

# Fubon Group (Taiwan)

## Forming a Mobile Phone-based Information System to Prevent Community Outbreaks

January 2021



# Extraordinary Endeavors in Turbulent Times: Asian Innovation, Inclusion, and Impact during COVID-19

A Joint Report by the Asia Business Council and the  
Hong Kong University of Science and Technology

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Recommitting to a Broad Stakeholder Eco-system during the Pandemic

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Accelerating Financial Inclusion in a Time of Social Distancing

## Letter from the Directors

Dear Reader,

As the directors of this joint project by the Asia Business Council and the Hong Kong University of Science and Technology (HKUST), we are delighted to present the results of our study on the extraordinary endeavors of Asian companies in the turbulent times of COVID-19, as companies embrace innovation, promote inclusion, and drive social and economic impact across the region.

We hope that this series of eight case studies will illustrate the silver linings of the pandemic – in these trying times companies are more than ever realizing the importance of social responsibility, reimagining and reinventing traditional forms of philanthropy, and leveraging technology as a force for good in ways that will likely last well beyond the crisis.

While the articles are written with business leaders and business students in mind, the stories we tell have relevance for a wider audience as they show how Asian corporates took the lead in engaging a broad eco-system, including governments, academic institutions, religious groups, and the public health sector, in addition to start-ups, small and medium enterprises, and even competitor companies within the private sector.

True to the times of COVID-19, the smooth collaboration between our two organizations took place without any face-to-face meetings; all the research and interviews were conducted virtually and across multiple time zones. We are especially grateful to Asia Business Council Chairman Lim Boon Heng and Vice-chairman Daniel Tsai whose companies Temasek and Fubon Group were the first two companies to take part in the study. We would also like to thank the unfailing support of Mark Clifford, Executive Director of the Asia Business Council, and Roger King, Senior Advisor and Founding Director of the Tanoto Center at HKUST, without whom we could not have completed the project.

Amidst the continued risk and uncertainty surrounding the pandemic, we hope that this report will contribute to the ongoing discussions on stakeholder capitalism and the debates on the role of companies in the local and international community, in times of crisis as well as times of relative normalcy. Above all, we hope that you will enjoy reading the articles as much as we enjoyed writing them, and that the report will be a source of positivity and inspiration for audiences around the world.



**Winnie Peng**

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**Pauline Yeung**

*Program Director at the Asia Business Council*

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# Forming a Mobile Phone-based Information System to Prevent Community Outbreaks

By Winnie Peng, Pauline Yeung, and Chun Hei Hung

## Fubon Group

### Region

Taiwan

### Year of Founding

1961

### Headquarters

Taipei

### Type of Company

Listed companies under Fubon Group include Fubon Financial Holdings, Taiwan Mobile, and momo.com Inc.

### Number of Employees (2019)

68,000

### Total Revenue in 2019

NTD 624.2 billion (US\$20.6 billion)

### Total Net Profit in 2019

NTD 72.4 billion (US\$2.39 billion)

### Major Businesses

Financial Services, Telecommunications, Media Services, among others

### COVID-19 Initiatives in a Nutshell

Mobile Phone-based Information System To Prevent Community Outbreaks; Insurance Plans for Notifiable Diseases; Free Digital Entertainment for People under Quarantine; Free Internet Services for Students Attending School Remotely

Note: Total Revenue and Total Net Profit are summation of the three listed companies under Fubon Group.

The following case study is based on written correspondence with Fubon Group in September 2020, and an interview with Jamie Lin, President of Taiwan Mobile, on September 28, 2020.

