

## Transformation of industry verticals through 5G – Focus and Look Indoors

Now that 5G is here, it is time to up the ante. Many of us (analysts in particular) have been waiting in anticipation to see how all the potential that we saw in 5G is going to start triggering the necessary building blocks that will transform the region and the world. The much anticipated infrastructure – less hyped this time - that will enable a smarter and more connected world promised to drive digital economies for governments, to create new monetization opportunities for businesses and offer a real perceivable difference over 4G for consumers.

Has it delivered? Well, not yet.

However, **there have been some critical changes on the supply side that are seen as positive for the industry.** Firstly, there have been changes in terms of who owns the network infrastructure. Sites, especially indoor sites, are no longer solely owned by mobile operators but increasingly owned by tower companies and neutral hosts. In fact, a key milestone in industry collaboration and integration of the telecommunications and real estate industries was achieved in China earlier this month. The Shanghai Lujiazui L+ Mall was launched and will offer a high quality, innovative shopping experience powered by 5G. Services range from shopping assistance, delivery, and destination guidance offered by 5G smart robots to 5G+AI face recognition, 5G+8K HD video, indoor precise navigation and people flow analysis.

Secondly, an Open Site Interest Group has been set up. As an industry collaboration initiative, it seeks to enable scaled construction of 5G through use of a site resource sharing platform and site construction standards. Thirdly, industry is increasingly accelerating applications through standardization. This will impact customer experience and give the application economy a boost. Lastly, for the first time since 2G, a spirit of enablement is taking shape across the region and around the world. Bringing it all together through industry collaboration is now more feasible than ever. Although not immediately apparent, the combination of these changes can potentially trigger drastic change and the start of a whole new wave of growth mobile operators.

So, will it happen? Possibly. **To make it reality, industry needs to focus and look indoors.**

According to a survey conducted at the 5<sup>th</sup> Annual Asia Pacific Spectrum Management Conference held in Kuala Lumpur in March 2019, 79% of respondents said that they will rate their mobile operator according to the indoor network quality that they experience. Within the survey, Malaysian respondents were more critical of their mobile operator with 88% of respondents claiming indoor system quality as important to them. Malaysians also showed that they were more supportive of Digital Indoor Systems (DIS) than their global counterparts. An overwhelming 93% of Malaysians agreed that DIS availability was important. **These statistics represent the changing needs on the demand side across the region that needs to be addressed.**

**With 80% of network traffic now originating from indoors, it is not hard to see that indoor use cases will become a key driver of 5G networks.** As the number of 5G launches increase in number,

mobile data usage will increase exponentially alongside new applications such as Internet of Things (IoT), virtual reality (VR), augmented reality (AR), 8K live video streaming and location-based services (LBS). All of which will primarily take place indoors. This means that improving customer experience indoors to monetize 5G will become a priority and of utmost importance. **This coupled with users increasingly becoming critical of their mobile operators when it comes to the indoor environment require that mobile operators focus on indoors for the next wave of growth.**

5G has the potential to transform industry verticals through 5G indoor connectivity but experts in the industry expect certain key verticals will experience stronger growth than others. Interestingly, the survey also found that a key driver for spend on DIS is solving pain points for users. Ecosystem partners interviewed go further to say that once DIS in place, new applications can be monetized which will be a factor that can drive further spend in DIS. Smart in the Philippines and AIS in Thailand bring a different perspective to light. Their implementations of DIS highlight the need for successful brand maintenance as a critical survival factor within an increasingly competitive landscape, not just for mobile operators but for businesses in general.

**A key success factor for DIS would be for mobile operators to focus on key verticals where there will be stronger growth and a clearer value proposition for 5G indoor connectivity.** Verticals such as retail, media and entertainment, tourism and hospitality, and industrial manufacturing are some examples of the more promising key verticals.

- Within retail, shopping malls around the world are transforming into shopping experience centers. They are now providing value add network based services such as AR/VR game services and heat maps to drive retail spend.
- Within media and entertainment, 5G stadiums seek to offer unique, thrilling experiences for audiences using AR to draw the crowds in. News spreads quickly of the use of an AR fire-breathing wyvern on opening day 2019 at Munhak Baseball Stadium in South Korea.
- Within tourism and hospitality, smart hotel concepts are paving the way for the industry to soar to greater heights in customer experience. The InterContinental Shenzhen in China recently initiated creating the industry's first end-to-end 5G network that will offers guests innovative, luxury experience.
- Within industrial manufacturing, increasing cost pressure is driving the need for high network availability to support use of augmented remote service assistance and real-time and historical data for predictive analysis to improve operational efficiency and productivity.

**Given the advantages of DIS over the conventional Distributed Antenna System (DAS), mobile operators worldwide have already begun the transition from DAS to DIS.** To date, the most notable progress has been in China with its achievement of about 80% penetration for new indoor system deployments. The nation as a whole has achieved consensus on what is need to progress in terms of indoor network coverage and regulators have developed performance test criteria for 5G indoor scenarios. This soon to be ubiquitous indoor experience will facilitate the many applications soon to entice China's millennials that have high spending power. Wechat's 1 million mini programs<sup>1</sup> are only an indicator of what might be facilitated within China's new indoor environment.

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<sup>1</sup> <https://www.scmp.com/tech/article/2153705/tencents-wechat-now-host-1-million-mini-programs>

Regionally, a common theme across the case studies of mobile operators implementing DIS show that mobile operators are looking for cost effective, future-proof solutions (e.g. 5G-ready) that can be deployed quickly. For example, HKT in Hong Kong implemented DIS to reduce CAPEX as lead mobile operator while sharing the 5G-ready solution and providing high quality mobile data service to subscribers. Turkcell in Turkey leveraged on DIS for the shorter construction time and 5G-readiness and Sichuan Mobile in China deployed DIS in office buildings, shopping malls and hospitals to refresh and improve existing indoor application coverage.

In conclusion, conventional economics dictate that the supply side needs to be optimized to address changes on the demand side. There is no doubt that indoor use cases will become a key driver of 5G networks and correspondingly users will make increasing demands on their mobile operator when it comes to the indoor environment. Focus needs to shift to transforming indoors for DIS to enable 5G and on specific key verticals for the next wave of growth to happen. 5G is here, it is time for transformation of the indoors environment, especially in Malaysia.

***This article was authored by Quah Mei Lee, Associate Director for ICT, Frost & Sullivan Asia-Pacific.***

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