

Press reports suggest the government in Malaysia may be considering a change to its 5G network strategy, two years after the decision to adopt a single wholesale network (SWN) approach.<sup>1</sup> As yet, there is no confirmation the government will change course or what that change would be. However, any shift could have ramifications for the pace of 5G rollout and adoption, and how operators manage infrastructure.

Malaysia regards itself as a digital player with a young population and high-growth economy, but in using an SWN it opted for an unconventional approach. This Insight Spotlight reiterates the value of 5G coverage and adoption, the routes available and the potential implications of a change in direction.

## Analysis

### The SWN decision and its impact

The Malaysian government decided to proceed with the SWN approach to national 5G rollout in 2021, finalising the agreement in March 2022. The SWN operator – Digital Nasional Berhad (DNB) – would take responsibility for infrastructure rollout. Ericsson was selected as the main infrastructure equipment supplier to DNB.<sup>2</sup> Each of the operators could sign access agreements and had the option for equity stakes up to a total of 70%, with the government controlling 30% but with veto power, effectively making DNB state-owned. A 5G coverage target was set for 80% of people in 'populated areas' by the end of 2024.

The SWN strategy was seen as the most economical means of extending 5G coverage at pace, particularly to low-density, rural areas. DNB reports that 5G coverage reached 47% in populated areas at the end of 2022, ahead of a 40% target. However, 5G adoption stands at only 1% of consumers, which is behind Thailand, Indonesia and the Philippines, despite Malaysia's higher GDP per capita.

Only three of the four largest operators (Celcom, Digi and U Mobile), which serve around 65% of Malaysia's mobile subscribers, have signed access agreements with DNB. Maxis, the largest group with a 27% share, has yet to sign – despite the government originally hoping to have all operators on board by June 2022.

### Routes to 5G national scale

Malaysia started later than others in 5G – and with co-dependencies. Delays to contracting with licensees have constrained the pace at which 5G base stations can be laid. 5G coverage has expanded to a meaningful level in built-up areas over the last 12 months, but this is the low hanging fruit. Expanding into lower density, rural areas is significantly harder.

If there were to be a change in course, a number of potential options could immediately provide more flexibility, including retail-led competition where operators offer 5G on their networks, use of alternative network sharing agreements, and maintaining an SWN but voluntarily. Benefits include increased innovation, differentiated quality of experience, more resilience and minimising of cybersecurity risks.

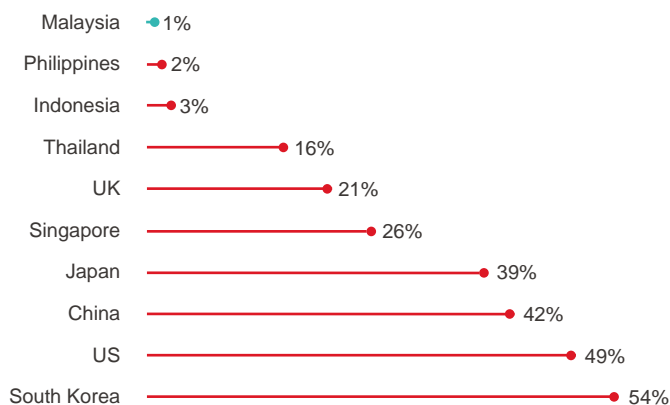
The retail-led model with voluntary infrastructure sharing is the most popular around the world because it is market-based and technology-neutral. It allows operators to compete using their own spectrum or by pooling it (active sharing). Network coverage and quality are key competitive differentiators, affording cost savings from sharing, and incentivising innovation. In Malaysia's case, it would potentially release a cache of network capex from the operators, vendors and cloud groups targeted at national builds and more localised private networks for enterprise customers. In theory, SWNs deliver similar advantages by pooling resources such as towers, antennas and spectrum but face the challenges of coordination with private sector partners and expertise, and still have a need for a long-term return on investment. A dual wholesale network (DWN) is rumoured as an alternative option in Malaysia, but it is unclear what this is and how it would work. Further clarification would be required.