## Introduction

On October 29, 2020, the international media was abuzz with reports on how Taiwan had managed to mark 200 days without a locally transmitted COVID-19 case, making the island a success story in the fight against the coronavirus.<sup>1</sup>

Experts and academics have offered various reasons for Taiwan's feat. First, Taiwan's painful experience in dealing with the SARS crisis in 2003 led to the creation of a legal and institutional framework for containing outbreaks of infectious diseases in the future.<sup>2</sup> The SARS outbreak also resulted in a cohort of "veteran professionals" in key positions in the government who held a vigilant attitude toward novel diseases.<sup>3</sup>

Second, the early activation of Taiwan's Central Epidemic Command Center (CECC) on January 20 and the decision to upgrade its authority to the highest level of government agency on February 27 enabled a "single-line of command" in "coordinating and mobilizing all sectors" to control the pandemic.<sup>4</sup>

Third, Taiwan was able to garner private sector support, both to ramp up mask production within a short period of time, and to create the Intelligent Electronic Fences System (IEFS), a real-time mobile phone-based information system that monitors Taiwan's entire quarantined population and individuals with whom they may come into contact.<sup>5</sup> While the former involved raw material providers and manufacturers of face masks, the latter involved the five major telecom carriers in Taiwan.

Jamie Lin, President of Taiwan Mobile, the telecom arm of Fubon Group, recalls the very meeting where the government met with relevant industry leaders to brainstorm ideas on

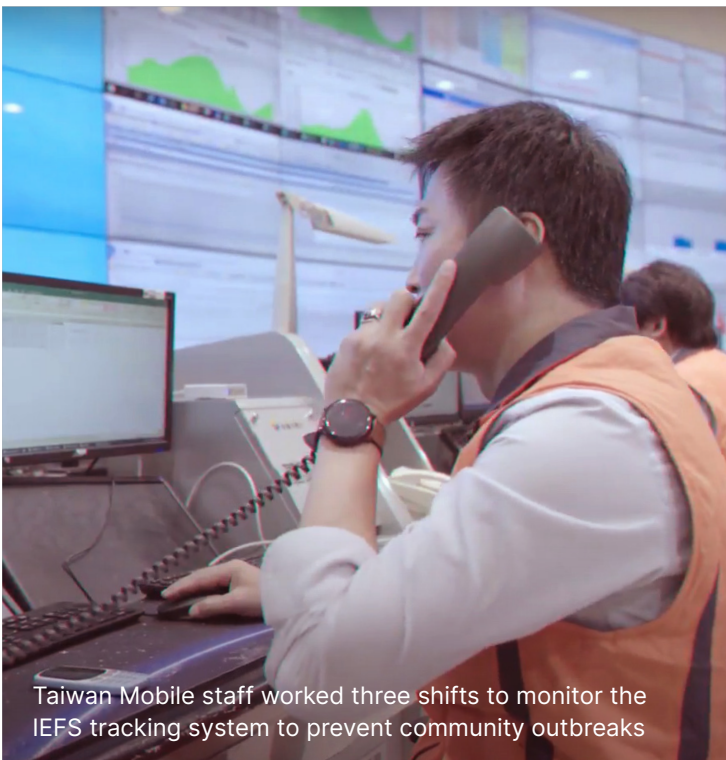


how they could best contribute to containing the pandemic. It led to the creation of a “team Taiwan” which worked to increase the local production of face masks eightfold within three months to 16 million per day,<sup>6</sup> and the formation of the IEFS, which proved to be highly effective during the pandemic.

## The Intelligent Electronic Fences System (IEFS)

When asked about the IEFS, Lin notes at the outset that the IEFS was a collaborative effort – between the Taiwan Centers for Disease Control (CDC), the official agency that combats the threat of communicable diseases in Taiwan, and the five largest local telecoms companies – and that no one actor can take all the credit.

Lin explained that the collaboration among the telecom carriers was “natural” because they were used to working with each other. “In a small place like Taiwan, it is impossible for five carriers to build five separate sets of infrastructures, so half of our infrastructure is actually shared. The companies worked very closely with the government, and I am proud of how our firm and the industry as a whole contributed to the containment effort.”



