about their progression span – not enough. Thus we will explain from the creation of this country.

After the 1950s Korean War, it took decades of extreme effort, and government support of Korean corporations to achieve the *Miracle on The Han River* in Seoul, for Korea to get where it is today – 11th Economic power, passing from being on par economy with Ghana during the 1960s. To visualize this change you just have to look at Gangnam area before the economic miracle took place. Rice fields and few signs of what was to happen in the coming years, and Seoul, just visible on the horizon, about to expand into the world's largest metropolitan center. Now high rise buildings have taken the place of these fields. Numerous bridges allow workers to move easily with metro between the two parts of Seoul separated by the Han River. Technology, money and industry are pervasive.

First of all, I would like to explain how I came to be in Korea. Knowing very little about South Korea, I chose it as my destination for my first six-month adventure in Asia. Once there I had clear vision of what the Korean ecosystem was. I had to opportunity to participate in “*YES Challenge Korea*” in Seoul. During these five days of insights and demonstration of technologies and experiences of managing global enterprises my interest in Korean tech startups was established. The pace of change in this industry has been phenomenal. This event was jointly organized by SMBA (Small & Medium Business Administration) & KOVA (Korea Venture Association) and held by BeSUCCESS – the biggest online media about startups and tech investments in Korea. The event featured programs that involved solving social problems, networking, start-up visits, and presentations of traditional representative entrepreneurship role-models of Korea, chances to experience Korean traditional culture, visiting the Global Entrepreneurship Week.

In order to comprehend the Korean market it is important to comprehend the countries demographics. South Korea passed from having 25 million in the year 1960 to roughly 50 million people in 2015; it doubled its population in less than 60 years. (Statistical Yearbook for Asia and the Pacific, 2014, ESCAP Statistics Division www.unescap.org/stat/data/) Seoul is now one of the largest metropolitan hubs and the most densely packed city of the World. With half of its population living within Seoul Capital Area, Korea is the home of the world's biggest electronics manufacturer, Samsung. This high population density has only translated as an advantage for the rapid, uniform and easy implementation of the first rate IT infrastructure becoming the mobile 'tech-trend super highway'. Koreans have worked exceptionally hard over four decades to achieve this progress and undoubtedly they have achieved *the tech-savvy nation* batch and are confidently leading the world. The tech landscape in Korea is astonishing thanks the second to none IT infrastructure. They still maintain the highest mobile internet and broadband speeds worldwide, as well as extremely high internet, mobile, and smartphone penetration. A professor at Howard University and former senior policy adviser in the White House Science Office Oliver, McGee mentioned, on an article posted during November 2014 on LinkedIn, that Seoul is having the fastest download/upload speeds with 1 Gigabyte per second (Gbps) out of a sample of 24 hours worldwide. Moreover, the LTE-A enables users to download a full length movie in less than a minute on any hand-held device.

Meanwhile, Korea has become one of the wealthiest nations in the last few years, with GDP per capita with \$23,985. The stable real GDP of Korea has not been lower than 3% since 2013. The projected real GDP for 2015 is of 3,3%. This, along with Koreans' obsessive consumerist and internet behavior has determined Korea one of the largest e-commerce markets, with special relevance to the mobile market. What is more significant for us is the success in the tech space which is beginning to get more and more admired look as an exciting tech startup ecosystem by those who years ago were supposed to end up at one of the *chaebols* instead of Korean startup.

Historically, Korean governments has always provide strong backing for large family run corporations although domestic IT startup companies are outstandingly dominant in many areas. We could start with the online portal space – *NAVER*, *Kakao* and *Daum*. *NAVER Corporation* is Korea's premier Internet company, operating the nation's top search portal www.naver.com which clearly substitutes *Google* or *Yahoo* and they stand

out for their continuous research and investment in core technology development. Kakao has also risen with 97% penetration on Korean smartphones. Started as a mobile messaging service and burning through \$5M per month for about 18 months, monetization happened through its games platform in July 2012. It is a phenomenon not to be ignored. In the mobile messaging space with 100 million users of *KakaoTalk* and definitely the most successful domestic super app. *Daum* merged with *Kakao* forming *Daum Kakao Corporation* during November of 2014.

Koreans across age groups tend to spend more time on their device than any other markets. They really are involved and feel very secure when they are performing in-app purchases. This is partly due to the fact that Koreans have become very used to making payments on their phones in-app. The e-commerce market is also making good use of this trait. Another proof for the dramatic penetration of smartphones is the mobile shopping transactions the first quarter 2015, which increased 79.2 percent from the first quarter 2014. The change from in the fourth quarter 2014, which increased 107% from the fourth quarter 2013 is extraordinary and stable. In 2015 the online shopping transaction value declined by 3.0 percent while the mobile shopping transaction value rose by 3.0 percent

As we see, Korea is a world leader in the online payment space. SK Planet has a mobile payment system called T Cash, which can be used for in app purchases, and also to pay for off-device transactions such as train and taxi fares. This is another strong characteristic of the Korean environment that clearly provides opportunities for companies operating online for development.

Another proves of well-defined environment for tech startups is Internet access. Statistics Korea (KOSTAT) in their report for 2015 stated: "In 2014, 95.2% of the youth in their teens used the Internet more than one time a day. Their main purposes were Communication, Leisure activities and Information search"

Despite of Korea being a fairly small market, there are plenty of new startups that are emerging. Another sector to pay attention at is the gaming startups. With its more than 10 years old history of gaming as a career, now we observe massive swing from PC to mobile in the gaming industry. There is impressive engagement across all age groups. Koreans consumers are demanding since the engagement rate to new styles is quick.

Nathan Milliard on the opening ceremony of the YES challenge said: “Expect Korean companies to continue vying for global markets. In my work with SMEs in the mobile space, I expect the next 12 months to reveal an increased number of Korean companies with viable global products and services. Koreans will definitely continue to lead from a consumer perspective, especially as the device market becomes saturated. With the best IT infrastructure in the world and perhaps the most active consumer base Korea should be on your radar for 2014. (Personal notes of conferences and business events, 2014)

4.5 Current Korean startup ecosystem

Today, the innovation of SMEs is similar to some relevant factors of technological innovation, some of the main ones being, patent, utility model, trademark and design registrations. According to empirical research, there is a positive relationship between technological development aid by the Korean government and patent acquisitions and new design registration of the startup sphere. Furthermore, university networks have also been recognized as having the same relationship with new design registration. This makes us realize the strong influence government can have on the innovation of SMEs.

The 1980s brought forth the knowledge driven economy; a new approach to global economy. Due to the success of this, the sustainable economic performance has been spread to every government who aim to apply entrepreneurship and knowledge creation in their national innovation systems.

