

An Innovative Taipei with Vigorous Development of Emerging Technologies

Source: Industry, Science and Technology International Strategy Center, ITRI (10/2019)

Five trends of emerging technologies: Speech Interface, Health Innovation, Blockchain Application, Sports Equipment IoT, and Food Innovation

In the future, emerging technologies will be affected by the five trends, including the rapid development of the speech interface technology (in 2019 CES, major players launched speech-related applications which means that speech becomes the new input interface for smart devices), the rapidly increasing demand of health innovations (as medical expenses are on the rise, the industries in the public and private sectors have been committed to health prevention innovations to reduce medical costs), the innovative applications of blockchain which are springing up (the blockchain is being applied in a wide variety of ways in the finance and supply chain sectors; despite its infinite potential, it is far from being applied on a large-scale), IoT of sports equipment caused by sports habits (the application of sports technology is affected by the IoT technology so that start-ups invent social sports applications which are popular in the market), and food innovations becoming the new investment target (because information and communication firms fiercely compete for investment, start-up capital starts to invest in other technical fields, and food is one of them).

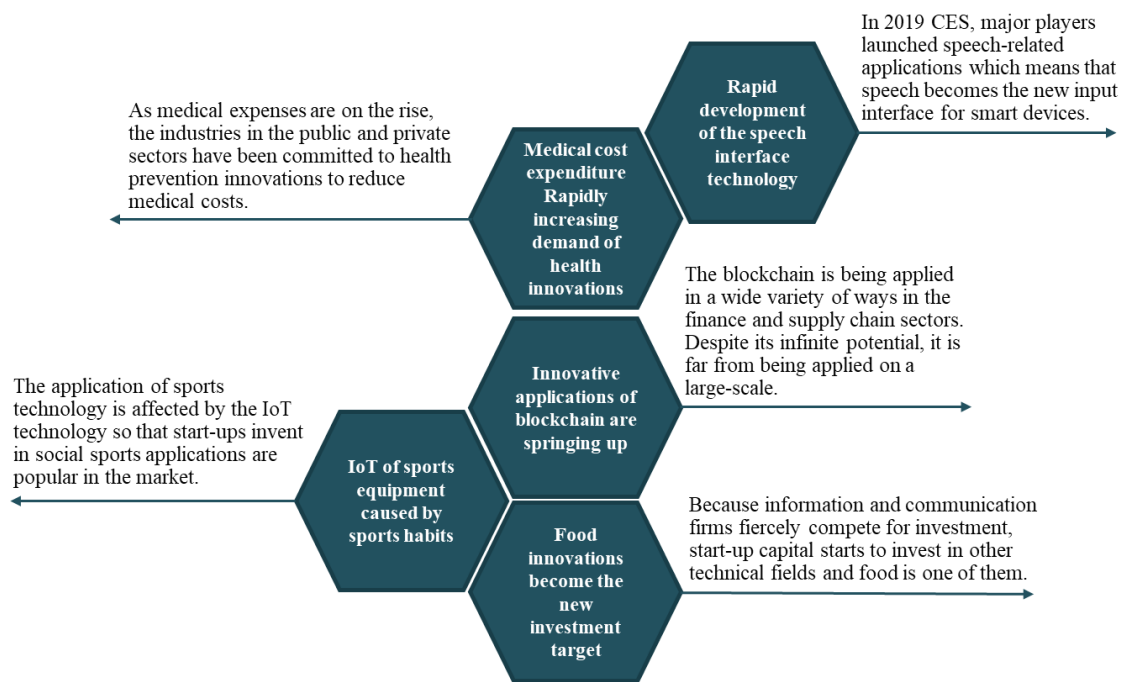


Figure 1 Five Trends of Emerging Technologies

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For the rapid development of the speech interface technology, Tractica estimated that the VDA (Virtual Digital Assistant) users will grow from 390 million in 2015 to 1.8 billion worldwide by the end of 2021. Speech will become the new generation of the input interface and application portal.

For the rapidly increasing demand of health innovations, according to UN statistics, in 2017, persons aged 60 or over are about 662 million and account for just over 13% of the world’s inhabitants; however, this age group is growing at 3% per annum. By 2025, the number of people aged 60 or over will be 1.2 billion and account for just over 15% of the world’s inhabitants. In 2015, US-based Kaiser Family Foundation conducted an analysis of the US-wide health expenditure and classified the consumers into several age groups. While persons aged 65 or over only account for 15%, the health expenditure of this group accounts for

34% which is the highest among the six groups. The population aged 64-55 accounts for about 13% while its health expenditure accounts for 23%.

The innovative applications of blockchain are springing up. Gartner believes that the blockchain is a relatively advanced technology and its applications are getting more and more diverse. It is expected to start growing since 2023 and receive great amount of investment with many successful modes. It will demonstrate its growth of the market value since 2027.

For food innovation, which will become the new investment target, according to the data from foodtechconnect.com, 2017 saw US\$ 1 billion in venture capital invested across 99 deals in the field of food technology. This is an 87.5% increase from the 66 deals of startup investment in US in 2016. The largest check size of the year was for US\$ 190 million with an average check size of US\$ 10.9 million. For IoT of sports equipment which is caused by sports habits, as the IoT technology is popular with emerging awareness of physical exercise, sports equipment tends to be equipped with the IoT technology. According to the report “Disruptors of Sports: Smart Sports Equipment” published by Fung Global Retail & Technology, smart sports equipment is expected to account for around 7.5% of total sports equipment market by 2020, up from an estimated 2.9% in 2015. Among them, the smart sports coaching platform and sports fitness tracker enjoy the fastest growth rate.