Taiwan Mobile staff worked three shifts to monitor the IEFS tracking system to prevent community outbreaks

In terms of the division of labor, each telecom company was responsible for monitoring their own customers who needed to be quarantined and were using SIM cards from their companies. The government, on the other hand, operated an aggregated platform that monitored all subjects.

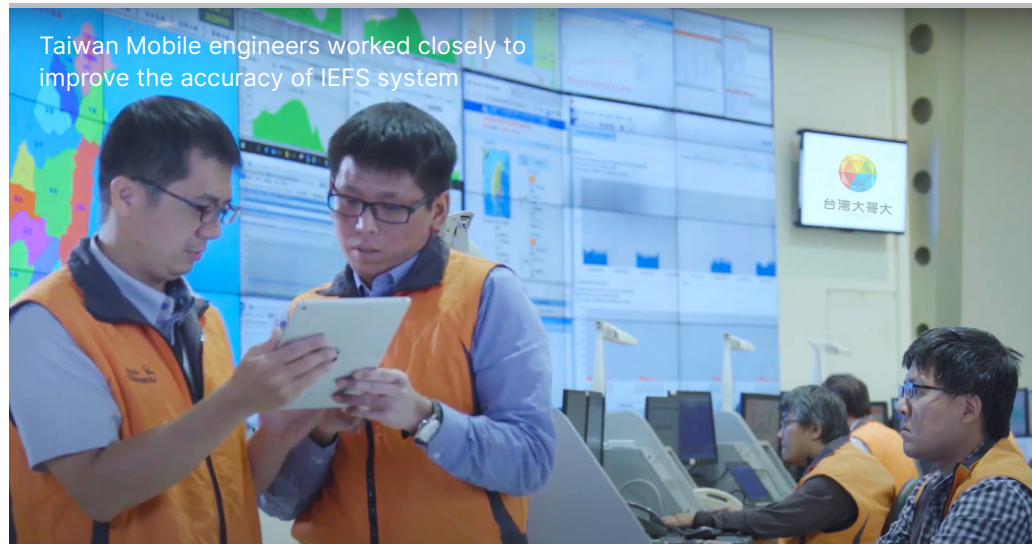
For Taiwan Mobile, and for the other carriers, the monitoring process began whenever someone registered with the CDC. Once the individual arrived at the location where he or she was supposed to be quarantined, they would send him or her a welcome message with official information detailing what the individual had to know.

Simultaneously, the carrier would send a message to local officials so that they could send someone to pay a visit to those

quarantined in order to ensure that they were complying with regulations, and also to give people a point of contact if they needed help from the government.

From then on, the telecom companies would monitor the subject for 14 days. If all went well, then the companies were responsible for notifying the subjects that their quarantine periods had ended.

At Taiwan Mobile, around 20 to 30 of its employees worked closely on IEFS, while close to a thousand people worked on it on a more extended basis, since engineers were needed to make sure that all of the cell towers, which were used to locate individuals, were functioning as expected.



## Utilizing “Blocks” of 200 Meters by 200 Meters

One of the unique features of the IEFS is the lower precision in tracking a subject’s whereabouts because it utilizes “blocks” rather than the Global Positioning System (GPS). Lin contends that this raises fewer privacy concerns and results in higher effectiveness. “The system works by dividing cities into 200 by 200 meter ‘blocks’ and locating each subject within a block by triangulating their position using nearby cell towers,” Lin explained.

“Whenever the subject, or more specifically, his or her phone, leaves the block, the local authorities are notified. This way of tracking a subject’s location is less precise because no alarm is raised so long as the subject stays within the ‘block,’” he continued.

Since any given subject will not know the exact boundaries of the “block,” which also means that they do not know how far they can travel before the authorities are notified, Lin believes that fewer people will take the risk. It also appeared unlikely that people would want to leave their house without their phone. Finally, Lin says, “We trust that the Taiwanese people will comply with the law, even if they are aware that loopholes exist.”