The innovation in entrepreneurship and institutions comes “strong positive effect of institutional trust and networking on entrepreneurship” since institutions believe that expenditure in innovation for technological startups contribute to growth of the economy by reducing scale economies through expenditure in innovation for technological startups

4.5.1 Education

One of the most distinctive facts of Korean people is their eager to education. This passion has deep roots in their history. In the past, studying was a prerequisite for getting into a powerful position in Government (Lee 2007). This perception of “knowledge is power” settled in the Korean consciousness during the Japanese colonial period (1910–1945). Education was always in the center in the country as a ladder for climbing to the upper class (Kang 1996). As part of their familiar culture, Korean students tend to study not only for themselves, but mostly for their family.

Referring to the previous concept in the past, unsurprisingly education is comprehended as part of a “struggle to survive” in Korea.

Western Countries use Korea’s results in areas such as mathematics, reading, and science to benchmark due to outstanding academic performance. That has been achieved thanks to the Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS). PISA allows comparing and contrasting the quality of educational results across education systems. (Bermeo 2014)

Korea has received international attention due to its maintenance on top ranking in all sections, since 1995 and its increase in overall scores (McKinsey and Company 2010).

Barack Obama highlighted: "Let's also remember that after parents, the biggest impact on a child's success comes from the man or woman at the front of the classroom," during his first remark on Korean education system during January 2011. Few months after the president of the United States said during a classroom visit at Tech Boston Academy in Massachusetts' capital city "In South Korea, teachers are known as 'nation builders'".

Through the years, South Korea’s quality education system has relied on four pillars: (1) putting education at the center of a long-term development strategy, (2) getting the right people to become teachers, (3) developing these people into effective instructors, and (4) prioritizing information and communications technology in education.

The country’s education systems is efficient, essential mechanism and accessible to all citizens for nurturing national strength. (Bermeo 2014)

In twenty-first century in order to achieve sustain excellent academic standards we have to focus on new learning that emphasizes innovation, creativity, and exploration (Hung et al. 2012). And this is exactly what South Korea is doing; education system has been readjusted to the needs of growth and structural variations in the economy (Kim-Renaud 2005: 5–6). Korean educational system boasts the startup ecosystem with highly skilled developers and engineers after or even during their years at the university. Those graduates are keen on creating new business ideas with global potentials.

Martin Schaaper from the UNESCO Institute for Statistics demonstrated that: the more developed the region, the higher the percentage of the population that have completed tertiary education; more and more students are enrolling in tertiary education and the

regions with the highest numbers of people with tertiary education and with the highest enrolment ratios in higher education are also those with the most researchers as a proportion of the total population.

Some of the statistics that prove the excellence of the Korean educational systems are stated below. South Korean government dedicates 4.9% of GDP to the Education expenditure. (OECD, 2013)

Repeaters in primary education with both males and females were equal to zero in 2013. Moreover, reaching grade 5 and reaching last year of Primary education for both genders is 99% in 2012; followed by transition rate to secondary education of 100%. South Korea's primary and secondary school enrollment rates are almost 100 %. The World Bank and the UNESCO Institute for Statistics jointly developed the primary completion rate indicator which is of 111% of relevant age group during the 2013.

In addition, the cooperation between the university and the government is fundamental during the business development period. In order to enhance this cooperation, MSIP has developed policies for Korean universities' science technology majors in order to make them more flexible for the founders of startups. The students from five of the most influential S&T higher education institutions: Korea Advanced Institute of Science and Technology (KAIST); Gwangju Institute of Science and Technology (GIST); Daegu Gyeongbuk Institute of Science and Technology (DGIST); Ulsan National Institute of Science and Technology (UNIST), and; Pohang University of Science and Technology (POSTECH) will have the opportunity to take up to 8 semesters break to cultivate their entrepreneurial idea. (Won 2013)

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4.5.2 R&D centers

A part of the education systems, we have to analyze also the research and development (R&D). The process of transformation from imitation to innovation requires efforts to invest in research and development (R&D) (Innovation and Economic Growth in East Asia: An Overview, 2015). Its intensity provides another basis for international comparisons of R&D performance. The massive increase of intangible assets and intellectual property is a key change for cooperation between governments and

businesses to secure the first place by innovation through R&D. Korean government is one of the fastest to take action to achieve growth. According to the 2013 National R&D Survey of Korea, the amount of total R&D investment in Korea was 59.3009 trillion KRW and it accounted for 4.15% of Korea's GDP.

On 24th of March, 2015 MSIP concluded the investment concentration of R&D. The direction that will take is into expansion of future growth potential and provision of R&D support for more public to feel benefited, modernization of R&D cycle system to maximize positive outcomes and transformation toward investing in quality from investing in quantity. The investment areas will be in leading economic innovation, realizing happiness of people and innovating foundation of S&T developments.

We are observing that many mature industrial centers, triggering the search for business models and policies that can attract new industries and rejuvenate local economies. Since the 1990s, clusters' emergence in the Republic of Korea and Taiwan (China) as industries have migrated first to Southeast Asia and increasingly to China, beginning with textiles, footwear, and consumer electronics and now extending to semiconductors, integrated circuits, and automotive parts. Of course, policy makers are influenced by the experience of iconic clusters in Silicon Valley in California and are trying to implement the same pattern for research and development (R&D) reliance. (Yusuf et al. 2008)

After the Financial Crisis in 1997 the importance of ICT industries and related services in Seoul has become very evident. Gangnam, located south of the Han River in Seoul, is the center of a cluster of ICT-related industries. All these industries gathered in one place led to the emergence of a learning region within the capital city. A high-tech venture environment or high-tech venture ecosystem has been evolving ever since. Through formal and informal meetings for networking that we discuss further more into detail, are the bases of creation and transfer of knowledge. (Yusuf et al. 2008)

Convergence into global R&D has emerged as one of the most significant strategies in the technology innovation process. It has been accelerated because Technological innovation is becoming complex, multidisciplinary, and mega-sized. Korea is targeting to convert into one of the world's R&D hubs by opening up its national R&D system and attracting foreign R&D organizations and researchers. (Yim & Kim 2006)

As in most Asian countries, the Korean S&T system is going through drastic changes. They have roots on the original Japanese technology development model, with its full

accent on reverse engineering and applied research. Koreans had funded a “Creative Research Initiative” (CRI) program provides the ground for basic research culture as part of the R&D infrastructure. MSIP has built IT support centers or science and technology cooperation centers worldwide. In order to promote global venture startup and R&D cooperation they have extended it to Korea Innovation Center (KIC). Institutions are putting all their efforts to connect industrial participation to the research enterprise.

