

## The Fourth Industrial Revolution Age: Revisiting Entrepreneurship and Start-ups

Upon the arrival of the Fourth Industrial Revolution, a variety of issues arise. Perhaps one of the most important is to revisit entrepreneurship and start-ups. In other words, they should be redefined. Start-up business opportunities along with research on entrepreneurship should follow.

Business activities could be viewed as an integration between technological innovation and market efficiency. They allow products and services to be developed and distributed to end-consumers through the market. The main point is how new innovations based on new goods, new markets and new technologies can be successful in the market. Entrepreneurship contributes to the success of new business and innovative services. This is why innovative leadership that reinvigorates companies is referred to entrepreneurship (Lee, 2016).

Aileen Lee, a woman venture investor, originally referred a “unicorn” for a start-up whose corporate value exceeds a billion dollars. This is because although there are many start-ups, a huge success is a rarity. As the number of unicorns increased later, Bloomsburg, the US media group, started to call a start-up whose corporate value is worth more than US \$10bn a “decacorn”. The decacorn is an imaginary animal having ten horns. It means that they are rarer than unicorns.

In total, 174 companies were unicorns in 2016, according to *Fortune*, the US economy magazine; among them, 35 were Chinese companies. Uber, ranked as the first, showed capital assets worth US\$62bn, followed by Xiaomi, ranked second, worth US\$46bn. In 2015, there were 15 unicorn businesses in the Asia-Pacific area; among them, 10 were Chinese companies. Unicorns rapidly increase in numbers (Fortune, 2016): 221 companies have been identified as unicorns in 2017 (TechCrunch, 2017).

The representative new technology start-ups include Apple, Microsoft, Facebook and Amazon. The emergence of start-ups leading markets with innovative technologies appropriate with the arrival of the Fourth Industrial Revolution draws attention.

Innovative examples in manufacturing include an innovator in an electric automobile market Tessler and DJI in China. As for the ones with a grand platform, Instagram and WeChat are the instances using the “new” merge and acquisition (as known as M&A) strategy that acquires innovation. Consumer-related fields such as distribution and sharing or cooperation economy are examples for new start-ups. In distribution-related fields, unicorn companies include online market Etsy, and also Alibaba, a grand commercial platform in China. There are services such as Airbnb or Lyft, familiar to us, in the sharing economy. You can identify new start-ups in vertical markets such as other technology infrastructure, Fintech, health care and clean tech, as well as a rapidly growing Internet of Things (IoT) market.



Phillippe Cases, the CEO of Spoke, said that unicorn enterprises, as start-ups growing at an alarming rate, “exists in general technology-related fields” (Frier and Newcomer, 2015). IoT companies include Nest (recently acquired by Google), DJI (specialized in drones) and Jasper, developing unmanned automobile technology. The emergence of start-ups is limitless.

Decacorn enterprises include Workday (specialized in personnel management application software), Dropbox (content management or sharing work tool), Palantir in e-ter (analytics or business intelligence) and Palo Alto Networks (security solution). In Fintech, there is a loan platform, Lufax. In IoT, there are DJI, SpaceX and Xiaomi, which sells household appliances. Also, there are Flipkart (online shopping service), WhatsApp (messenger service) and social media services such as Snapchat, Pinterest, Twitter, Facebook and LinkedIn. Finally, new decacorn start-ups such as Airbnb, Uber, DidiChuxing and Wework in the shared economy are growing.

Incumbents require dramatic innovation as company strategies at the emergence of the Fourth Industrial Revolution. Incremental innovation by internal competencies has been effective so far. It is in the era of disruptive innovation. Businesses cannot simply be disruptive internally. The integration of open innovation, open platform and internal venture is the only countermeasure for the disruptive innovation. In this regard, companies should attain entrepreneurship and business culture that are indispensable to convert efficiency into innovation, particularly disruptive innovation.

The remark by CISCO president John Chambers “Now all companies should think like start-ups” announces the advent of the disruptive innovation era.

Then what is “disruptive innovation culture” based on start-up spirit? It may be summarized into four words, open, share, cooperation and ecosystem. Why does Google reveal source codes of AlphaGo? Ninety-five per cent of Silicon Valley software is open source. Technology cooperation can be accomplished rapidly and cheaply when opened. We have to participate and practice a variety of open innovation movements under the principles of “open and share”.

The Fourth Industrial Revolution, where innovation and efficiency are cycling, means we are living in the era of start-ups. Case studies on innovative start-ups focusing on the direction of start-up research and entrepreneurship apt for this era are well-anticipated.

Finally, the *APJIE* Desk is happy to invite two more editorial board members, Professor Soo Hyun Jun of the Department of Tourism Management and Professor Seok Min Kang of the Department of Management at Keimyung University. The *APJIE* Desk is also proud to call for papers for the special issue on Korea Blockchain Standardization Forum and World Fintech Forum presenting “Blockchain on Business and Entrepreneurship (BoBE) 2017” for the *APJIE* Volume 11, No. 3, to be published in December 2017.

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**Further reading**

- Lee, A. (2013), "Welcome to the unicorn club: learning from billion-dollar startups", 2 November, available at: <https://techcrunch.com/2013/11/02/welcome-to-the-unicorn-club>