Having said that, in a scenario where a subject is detected to be outside his or her “block,” the telecom carrier would notify both central and local government officials, who would send representatives to check up on the individual. And if the suspicions were confirmed, the carrier would send the subject’s rough locational data to the government so that they could track him or her down and make the individual return to the quarantine site.

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While the IEFS does raise privacy concerns, Lin sees this as a judgement call about the relative weighting assigned to health and privacy within a particular society. In the words of Lin, “Once you have this, you need to choose the right technology to do it; for us, using cell towers to triangulate a person’s position struck the right balance between respecting privacy and promoting public health. In contrast to Hong Kong’s tracking bracelets, the IEFS system allows for greater privacy as it does not collect data on people’s exact locations. Moreover, relative to both Hong Kong and mainland China, Taiwan’s solution is actually much cheaper. We will not be adopting any bracelet-based solution in the foreseeable future, as many Taiwanese people would feel that it is too much.”

## Containing a Possible Outbreak from the Diamond Princess Cruise Ship

One of the major accomplishments of the IEFS was the containment of a major crisis involving the Diamond Princess cruise ship. On February 5, 2020, an outbreak of COVID-19 was reported on the Diamond Princess, which had docked at Keelung harbor on January 31, so that passengers could have a one-day excursion in Taiwan.<sup>7</sup> In order to trace the potential exposure to the virus, Taiwan authorities sought the help of the five local telecom carriers, including Taiwan Mobile.

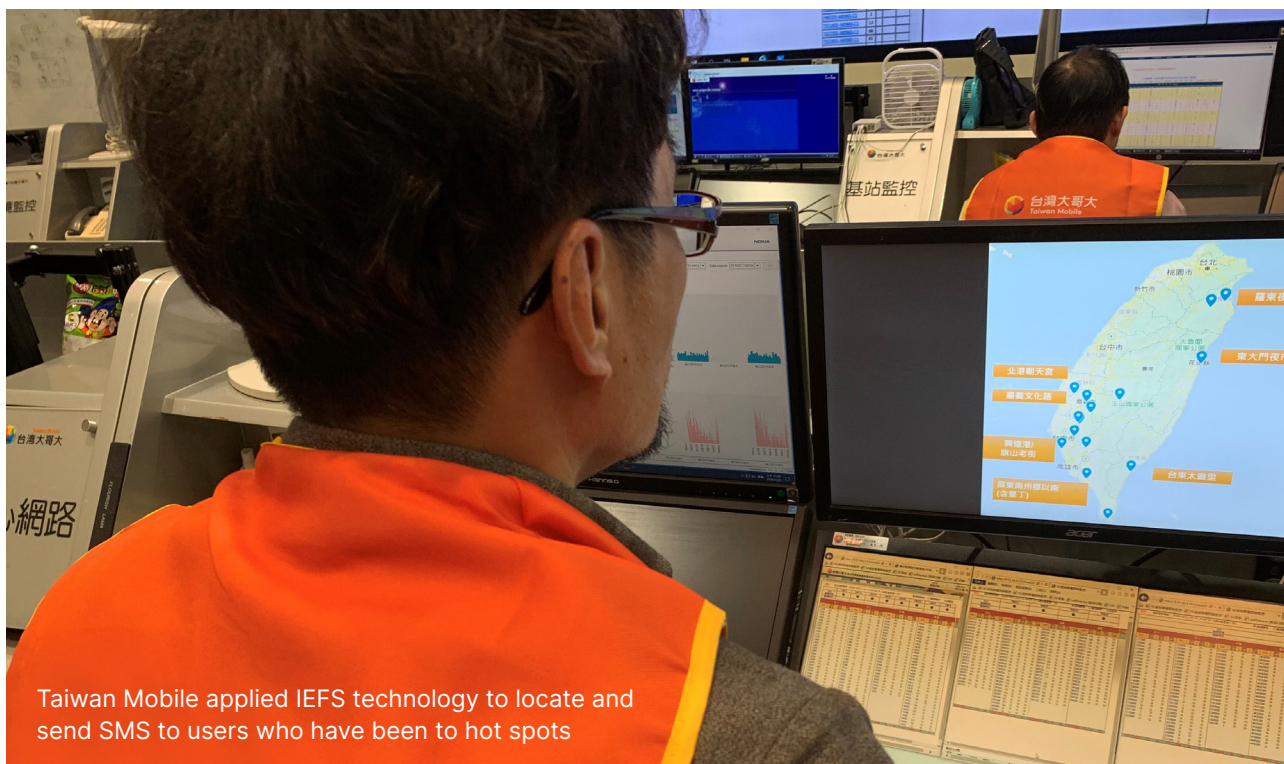
Lin opined, “...In a small place like Taiwan, it is impossible for five carriers to build five separate sets of infrastructures, so half of our infrastructure is actually shared. The companies worked very closely with the government and I am proud of how our firm and the industry as a whole contributed to the containment effort.”