Founded as the first S&T research institute of Korea in 1966 Korea Institute of Science and Technology (KIST), is trying “to bring Quality to Life and Build a Creative Economy based on Science and Technology”. Their research is directed to enhance the capability for greater competitiveness for Korean businesses.

The Korean Institute for Science and Technology Information (KISTI) founded in 1962 It is a government-funded research institute designed to maximize the efficiency of science and technology R&D and support high-tech R&D for researchers. KISTI provide R&D support by collecting S&T information from domestic and foreign bibliographic information resources and make it available to the companies and research institutions. This is a key role for of the Government to foster easily accessible data for knowledge information center, supercomputing and high performance research network.

4.5.3 Patent centers

The potential of the Korean patent centers is remarkably increasing. English Intellectual Property Office reported that only during 2014 Korea had more than 5000 annual patent cases regarding the Internet of Things. Its national patent share of is the third one in the world with 11% just after the U.S. (34%) and China (38%). Samsung, LG, KT and ETRI are among the 15 top companies worldwide with Patent Status.

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The main institution to focus on here is ETRI. It was founded in 1976 in Daejeon, the city which has become the S&T heart of Korea. Nowadays, its personnel are formed by 1,977 and it has been recognized as the World's top agency for patents. Throughout the period 2009-2013, total number of domestic and international Patent Application was of 19,056 cases. Its main representative research areas are IT Convergence Technology Research Laboratory, Software Research Laboratory, Components & Materials Research Laboratory, Broadcasting & Telecommunications Media Research Laboratory, Communications & Internet Research Laboratory and Technology Commercialization Division. In addition, ETRI counts with a Global R&D Cooperation Network of 27 countries. It is the largest government-funded research institute for information and communications in Korea. (Cooke et al. 2014)

Their mission is: "contribution to the nation's economic and social development through research, development and distribution of industrial core technologies in the field of Information, Communications, Electronics, Broadcasting and Convergence technologies."

In February 2014, ETRI obtained a record of certifications and patents – 23 international standard certifications, 67 international patents and 85 were considered for certification out of 1,717 Korean certifying cases of international institutions during 2013 in the ICT area. Main areas of certifications are beyond-4G technology, video encoding, next-generation network technology, and Ubiquitous Sensor Networks (USN).

Audretsch(2002) demonstrated that the patenting rate for SMEs in most cases is greater than for large firms. So this is another reason why the Korean government wants to increase the financial support for the SME.

4.5.4 Angels, Investors and Venture capital center

Now through their own venture-capital firms, they are reinvesting their wealth in a new wave of young Korean companies, helping turn the country's startup scene into one of Asia's most active.

Changseong Ho and his wife Jiwon Moon started Viki, a video streaming platform from Singapore. Later they established Accelerator, the Ventures, to enhance support for entrepreneurs with mentorship and investment. The FuturePlay's CEO Jung-hee

Ryu having long experience in the startup sector and putting this experience he established the incubator providing specialized programs for hardware engineers. Venture capital firms play a central role in financing innovative companies (Paik & Woo 2013)

Hence, venture capital firms can invest in more early stage deals at a discount without injecting much capital into later-stage companies for a prolonged exit process. We find that our empirical analyses are largely consistent with the hypotheses.

Normally an angel investors are wealthy businessman who provides capital to a startup or even an idea for exchange of ownership. Moreover, in some cases they provide personal experience examples and mentorship. The investment could be from a few thousand US\$ to couple million US\$.

VCs on the other hand are only there about the return on investment; they are not supposed to provide any mentorship. They are more powerful and resourceful – able to bring tens of millions or even hundreds of millions US\$ and also are looking for ownership of the startup.

4.5.5 Accelerators and Incubators

The Korean acceleration or incubation programs have experienced a boom during the last 3 years since the creation of the first accelerator in 2012. This is a good sign of ecosystem which is becoming to mature.

"When you used to need \$2 million and several years to build a product, the idea of a three- or four-month program making a difference didn't make a lot of sense," said Axelrod. "When you look at what a couple engineers can do in a few months, now it is a completely different world. Four months and \$40,000 didn't help very much when you needed \$2 million [to build something], but when that can get you a fully working product, it changes."

Both types of mentorships are vital for enhancing your business model and having a great deal of those is a good sign for maturing of the startup ecosystem in Korea. George Deeb said in one of his articles for *Forbes* that among the advantage of these programs are: "(i) shared learnings and mentorship (helping avoid typical startup pitfalls and speeding up your efforts); (ii) access to capital, either within an incubator or post an accelerator; and (iii) the PR value and exposure you get from these programs (not to be underestimated)". Here we could also add companies that go through incubator and

accelerator programs are also able to benefit from the reputation of those programs and the previous companies that have gone through those programs.

Regarding the definition of Accelerator, Paul Bricault said: “An accelerator takes single-digit chunks of equity in externally developed ideas in return for small amounts of capital and mentorship. They’re generally truncated into a three to four month program at the end of which the start-ups graduate”. Actually this program is preparing you for higher level funding and focusing mainly on early stage startups. (Deeb 2014)

According to the National Business Incubator Association (NBIA), an incubator is "a business support process that accelerates the successful development of startup and fledgling companies by providing entrepreneurs with an array of targeted resources and services. These services are usually developed or orchestrated by incubator management and offered both in the business incubator and through its network of contacts." (Mielach 2013)

The difference is that an incubator takes a longer period of dedication to the business idea in most of the cases until the company has sufficient financial, human and physical resources to function on its own (Investopedia, 2015). They help by providing physically relocated to office space with other startups, business advice and guidance provided by influential CEOs, experienced consultants or crucial investors, access to information and research resources via relationships with local universities and government entities and it takes higher amount of equity than the accelerator. (DesMarais 2012)

In Korea, among the accelerators we have to mention the different types of institutions involved in this process of development of the startups.

Among all the important programs with relevance in Korea are Kstartup(2012), Sparklabs(2013), Fast Track Asia(2012) is self-proclaimed “company builder”, Hanwha, Samsung Innovation Centre which has two different investment funds and connects entrepreneurs and innovators to intelligent information, Google is opening a 20,000-square-foot startup center in Seoul to nurture domestic startups and give them more global exposure first Asian start-up Google Campus opened in Seoul, SK Planet, Daum Accelerator, Future Play (2014) provides an intensive program of incubator, accelerator, and venture capital. The Ventures (2014) got acquired by Japanese Rakuten,

Bon Angels, Coolidge Corner Investment (CCVC) Incubating Fund Launch in July 2012 with 14.5 billion KRW fund size, Digital Entertainment Ventures (DEV Korea), Bootstrap Labs, Innopolis, Yonsei, and Postech.

D.Camp a 4,000-square-meter startup hub facility founded by Banks Foundation for Young Entrepreneurs, also known as Dream Bank, in 2012. It is dedicated to assist startups by providing of accelerator, incubator, co-working spaces and educational activities.

