



Opening Up the Digital World for Every Malaysian

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- *Planning for equitable access is about opening up digital opportunities for every Malaysian*
- *The next great opportunity for Malaysia lies in democratising the innovation chain across the length and breadth of the value chain*

Throughout the three decades of my network infrastructure career with TM, my main priority and privilege have been to enable internet access in every nook and corner of Malaysia.

We have made significant progress in that journey, achieving about 96% 4G coverage throughout the nation. But, acknowledging the fact that certain parts of the country continue to face challenges with access to reliable connectivity, we relentlessly continue to press ahead with our efforts to cover 100% of the population.

Whether through fiberisation or transitioning from 3G to 4G capabilities, TM has put in place multiple endeavours committed to curbing the digital divide, and to providing a level playing field for all Malaysians in both the rural and urban areas.

Even while we continue serving our nation with equitable 4G access, we are always looking ahead to determine the next big opportunity to drive Malaysia's advancement towards overcoming the present *access divide* and to enable complete digital inclusion which includes laying the foundation for nation-wide 5G connectivity.

The last decade has undoubtedly been all about connectivity. The nation's players in the network connectivity space have spent trillions of dollars, to stimulate the new digital era. Despite their heavy investments, they experienced numerous challenges in differentiating their services, which have been solely based on providing connectivity services.

Revenues stagnated for providers who purely offered connectivity, largely due to the dramatic disintermediation caused by OTT (over the top) and other non-telco players. Recognising the increasing demand for diverse services that have spurred the growth of these non-telco players, it is clear that focusing only on enabling connectivity is not enough, if we want to maintain a forward-looking momentum in the next decade.

DEMOCRATISING INNOVATION

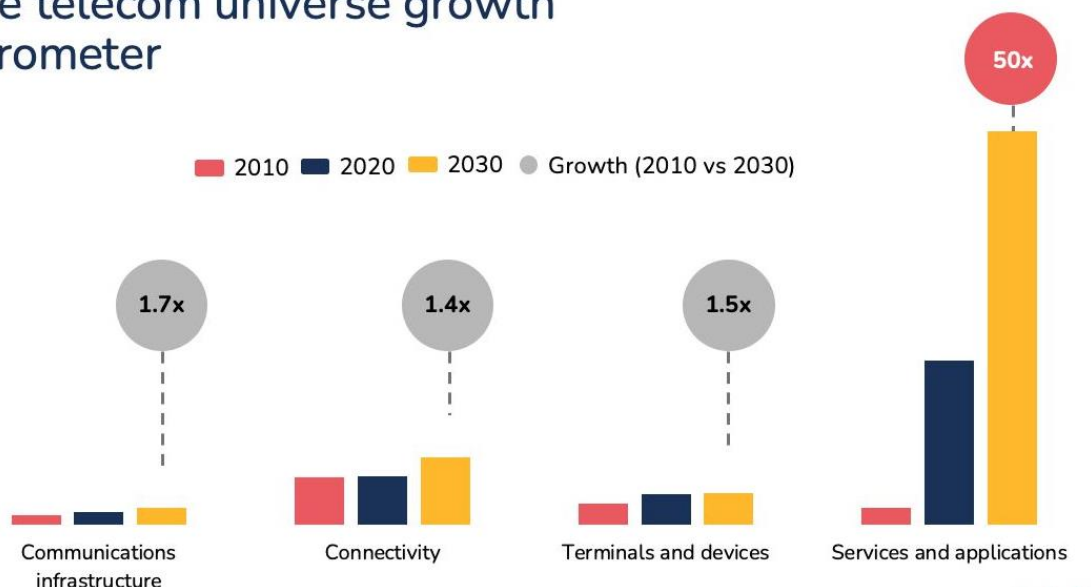
We see the next big opportunity laying in democratising innovation across the length and breadth of the value chain. It will stem from building services and applications to, more specifically, developing bespoke solutions capable of solving real-world problems. The real answer in solving Malaysia's current challenges will be to innovatively leverage the next generation of connectivity technologies. This includes ensuring best-in-class education, optimising the utilisation of infrastructure within the current era of rapid urbanisation, mitigating natural disasters (such as our perennial problem with flooding) by taking preventive action, and digitalising enterprise operations (including those of SMEs) to make them competitive.

According to various industry sources, services and applications have grown by 20 times since the launch of 4G in 2010, while the connectivity market size has only grown by 1.1 times. Services and applications also surpassed the other two layers of the value chain, namely communications infrastructure and terminals and devices, seeing 20 times growth over the last decade.

The services and applications layer is anticipated to grow by a further 50 times by 2030. On the other hand, the other three layers (communications infrastructure, connectivity, devices) are expected to grow less than two times over the same period.

By looking at these past trends and future expectations, we can see that the time has arrived for telcos to pivot from connectivity to offering a more diverse range of services. The majority of future revenue is expected to be derived from hardware, software, services, and applications relating to non-connectivity, with the latter having the greater potential. The chart below underpins this narrative.

The telecom universe growth barometer



Source: *twimbit*. The data above presents a view on the potential growth of services within the telco market

5G: CONNECTING PEOPLE, SOLVING HUMAN PROBLEMS

I am confident that the Malaysian government's approach toward a single, wholesale network for the nation's 5G rollout stems from this same approach that we have been discussing. A Single Wholesale Network (SWN) will enable telcos to focus on services and retail innovation rather than laying the network infrastructure. Service providers will compete and differentiate themselves based on the services and platforms they develop in conjunction with their overall participation in the convergence play.

Building 5G-enabled services and platforms has the potential to revolutionise industries and the society, and with every next generation of networks, we can open up greater possibilities.

5G broadly provides three types of offerings:

1. enabling high capacity services, especially for consumer segments, [*delivered by enhanced mobile broadband or eMBB*];
2. time critical responses which need 5G's low latency specs, such as autonomous vehicles [*delivered in ultra-reliable low latency communications or uRLLC*];
3. and the use of the massive number of sensors such as smart meters [*as in massive machine-type communications or mMTC*].



The next big question for telcos is how to build the next generation of services and applications.

During this phase, stakeholders need to either be a part of an existing ecosystem or build their own ecosystem in today's era of platformisation. For applications and services to be effective, they need to be sustainable enough to deliver commercial and social impact. Furthermore, given changing consumer needs and a highly competitive environment, business models must evolve in tandem. To remain relevant, building the best service or application that is capable of solving a problem at scale will rely on technological convergence. A collaborative platform that advances through partnerships will be key in making convergence a success.

Technology is most potent when it is employed to establish a symbiotic relationship with humans; it is worthless when developed in isolation. Real opportunities lie in addressing human problems, whether in providing equitable access or democratising innovation by building purpose-driven services and applications to support the nation's needs.

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