The emerging technologies and startup have become the new mainstream in Taiwan. The Asia Silicon Valley Development Agency (ASVDA) and Forward-looking Infrastructure Development Program help build pilot zones in every corner in Taiwan

In the past, the public relied on themselves to develop emerging technologies and start a new company. While the central government and its ministries have promoted the incubation policy since 1997 and

established more than 130 national innovation and incubation centers in Taiwan with about NT\$ 3.1 billion investment, there are some issues, such as incomprehensive laws, regulations, as well as systems, insufficient capital for expansion of start-ups at early stage, insufficient international linkage, and inability to stay at cutting edge of market trends. While startups and incubation are becoming popular and actively promoted across the world, Taiwan has promoted the Asia Silicon Valley Development Agency with the efforts from the public and private sectors to create a startup ecosystem. Among them, the Asia Silicon Valley Development Agency (ASVDA) and Forward-looking Infrastructure Development Program have promoted smart city and town services which encourage companies to develop smart solutions with pilot zones in Taiwan. To dates, 167 proposals have been reviewed and approved with 35 proposals approved in Taipei.

From the viewpoint of emerging technology development, it can be observed that we are in an era of “Discontinuous Innovation” (the existing winners may not be the winner of new technologies in the future). Therefore, it is difficult for the government to establish perfect laws and regulations and startup policies. However, what we can do is to think how to offer incentives which attract foreign talents to join into Taipei City’s ecosystem of emerging technologies. For the digital economy, “people” are the truly innovative vehicles and play an important role in providing solutions to the era. Good talents collaborate to create value.

The living behaviors of Taipei City dwellers are favorable for the establishment of pilot zones for emerging technologies

For industries of emerging technologies, Taipei City government’s strategic thoughts on expanding emerging technologies should focus on attraction of foreign investment and business activities. Our suggestions include the following:

Provide services which connect with the pilot zones of startups: Taipei City has an exceptionally gifted environment with the most lead users and most comprehensive pilot zones. Therefore, it is the administrative district with the highest number of pilot projects by startups. With these advantages, it can provide relevant services for startups or testing services for emerging technologies. For example, it can help the public search for pilot zones or witness the signing of a pilot zone contract. It is recommended to take advantage of the fields of living habits which are favorable in Taipei City, including the commute, sports, entertainment, and healthcare.

Another example is that the Taipei City Hospital is able to provide an experimental zone for the healthcare startups under the condition of guaranteeing the right of patients. This experimental zone allows startups to test and modify their own product/service/platform accessibly, which is essential for startups' fund raising.

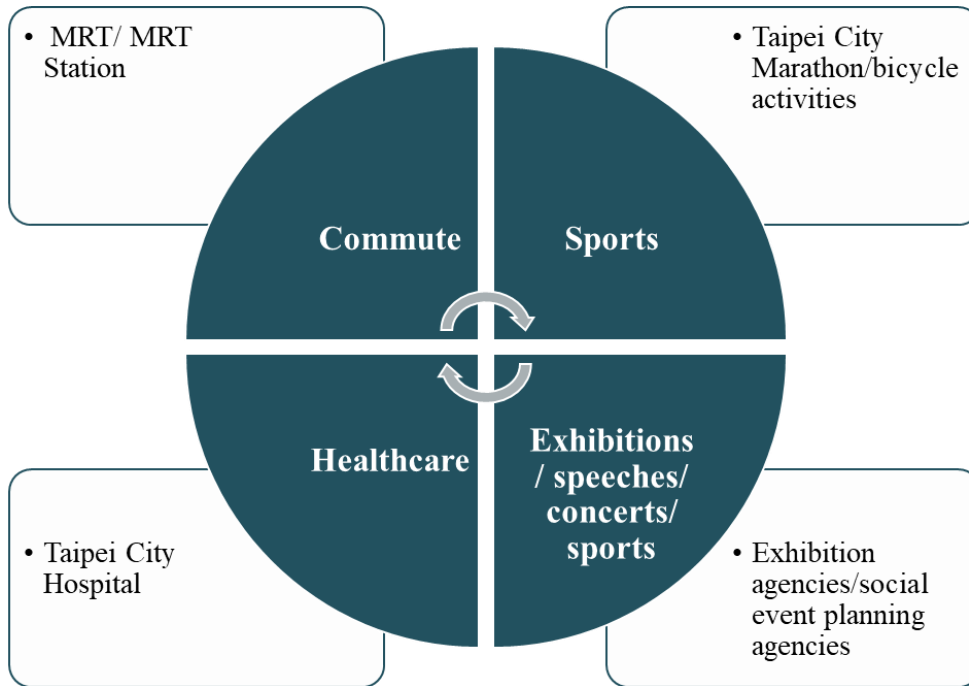


Figure 2 The living behaviors of Taipei City dwellers are favorable for the establishment of pilot zones for emerging technologies

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Provide a fund raising platform for start-ups: The key to survival of a startup ecosystem is not technology but fund raising. Fund raising needs a pitch. Taipei City has the highest number of exhibition halls and discussion locations, and the most convenient public transportation network in Taiwan. No other city in Taiwan is competent to provide a fund raising environment, such as the one which is suitable for emerging technology pitch. Pitch is one of the method of fund raising, which is built on the distinctive hard and soft capacities. Taipei City will work on establishing this kind of distinctive capacities in order to improve the match between startups and venture capitals.