Kstartup in partnership with Hyundai HCN, Hyundai Media, and BAM Ventures is the biggest accelerator and the first one in Seoul. Hyundai HCN and Hyundai Media are the broadcasting and contents subsidiaries of Hyundai Department Store Group in Korea, and BAM Ventures is a leading seed fund in Los Angeles. They focus is on preparing the startup for going global by providing free workspace, technical, operational and business mentoring, as well as seed funding to startups we choose through a selective screening process. Moreover, one of their relevant features is that Google became their accelerator/incubator partners in Asia for the ‘Google for Entrepreneurs’ program. Strength of theirs is the possibility to pitch in Silicon Valley to top VCs, including Sequoia capital.

SparkLabs(2013) is accelerator founded by entrepreneurs for entrepreneurs in South Korea . It focuses on expansion to the global market such as USA, China, and Japan. Their investment thesis is “The Future is Data” in sectors such as consumer Internet, enterprise software, online gaming, mobile, ecommerce, digital media sectors and healthcare. With relevance we could mention *MangoPlate* and *MemeBox* as veterans in their acceleration programs. It is a traditional accelerator model that is mentor-driven and invests \$25,000 per company for up to 6% equity. They choose between 8-10 companies to form each batch and assign between 4-6 mentors for each startup team. The three months program provides funding, office space in MARU180 (the center of Korea’s startup scene), a structure program, mentoring, seminars and regular networking events. They have managed 4 batches and The Demo Day of the 5th batch will be on 23rd of June, 2015. I had the opportunity to attend the Demo Day of the Autumn Batch in 2014. I observed the impressive professionalism and innovativeness with which the 8 graduate startups have been prepared for going global. We ought to highlight the unique marketing by inviting Venture Capitalist from Korea and abroad, influential figures from the industry and the press. Recently, *SparkLabs* has signed a

partnership agreement with the company that built the \$35 billion Songdo International Business District to launch their new Internet of Things (IoT) Accelerator in Songdo during the beginning of 2015.

4.5.6 *Networking events*

"Being an entrepreneur can be lonely," said Axelrod. "You get a lot of great help from folks that would be difficult to round up on your own. One of the key things for a startup is how to access to knowledge of people who have already experienced the taste of failure or success of the startup habitat.

The location is at the Korean startup hub MARU180 in Gangnam area. Moreover, hosted by Joon Oh who quit from Samsung Electronics to follow his dream and work on a startup – MangoPlate, Korea's best mobile application for finding the best meals.

One of the well-known buildings for startups MARU180 opened its doors during April 2014. It was founded by Asan Nanum Foundation with superficie of 3,500 square meter and it is the home of variety of VCs, accelerators and incubators. The idea behind this mixture is to enhance the relationship and efficiency between mentors and startups when important decisions are made.

Startup Grind Seoul is another amazing experience that I had the opportunity to attend during my staying in South Korea. It is a monthly event supported by Google Entrepreneurs to help educate, inspire, and connect local entrepreneurs. Successful speakers are welcomed on interview on each event to explain their success story, difficulties, provide some tips, interactive questions and answers to the Korean startup community. It is a great way to network with successful local founders, innovators, educators, investors; learn more about the entrepreneurial culture in Korea; find teammates for your startup or get inspired for starting one.

5 STARTUP SUPPORT

Naver, Korea's most successful startup, and a beacon of inspiration for budding entrepreneurs, broke through the dotcom crash unscathed, and is set to open a startup accelerator this year in "Teheran Valley," Seoul's answer to Silicon Valley. The area will also house a government-led tech startup campus and the third Google campus in the world.

Startup teams are able raise money even in the very first beginning, as TaeYoung explained us with the VC SeoulBorn that invests only in top university student teams.

By promoting the CE, MSIP will open an additional 17 Centers for Creative Economy & Innovation (CCEI) during 2015. Minister Choi Yanghee of the MSIP said, “When the 17 new CCEIs open this year, we will strive to help them share information and knowhow among the centers.” PGH added that the cooperation and support between all these new institutions would be key point for success.

The government has come up with essential practices to provide great environment for cultivating startups. There was a switch from loan-based to investment-based investment to leverage the negative impact of failures. Creation of the Unlimited Imagination Chamber where students are able to test their ideas thanks to the 3D printers and laser cutters. It also provided active support for SMEs and tries to build a system of cooperation between SMEs and conglomerates, universities and government-run research institutes.

MSIP’s newsletter by the end of 2014 provides statistics for increase from 28,193 to 29,135 venture businesses in 2013. Also rise of amount investment for ventures from 1.23 trillion KRW in 2012 to 1.38 trillion KRW in 2013 which account for an increase of 12.3%.

Moreover, most recent release on 25th of March, 2015 says that ICT will be designed to the driver of the national economic growth in order to achieve the goal – 8% annual growth. This will happen during the next 5 years with total investment of 9 trillion KRW to enhance Korea’s ICT-related production and ICT exports. Four task will be followed in order these goals to be achieved

1. Overhauling Local ICT industry: accelerate technology innovation, foster creative human talent and globalize startups and venture companies
2. Increasing Investment to Encourage ICT Convergence Services:
3. Promoting International Cooperation
4. Nurturing Nine Key Strategic Fields: focusing on Digital content, Big data, 5G, UHD, Smart devices, Software, IoT, Cloud and Information security

Creative Economy Valley (CEV) will be built for ICT and video game industry in order to provide support for those who want to be involved in startup creation. The center will

provide information-sharing among startups and offer business infrastructure support services to them.

The support for university students interested in entrepreneurship will be enhanced as well. The Small and Medium Business Administration (SMBA) will create a “high tech campus for business starters” and provide support of up to KRW 1 billion over the next three years for each of the selected teams. The center will be located in Gangnam area and it will allow around 170 startups to relocate.

In order to boost the competitiveness of IT in the financial sector The Financial Services Commission (FSC) will establish a support center for "fintech," a created word made from “financial” and “technology,” in cooperation with the CCEIs. Total amount KRW 180 trillion to support industries with good growth potential, such as the software and content sectors as we already mentioned. It will also dedicate KRW 200 billion to incubate fintech companies in cooperation with state financial bodies, such as the Korea Development Bank and here is when we see clear cooperation between the large companies and startups.

Raising money for your innovative entrepreneurial idea could be very difficult to get. Before considering that option, the process initiates with the team analyzing their short-term costs and how long they could manage to develop the business without other external funding. Unless they are having completely disruptive business model, the majority of start-ups won't be of interest to investors such as ‘business angels’ or venture capitalists/private equity firms since they look for high return on their investment. Here comes the government role for startups that are not so disruptive. However we are focusing on the technological startups and these are very much preferred by the Korean government for funding. Startup teams are able raise money even in the very first beginning, as TaeYoung explained us with the VC SeoulBorn that invests only in top university student teams.