After identifying the mobile phone numbers of the passengers, it was possible to find the rough locations of the phones and the phones’ users.<sup>8</sup> With the help of the local government, it was found that 34 percent of the passengers took shuttle buses for local tours, 5.2 percent took taxis, and the rest biked or stayed near the harbor area.<sup>9</sup>

The Taiwan authorities then proceeded to identify individuals in Taiwan who had stayed more than 5 minutes and within 500 meters of the locations that the passengers of the Diamond Princess had travelled to.<sup>10</sup> These individuals who were at risk were advised to self-quarantine at home, monitor their health, and refrain from public gatherings.<sup>11</sup>

Similarly, in another incident, 36 navy sailors who had returned to Taiwan after an overseas mission were found to have been infected with COVID-19.<sup>12</sup> Again, the IEFS was used to track the travel routes of the sailors, who had visited family and friends in multiple cities.<sup>13</sup> Warning messages were sent to individuals who had potentially been in contact with them, and a community outbreak was prevented.





## Crisis Management and Digitalization

While the IEFS was an external project that helped prevent virus outbreaks in the community, Taiwan Mobile itself demonstrated agility and foresight in its response to the crisis. The management team began discussions on how it could best respond to the pandemic in late January, before Chinese New Year, and this allowed them to get a head-start on stockpiling masks and planning response measures before employees went home for the holidays.

After the holidays, Taiwan Mobile became one of the first companies in Taiwan to ask employees who had visited popular tourist locations to stay home for 14 days. At the same time, the company quickly implemented measures to protect its customers by providing hand sanitizers in offline stores.

One strategic initiative was the segregation of company employees into an A team and a B team. The same function was split across two teams so that, if a member of one team became infected with the virus, the other could act as a back-up. This arrangement lasted for six months.

In addition, the company swiftly implemented remote working and meeting initiatives. Although this way of working was initially unfamiliar to the employees, they were able to adjust to the new norm within a month, learning how to conduct efficient meetings online. With many meetings remaining online, Lin thinks Taiwan Mobile's DNA has changed for good as it has accelerated the company's digitalization.



Indeed, aside from taking part in the IEFS, Taiwan Mobile's response to COVID-19 has included offering free digital entertainment for people under quarantine and free internet services to students who were learning from home. For the former, streaming services were offered to tens of thousands of people in quarantine or self-isolation, through myVideo, or Taiwan's Netflix, and myMusic, which is Taiwan's Spotify. Lin is also particularly proud of the 15 days of free internet services provided to students attending school remotely. This was especially impactful for underprivileged students who might not otherwise have had access to the internet.

## Future Outlook

On the future of IEFS, although 95 percent of the system has been built, Lin says that there are still quality-of-life tweaks that can be made to make the lives of government officials or those under quarantine easier. While he does not anticipate the need for an IEFS 2.0, there are always minor adjustments that can be made for further improvement.

In fact, with an effective IEFS in place and a remarkably low number of COVID-19 cases in Taiwan, Lin is focused on building "the next star or stars in the company which would continue to power growth for the next five to 10 years."