On the rural challenge, experience in other countries shows there are more effective targeted solutions to fill coverage gaps while maintaining infrastructure competition. These include shared rural networks (e.g. in the UK, New Zealand and Türkiye) and reducing spectrum costs in return for network investment in rural areas (e.g. in Sweden, France and Portugal).

Source: GSMA Intelligence

### Malaysia's 5G take-up rates are behind regional and global peers

Percentage of population with an active 5G subscription (December 2022)



<sup>1</sup> "Cabinet to decide Friday if Malaysia continues with current 5G rollout plan or considers proposals from private sector", MalayMail, February 2023

<sup>2</sup> Others, such as ZTE, were also selected for certain supply contracts.

## Implications

### Government

- **Responsive and flexible policy** – A key objective of SWNs is to achieve nationwide coverage (including rural areas). However, the history of SWNs shows this is rarely achieved. Many SWNs have failed to materialise or have been significantly delayed (e.g. in Kenya, Russia and South Africa). Of those that took effect, most did not achieve universal coverage, including in Mexico where the 4G wholesale network provider filed for bankruptcy in 2021 and required additional government spend to bail it out in 2022 (it is still falling short of its original coverage objectives). Meanwhile, market competition combined with voluntary network sharing has delivered 97% 4G population coverage and 70% mobile internet penetration in the East Asia & Pacific region. Reinstating technology neutrality and permitting operators to launch 5G networks in Malaysia would be consistent with this logic. If, by contrast, the government maintains an SWN approach, it should be transparent in how goals are set, and progress monitored, on KPIs such as coverage, adoption and ownership.
- **Infrastructure competition drives innovation** – The propensity to innovate is reduced in an SWN environment where no infrastructure competition exists. However, infrastructure competition is a key underpinning for innovation, whether in private networks, edge compute or open RAN. The latter has gained momentum in many countries as a means to reduce cost, increase agility and drive vendor competition. Without a change in direction, Malaysia faces a competitive disadvantage on a number of network fronts (including open RAN, 5G Advanced and satellite), with regional peers such as India and Indonesia also in the early stages of 5G.
- **Learning from other countries** – A further objective of SWNs is to foster greater competition at the retail level. However, none of the markets that established an SWN has seen a significant increase in retail competition. A particularly relevant case study for Malaysia is [Rwanda](#), which licensed KT Rwanda Networks (KTRN) as a single 4G wholesale network 10 years ago, with the objective of enhancing coverage, reducing costs and supporting innovation. While the network achieved widespread 4G coverage, adoption never took off; at the end of September 2022, 4G adoption was 2% compared to a regional average of 22%. KTRN has also failed to break even, making it a considerable financial burden for shareholders. While it is still early days for DNB, there are parallels that can be drawn with KTRN, especially around the potential for high access costs (relative to 4G) to reduce the uptake of 5G services in Malaysia. As part of Rwanda's new National Broadband Policy and Strategy, adopted in October 2022, the government will allow operators to launch their own 4G services, increasing competition and accelerating mobile broadband adoption. This offers a useful precedent that can be considered as part of the SWN review in Malaysia.

### Mobile operators

- **Collaboration and innovation will be critical** – While a review of the SWN would be welcomed by mobile operators, significant uncertainty remains. It is possible that the SWN will continue, either in its current shape or as a reformed entity. Alternatively, the government could introduce a more flexible framework that fosters greater market-based competition. This uncertainty is likely to impact 5G deployment and adoption in the short term. Operators will therefore need to plan for each alternative when the government presents them, and determine how they can best achieve their own commercial targets and the country's broader digital development goals.
- **The benefits of sharing** – A key objective of the SWN is to reduce network deployment costs and increase resource efficiency. However, this comes at the expense of network competition, which has been shown to drive innovation and investment. Furthermore, operators have achieved the same network efficiencies by engaging in voluntary network sharing. A GSMA and World Bank [study](#) of seven Sub-Saharan African markets showed that active sharing can deliver similar levels of coverage to SWNs while maintaining a greater degree of service competition. Operators should therefore be allowed to fully leverage the benefits of both voluntary passive and active network sharing.

## Related reading

[Single wholesale networks and network sharing: sharpening discussions on the 5G repercussions](#)

[Malaysia cuts a lonely figure in approach to 5G rollout](#)

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