Government support for SME innovations is provided through a multitude of policies at the local, regional, and national levels. OECD states that the final goal of government support for SME is to viable, competitive, and innovative SMEs. First, governments offer SMEs with targeted and quality business support services for SME innovations. In addition, public institutions have the role of persuaders of attitudes and motivations by transferring information and incentives to build up a sustainable entrepreneurial

environment. Second, studies (OECD, 2004b; ILO, 2001) proved that “SMEs usually lack technical and managerial skills due to limited access to finance; cumbersome, bureaucratic, setting-up procedures; operation and business growth; a infrastructure; and a lack of effective institutional structures”.

South Korea's S&T scene is in the center of attention of big Silicon Valley companies like Google Inc. and Facebook Inc., whose founder Mark Zuckerberg has visited the country twice in two years.

"The success of start-ups is key to realizing the government's creative economy plan, which in turn is key to getting the Korean economy back on its feet" Kwon Soa, Arirang News.

Sources in the government confirmed that a total of almost US\$1 billion was invested in startups until October of 2014, only this was an increase of 9,5% from 2013. Additionally, the amount of Korean startups has reached almost 30,000 during the same year. The Korean ecosystems have seen increase of number of serious investors; US\$1.3 billion was invested into startups which is a 27% increase during 2014. The government is trying to boost the growth of venture companies and startups through the Creative economy approach. Moreover, they are setting innovation centers in all the major Korean cities.

During 2014 SMBA created Tech Incubator Program for Startup (TIPS) which gained national recognition due to its singularity - once a startup team acquires at least 100,000 dollars, the administration will add extra funding up to 900,000 dollars. In early January this year SMBA revealed their plan TIPS for 2015. It is a technology startup support planned to appeal more private investments. Through angel investors from major corporate, TIPS chooses talented teams and delivers aids such as governmental R&D. The main requirement for this program are the team should be less than seven years old and formed by at least two people who are developing highly advanced modern technology. The different VCs, accelerator or incubators are ones who are going to be managing the TIPS programs and provide it to the startups. TIPS program takes 3% of total annual revenue and 40% of applied science development funding once the startup team graduates from the ‘incubator’ successfully.

“Last year the government put almost 9 million dollars for R&D. With Angel investors, just in last year startup support funding through TIPS reached 18.4 million dollars” reported BeSuccess.

Another important obstacle for the startups could be the regulations set by the Korea institutions. As reported by Business Korea, the Korean government will lessen regulations on new innovation-driven industries, with relevance financial technology (fin-tech) and the Internet of Things (IoT). There is optimistic regulatory indication for Korean startups in these industries. At a policy discussion meeting, The Vice Minister of MSIP, Yoon JongRok said that Internet business regulations should be minimized for the industry to build a dynamic ecosystem for further growth. “We plan to reduce the regulations on e-commerce, Internet finance, and IoT in this context,” he remarked.

6 CONCLUSIONS

After analyzing all the relevant factors such as culture, education system, R&D, patent centers, investment patterns and networking events that have influence on the Korean startup ecosystem and adding the personal experience, we could extract some key conclusions for improving startup ecosystem.

The measures of education indicate high retention and low dropout levels are clear indication of internal efficiency of the education system of Korea who is preparing excellent graduates to develop innovative ideas. Relaxing the regulations for the students who are working on startups is a great way to allow this change but there should be more. The government has to provide more different programs for students in every faculty to get involved during the study period. Undoubtedly, Korean R&D centers are performing extraordinary. ETRI has one of the highest numbers of patents for R&D centers. Additionally, creating more networking spaces for entrepreneurs to gather, exchange ideas and get inspired would be a positive outcome for the whole system. They have to make it as a trend topic among the students to boost their interest in entrepreneurship. When it comes to the change in the cultural area, approach with more positive attitude and less fear of failing towards startups is what Korean people have to achieve. In Korea, professional careers at Samsung, LG or Hyundai are still perceived as life-lasting secure position. The Korean government has to stop the *chaebols* from acquiring the recent graduates with innovative ideas and prevent the

whole economy enjoy of the disruptive innovation that those talented youngsters could create. We already know what the benefits from the startups could bring to the economic and social development of a certain country; therefore, the Korean government should focus more on educating students in such a manner so they change their vision for future employment and make them realize the importance of entrepreneurship. It would be a difficult and long path ahead for this society to achieve courage to pursue their dreams of working on ideas they are interested in. However, just boosting startup ecosystems with vast financial supports is not enough to create a sustainable one. Here comes the problem of the organization of the institutions that support the startups.

Indisputably, the Creative economy approach of Korea is a firm step into the development of one of the most exciting startup ecosystems. PGH is trying to adapt the whole Korean development to what it needs in order to sustain its position as global leader in the IT infrastructure. They are on the right way, distributing an important part of Korean GDP to startup support and R&D to boost the entrepreneurship involvement and lessen the dependence on the old-fashioned conglomerates.

However, after living for half a year in that country and being in constant contact with people who are profoundly involved in the startup systems I could say that there are few drawbacks. Although extending the institutions that manage different supports for startups is seen as a positive change, it could also have its negative side too. The whole distribution of funding that is coming from the government has to be better redistributed and maybe having less institutions but with more clear and specific goals would help them improve their efficiency. The government additionally has to create plans to foster experts in each area, with small and mid-sized firms developing the technology themselves, and conglomerates working to commercialize them. Large companies and even the startups that are already proven leaders on the market can play many important roles in accelerating the growth of new early-stage companies. A great example here is the cooperation between the Government and Naver which is one of the first biggest startups in Korea, to create an accelerator and promote the startup spirit.

After the interviews with three Korean startups, we now know that the Government has supported them with funding. Referring to their answers they consider that there is no lack of government support programs what is more some are even criticizing this fact. They see it as inefficient way to boost the entrepreneurial sector since the institutions

are not only looking at those that are most likely to succeed but all type of startup. At the same time this creates a massive dispersion of capital through startups that would never grow and the whole management of these is becoming more difficult. Moreover, the startup teams have had a lot of problems with bureaucracy. Apparently, getting money for the entrepreneurs from the government is extremely time-consuming and meaningless for some of the teams. Most of the startups that I had the opportunity to talk with complained about difficulty to get this support. Some of them explained they had to fill around 80 pages of report in order to apply for it. After that, they had to send a monthly report to the institutions. Thus, the Korean government has to improve their efficiency when it comes to the application process for this supports. They have to consider other ways for application to minimize the effort put into a single application process that would consume neither startup members nor the institutions' time.