In the words of Lin, "once you have this, you need to choose the right technology to do it; for us, using cell towers to triangulate a person's position struck the right balance between respecting privacy and promoting public health. In contrast to Hong Kong's tracking bracelets, the IEFS system allows for greater privacy..."

Lin sees COVID-19 as having benefitted Taiwan Mobile in a sense because its subsidiary Momo is the leading B2C e-commerce firm in Taiwan. During the pandemic, Momo's growth accelerated and it was able to solidify its market-leading position. While the telecoms business is a cash cow for Taiwan Mobile and the e-commerce business is a rising star for now, Lin believes that Momo will also become a cash cow in time, resulting in the need for yet another "star" to provide growth momentum.

Of course, this is not to say that there is no room for existing businesses. Taiwan Mobile will continue to provide fast and stable telecommunication services, as well as video conferencing, online entertainment, and broadband

services. It also plans to provide 5G transformation solutions for more enterprises in the future. On the other hand, Momo will continue to enhance the consumer experience. For example, it has launched voice search in mobile shopping services and plans to optimize last-mile delivery by limiting delivery time to six hours and completing 30 satellite warehouses by the end of 2021.

For the wider Fubon Group, the plan is to incorporate notifiable disease-related protection to existing insurance products and to develop insurance policies to provide protection against the risk of business suspension. This would build on the fixed-term health insurance plan for notifiable diseases launched by Fubon

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Life, a first for Taiwan that offers daily hospitalization benefits as well as death benefits to beneficiaries, and the insurance plan for notifiable diseases launched by Fubon Insurance, also a first for Taiwan that provides protection and reimbursement for people in mandatory home quarantine.

Finally, Fubon sees Southeast Asia as benefitting from lingering U.S.-China tensions and the resulting restructuring of the global supply chain, and is looking to extend its current operations in Singapore, Vietnam, and Indonesia, to other neighboring countries such as Malaysia and Cambodia. In doing so, Fubon will be following the footsteps of other Taiwanese companies.

## Conclusion

To be sure, as much as 2020 has been the year of the coronavirus, for the island of Taiwan, U.S.-China tensions are seen to have an equally important, if not more important, effect on business, politics, and society. As companies like Fubon expand into Southeast Asia, experience-sharing on initiatives such as the Intelligent Electronic Fences System (IEFS), not just money and deals, will facilitate win-win partnerships and meaningful social impact. Indeed, by bringing the government and telecom carriers together to prevent and contain a public health crisis, it is fair to say that the IEFS is an example of public-private collaboration that has practical relevance well beyond the geographical boundaries of Taiwan.

## Endnotes

- 1 “Taiwan just went 200 days without a locally transmitted Covid-19 case. Here’s how they did it.” *CNN*. Oct. 29, 2020. <https://edition.cnn.com/2020/10/29/asia/taiwan-covid-19-intl-hnk/index.html>; “Taiwan Achieves Record 200 Days With No Local Coronavirus Cases.” *Time.com*. Oct. 29, 2020. <https://time.com/5905129/taiwan-coronavirus-record/>; “Taiwan marks 200 days without domestic Covid-19 infection.” *The Guardian*. Oct. 29, 2020. <https://www.theguardian.com/world/2020/oct/29/taiwan-domestic-covid-19-infection>; “Coronavirus: Taiwan marks 200 days without a domestic infection.” *South China Morning Post*. Oct. 29, 2020. <https://www.scmp.com/news/china/science/article/3107620/coronavirus-taiwan-marks-200-days-without-domestic-infection>
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- 12 “What we can learn from Taiwan’s response to the Covid-19 epidemic.” *The BMJ Opinion*. July 21, 2020. <https://blogs.bmj.com/bmj/2020/07/21/what-we-can-learn-from-taiwans-response-to-the-covid-19-epidemic/>
- 13 Ibid.