Another of the drawback of the support programs that the interviewees have identified is that the support in some cases is coming as set by them which could be office space, labor costs, mentoring, etc. Most of the startup teams are willing to redistribute the financial support in the right way to increase their productivity maybe they should be ones to decide what exactly they need. Financial supports in forms of grants or loans without restrictions on the use would be more convenient and useful for the startups.

The more policy-makers understand what entrepreneurs view as important, the greater the potential for policies to be better aligned with the actions of companies, which are the engine of a vibrant entrepreneurial sector. The report also shows that there are three pillars within an ecosystem which entrepreneurs around the globe consider to be the most important for the growth of their companies, namely accessible markets, human capital/workforce and funding & finance. This “global perspective” of many entrepreneurs can lead to alignment differences between what entrepreneurs view as important and what a government views as important regarding the build-up of a thriving early-stage entrepreneurial sector in an economy. (Foster & Shimizu 2013)

Moreover, the cooperation between chaebols and startups could be focused on the corporate accelerator that those companies have volatility, insecurity and potential bankruptcy. The government has to promote and strengthen the relationship. Implementing networking events or workshops that are organized by the Government where representatives from startups could get to know more about the startup experience and acquire new skills.

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8 APPENDIX

8.1 Interview 1 – Educast

Tae Young Park is student from Seoul National University who has been living in the United States since very young. Since then he has had a different way of seeing the innovation. He has been working for few years in the educational sector with the startup Educast. The idea behind this project is that everybody knows something that could be taught to a massive audience, everybody could become a teacher thanks to their online platform.

8.1.1 What do you do? What is the core business plan? How many people form the team?

The core business plan is to eliminate the barriers between content holders and students. There are several barriers, even if you can teach something; you cannot really shoot a video because you have to buy some expensive equipment. They solve this problem with software or by lending them studios for free. And there has to be online platform where students can watch the videos that have been made. We only focus on videos now and we don't provide exams, we have a lot of interactive features and maybe next year we will start with test, exams and more interactive features.

I started with 4 people. Several months ago we had 14. I thought it was not working efficiently so now we are 7.

8.1.2 How did they come up with the idea?

I am majoring Electrical engineering, I had to take a course from Electrical engineering but I did not take it. Instead I took a course of Computer sciences – like Math course. Of course, after that I had to study the one for Electrical engineering by myself so it was when I looked for some online courses which could help me. But it was really expensive in Korea – roughly US\$700. At the same time there are a lot of people from SNU who could teach these courses. During 2012 in Korea the App stores were really popular and people were talking about how one man company - one developer could actually make a service /app. From there I thought that if there is a website where you could upload your video content-lectures a lot of teachers would try to do that. Basically teachers or anybody who wants to teach something could go there and just upload their educational content - that's why I call it platform. I thought it would be really nice to make that type of site. At that time MOOC was not that popular.

The team was formed in November/December 2011; I really thought it would be nice to build this website and that is how it all got started with my fellow students in my major.

8.1.3 *Who owns the company? Who owns the shares? In particular, what is the percentage in the hands of the founders and how much in the hands of financiers?*

There are 4 shareholders including me, one is a Venture Capital (VC) in Korea. Actually we were four partners but one left, so we are three now. The VC has 20%; they invested 200k at the time we just had started. By the time the VC invested in us we had not figured out the business yet, we were just forming the team. It was our first seed funding, it was a good first funding for a start-up.

8.1.4 *What types of shares do they own? Normal, preferential shares? Does the company also have some debt? If yes, is it normal debt or convertible debt?*

They have common stock, although usually Korean VCs prefer stock but at that time it was too early to make some decisions. When you invest as preferential stock usually you put a lot of conditions in the agreements but it was too early to negotiate any kind of conditions. I think that is why they invested in us with common stock.

Yes, I have US\$70,000 in debts.

8.1.5 *Who sits in the board of directors? Is the CEO also the president of the board of directors?*

We are three partners who manage the start-up. However whenever we have to make an important decision all the teammates are involved, they vote too.

8.1.6 *Who chooses the CEO of the company? Who (which institution) can replace the CEO?*

I am not sure because I am shareholder. I am the CEO and I own over 60% of the start-up. I think it is my job to say who can be CEO, etc. I am doing it by myself right now.

8.1.7 *Do the initial and subsequent agreements involve clear milestones? If yes, which are the milestones?*

As I already said, when we started and got invested, we did not have clear milestones or any real business plan.

The VC invested in us without any questions. This specific VC has a pattern of their investment. They just invest teams from top universities and they do not ask any questions. It is called Seoul Born and they are based in Korea. They don't care about business plan; they think if they invest enough money these guys will do well someday.

8.1.8 *Would they prefer to go to an IPO or to be acquired? What do they expect?*

As they invested in common stock, there are two ways to get their money back. One is IPO and another one is mergers and acquisitions. M&A rarely happen in Korea usually they expect IPO. I don't really have preference but if there is a company that could do the education business better than us, perhaps I would choose M&A.

As a platform there 4-5 companies in Korea, but we are doing the best at the market. If we consider the whole online education market, there is STN, they are SNU graduates started in 2010 who did very good marketing and they got invested US\$10 million. They are based offline mostly; they are acquiring huge educational companies since they have a lot of cash.

Maybe companies from the States there is company called *Udemy*, it started in 2010, and just few months ago they raised US\$67 million that was for expansion in Asian markets. So maybe if they had enough cash they would acquire us. Of course if there are no companies to acquire I would consider the IPO which is simpler.

8.1.9 *Did the government support them somehow? How?*

We got US\$120,000 of grants and about US\$80,000 in loans both from the government. In total I had US\$400,000. Most of the money that Korean VCs invest comes from the government, around 50-70%. The government gives money to this huge investment company called Korean Venture Capital Association (KVCA) and they make a lot of funds to VC, so basically it is the government who provides the money for startups.

A lot of Silicon Valley VCs are now interested and investing in Korea, because when the Korean Government makes funds there, they have this condition: They have to invest at least 70% of their fund into Korean companies and make them global. This is current the Government strategy. Basically the entire startup ecosystem comes from the government, they support us. It is not really mature market like in the Silicon Valley there are private corporations. In Korea we do not have a very old history of entrepreneurship because the oldest company is Samsung and it has been only 50 years.

8.1.10 *How long have their financial backers given them to become successful?*

They usually Korean VCs invest from the funds and normally you have to consider the limits when you invest from the funds. Usually, they have to take their money back in 3

years, so basically they invest in those companies they believe can make the money back for that period.

The VC that invested in Educast is different. They don't invest from funds but they invest from their equity. They do not care about the time it would take them to get their money back, they hope they would get the money 7-10 years. That allows them to invest in really early stage; that why Seoul Borne are famous for compared to other VCs. They take more risk but it pays off a lot more. We got US\$200,000 valuation when we started but a lot of VCs don't invest in this stage. They invest in later stage with 5 million or more. But this company invested from the beginning. I have heard 90% of the portfolio fails, but just from one of the company that has been successful bring them 60 times the money they have invested in one. They are still very successful.

8.1.11 What is their current financial status and profit or loss?

I still have US\$70,000 of loans but our monthly income is positive.

8.1.12 What's the five-year plan? Ten-year plan?

Actually, for several years I just want to grow in Education because even in Korea online education is a bit old topic - we started 15 years ago. We had the fastest internet infrastructure. Until 2010, Japan and the US could not do this streaming educational service because the streaming was much more expensive than just mailing educational DVDs. That is why there were companies that were doing this service offline, it was cheaper. I think the cost per traffic was 1\$ per gigabyte. In China, Japan and the US is a new topic, but in Korea is an old topic good sector. There was a billion dollar Korean company in online Education; nowadays they are not doing great. I believe there a lot of thing we could do in education, we could change a lot of things. For example, if we accumulate enough content in our platform, I am designing this adaptation system which recommends you what you have to learn right now based on your personal progress. I am doing my dissertation on this project. In my opinion there are a lot of problems that we could solve in educational market, for several years I will focus on this market.

But maybe other plans in the future it would be to go global, after three years. I started when I was second year in college when I first started I did not know anything about business, law, or anything. These three years, my team and I are ready to expand our service to Chinese market through some aggressive marketing. I don't think market of

US is a good market because density it is too low, it is really huge, from East to West coast of the States it takes 8 hours. However, in less than 3 hours flight from Seoul which is in really good geographical position in South East, you could go to some of the biggest cities in Asia – Tokyo, Shanghai, and Beijing. We have Japanese market I think Asia is in the center of the World Economy. Korean market combined with Japanese and Chinese ones would be more logical to approach the Asian and later on expand to the US market. China is now bigger market than the States and Asia is the Economic hub of the world. That is why I want to expand to Asia. Moreover, China, Taiwan, Japan and Korea have similar culture in Education system, it would be easier to understand them and localize our service.

8.1.13 What is top-management's experience and track record? What is the experience of your team, their background?

As I said I started with four of people from Engineering but now there are people from Business major. Actually, I do a lot of teaching on our platform. There are two business majors, and the other one is designer. We are hiring 4 people right now who will work as Content Producer. They will be contacting potential teachers, and make them to shoot their lectures. Educast is not for professor but for people who want to teach other people something. Our steady seller is a dog trainer, he called us first and said “I was about to write a book but I think people are not reading that much anymore, so I think it will be better with videos”. We helped him to shoot his videos and he is amazing. He got like US\$20,000 from the platform for a year which is good amount in my opinion. We take 30% for the platform.

I think it is better to keep under 10 people, when it reaches more than that number they get out of control. The hiring process should occur only when you see that the staff is 100% occupied at their work. Only in a situation like that you may hire more people but then you need a Middle manager. Usually a startup cannot get a skilled manager.

8.1.14 Who are the competitors and how well are they doing by comparison? What's the market like for their product or service?

There are 4 competitors that I identify as such. They are doing platform with a lot of categories which allows everybody to teach. We are the ones that are doing the best, even though we did not come out first. For example the Next one they have 1,000-3,000 students however they have had this business two years longer than us.

We have 20,000 students, it is really growing faster than we expected. What's the market like for their product or service? I am not worrying about competitors in Korea but the ones who are doing similar to one, with platform thing and anyone can teach.

8.1.15 Do you think go global would help you overcoming somebody coming from abroad?

Actually somebody coming from abroad that is why we really want to go global. In education content is really hard to come in to Korean market. We did 15 years of online education, we have this high standard and these technologies available, and there is no reason. SNS is global but education of content is not global. When you teach it in English not every Korean person would understand it. It won't be really easy to come to Korea. I think going global is not about preventing that kind of competition but for expanding our market just for scale for our company. But still if there would be competitor I think it would come from States or another country. We still have Naver, we have our social e-commerce.

8.2 Interview 2 – PRND

Hyun Ik Jang is a student from Seoul National University and one of the teammates of the startup PRND. They are trying to solve the problem of getting reasonable price for second hand cars on the market. They are providing their application for iOS and Android users. They are leading the change in the car industry.

8.2.1 *What do you do? What is the core business plan? How many people form the team?*

I am working with a startup called PRND. Our team wants to change rules in the used car market. The core business plan is to make people use our app when they want to sell their cars. Something to add here as description of what you provide?

Let's say you have a car. You have used it for 5 years. Now, you want to sell it and buy a new one. The question is "how are you going to sell it?" Our dealer app gives you the solution. You can upload your car details (name, miles driven, manufacture year etc.) and for 2 days dealers bid anonymously. And the one who bid the highest gets the car. This way, customer can achieve highest price rather than getting ripped off.

The team is formed by 10 people. We have a CEO, a CTO, a Designer, three Sales people, three Marketing people and a dealer.

8.2.2 *How did they come up with the idea?*

Our CEO and CTO have always had interest in cars. They thought that since they have interest in this sector, if they ever make a company, it should be related to cars. First, they worked as a dealer for 6 month together. After these months, they knew that people usually do not get reasonable prices when they sell their car due to lack of knowledge in cars market.

8.2.3 *Who owns the company? Who owns the shares? In particular, what is the percentage in the hands of the founders and how much in the hands of financiers?*

CEO owns 60%, CTO 20%, the other 7 teammates own 10% and I own 10% of the company. The percentage in hands of investors is confidential since we got money from angel.

8.2.4 *What types of shares do they own? Normal, preferential shares? Does the company also has some debt? If yes, is it normal debt or convertible debt?*

All shares are normal. We do not have any debt. Invested money is not a convertible debt.

8.2.5 *Who seats in the board of directors? Is the CEO also the president of the board of directors?*

The seats at the board of directors are formed by all the founders which are four in total and also the angel investor. The CEO is the president of the board of directors.

8.2.6 *Who chooses the CEO of the company? Who (which institution) can replace the CEO?*

Normally, it is the board's responsibility to choose the CEO. However, since 50% above is consisted with founders so CEO will be CEO after all. There is no institution or person who could replace the CEO.

8.2.7 *Do the initial and subsequent agreements involve clear milestones? If yes, which are the milestones?*

They required some figures but did not require a designated scheme. Of course if we want to make series of investment we have to show a certain level of transaction figure. And also break-even point should be achieved.

Well I think we don't have any of milestone related agreements

8.2.8 *Would they prefer to go to an IPO or to be acquired? What do they expect?*

Perfectly, the best for us would be an IPO. However, due to the fact that our market size is not that big, we consider M&A with a higher possibility of being acquired by other company.

8.2.9 *Did the government support them somehow?*

We did not receive any direct funding from the government. In my opinion, there is plenty of support system which could be in the form of financial support or services. Nevertheless, it is not very useful because it is usually for high tech startups or either has lots of additional conditions like lots of paperwork, etc.

One of the government programs – TIPS. It gives a lot of money but again this is for high tech startups. We are an IT tech startup since we use app and u big data for price estimating system. However these two are not enough for defining us as 'high' tech.

8.2.10 How much financial backing do they have and by whom?

The total amount that we have is of 160,000,000 KRW. One part or exactly 10,000,000 KRW is directly coming from the founders. The other part is funding from the angel investor with amount of 150,000,000 KRW.

8.2.11 How long have their financial backers given them to become successful?

The angel investor has not put as any condition or time limit for our startups to get the their investment back or become successful.

8.2.12 How do the financial backers define success?

The angel investor defines success as our startup being acquired. They do not like or hope for the idea of going IPO.

8.2.13 What is their current financial status and profit or loss?

I could state that we are still not above the Break-even point. On the one hand, we do not have selling and administrative expenses. But on the other hand, we only have labor cost.

Our monthly profit is around 6,000,000 KRW

8.2.14 What's the five-year plan? Ten-year plan?

Unfortunately, we do not have any five or ten year plans due to the permanent change our startup is facing every single month.

8.2.15 What is top-management's experience and track record?

They have been in the car industry as a dealer for 6 months as we already mentioned. Two of them worked for Education startup as a PM? for 1 year

8.2.16 Who are the competitors and how well are they doing by comparison?

Our competitors are 첫차옥션, 바이카. 바이카 . They are doing about 1.5x better that our service?

8.2.17 What benefits do they offer, including vesting time for stock options?

Vesting option is 3year. Stock option is open to 10% of its previous stock

8.2.18 How many startup programs do you know and could you tell us more about them?

One of the most famous is TIPS. It gives lot of money, and this is the one that government pushed as their “창조경제” movement.

Another one is 투자연계멘토링 which is more or less famous. It provides the startup with some funding.

Also there are some supporting institutions about accounting, law, marketing but they are not very useful since what most of the startups need is financial resources. All these are from the government and public, although the latter is more useful for startup. Because as usual, it is more realistic and gives us what we need not like government.

8.2.19 What do you think has to improve of the Korean Start-up environment?

The Korean government has to make an environment easily accessible for challenges of startups idea. They have to be respected in Korea which is an inflexible country and consisted of many inflexible people too. With these two, respect and money, many Koreans who are very smart would run for it. In my opinion, startup in Korea is considered very dangerous and unworthy thing to do among the young population.

8.3 Interview 3 - Company RedCloud (CRC)

CRC is a startup idea created by Jae Yoon Lee who is a student from one of the leading Korean higher education institutions – Seoul National University. Lately, he and his friend have started working on a startup idea which is a unique service for smartphones with Android operational system. The idea behind is to reduce the car accident while people are walking and using their smartphones on the street. For the solution of this problem that occurred to Jae Yoon, they will use big public data to create this service. There are in a process of patenting this innovative idea. Due to their initial phase or the so called seed stage of the startup some questions have been adjusted for the interview.

8.3.1 What do you do? What is the core business plan? How many people form the team?

Currently, a friend and I are preparing a startup. Well, now I am still on the semester so we have not started actually yet, but I have two ideas. One is preventing traffic accident by using smartphones while walking. And the other is a platform for real estate rental. I would like to start with 4~5 people so I am still forming my team.

8.3.2 How did they come up with the idea?

The first idea came from the news, when I was observing all the traffic accidents. Nowadays using smartphone while walking is becoming a big problem in our society. So I thought we could solve the problem by using big data of traffic accidents congestion.

And the other idea came from my personal experience. I found my house on the internet twice and found out that there is no service for sublease.

8.3.3 Who owns the company? Who owns the shares? In particular, what is the percentage in the hands of the founders and how much in the hands of financiers?

The CEO has more than 70% and the other co-founder owns the rest – 30%.

8.3.4 What types of shares do they own? Normal, preferential shares? Does the company also has some debt? If yes, is it normal debt or convertible debt?

It will be normal shares and I don't want to get some debt.

8.3.5 Who seats in the board of directors? Is the CEO also the president of the board of directors?

Yes, because we are small team.

8.3.6 *Who chooses the CEO of the company? Who (which institution) can replace the CEO?*

Usually it is the director of the team who gave the idea at first.

8.3.7 *Do the initial and subsequent agreements involve clear milestones? If yes, which are the milestones?*

We do not have clear milestones yet.

8.3.8 *Would they prefer to go to an IPO or to be acquired? What do they expect?*

Even though we are still not in a stage where we could determine this, we think we would be more interested in being acquired by another big company.

8.3.9 *Did the government support them somehow? How?*

Nowadays, there are so many government support programs. They hold some competitions and provide government fund(with plenty paper works to be filled out) and free spaces for startup offices.

8.3.10 *How much financial backing do they have and by whom?*

The government has many kinds of institutions for startup. For example, Ministry of Science, ICT and Future Planning is one of the big government institutions for supporting startups. Government funding is between \$20,000~\$80,000 at once.

8.3.11 *How long have their financial backers given them to become successful?*

They usually support startups that has been no more than 3 years. The supporting goes about 5~10 months.

8.3.12 *How do the financial backers define success?*

Apparently, there are many investors or even the government does not care that much about the startup's success.

8.3.13 *What's the five-year plan? Ten-year plan?*

We are not sure yet since we have not dedicated that much time lately due to our lectures at university.

8.3.14 How many programs for startups do you know and could you tell us more about them? Are they private or governmental programs?

There are not private programs for startups by government. All governmental programs are open. They have idea competitions, funding and incubating programs. Nowadays, there are a lot of programs. I think this is the time for startups although some people criticize it. Main critiques come from the fact that there are too much spending on.

Specially this year, they started to provide incubating + funding program much more than last year. Few programs are open for any type of businesses, and few is only for Fin-techs or Data-startups.

8.3.15 How would you describe Korean Start-up environment? What do you think has to improve of the Korean Start-up environment?

The one thing I know is the government really cares startups. So they are trying to create the atmosphere for starting a startup. Therefore many people are thinking to start or work for startup; that means that the government plans are working somehow! But I think there are too much of money for supporting startups. Sometimes the money goes to bad startups or people so there is waste of money. The government need to focus on more to decide the startups that are going get the funds.