

Do Open Access wireless networks threaten competition and investment?

Despite its policy currency globally there is little evidence that mandatory open access networks have contributed to public policy objectives of increased competition in services, decreased pricing and higher levels of demand stimulation. In fact, a growing body of evidence from mature markets indicates that the adoption of mandatory open access network strategies may come at the expense of other public interest objectives such as investment and innovation. Further, where such measures have been implemented in mature markets of the European Union, for example, countries have the institutional capacity and competencies to implement and enforce mandatory open access, which is not the case in many jurisdictions in Africa.

The lacuna in South Africa's national broadband policy on how to implement open access in order to contribute to national policy objectives prompted Research ICT Africa (RIA) to investigate whether open access strategies could be the policy and regulatory panacea to poor network extension and high costs of broadband. It finds that while mandatory open access interventions have failed, **voluntary** commercial open access models have contributed more effectively and efficiently to national objectives of network extension and wholesale cost reductions. Both commercial open access international undersea cable companies and terrestrial fibre companies challenged closed, incumbent networks by making investments on an open access basis and strongly contributing to the extension of broadband networks.

With the leading wholesale open access wireless network trials and early implementation in Mexico, Kenya and Rwanda having not taken off, South Africa should exercise caution in enforcing such an open access model. Rather than creating mandatory open access fixed and wireless networks or regimes that may take time to institute and may not be effectively enforced, and which may inhibit network investment and innovation at a time that it is most needed, high demand LTE spectrum should rather be urgently released to operators. Conditional auctioning of the spectrum should require underserved areas without broadband coverage, or uncompetitive coverage, to be serviced before the winning bidders can deploy the LTE spectrum in more lucrative urban markets.

SUMMARY OF FINDINGS/ RECOMMENDATIONS

- 1. With multiple competing demands on the fiscus, the state does not have the resources to build, implement or manage broadband networks – open access or other.** In financially constrained conditions, where neither the public nor private sector can independently meet South Africa's broadband needs, the state can leverage public and private sector investments to create an enabling environment for competition and meet national broadband policy objectives as proposed in the national broadband plan. In fact, the policy proposes the rationalisation of all state-owned networks in the sector.
- 2. There is little rationale for a mandatory open access wireless network in South Africa.** Though prices are high and probably require more effective wholesale regulation, competitive investment is responsible for the pervasiveness of mobile networks in Africa. Enabling greater participation by historically disadvantaged individuals and SMMEs is better achieved in other parts of the sector, potentially through requiring operators to provide access to services and app developers. The challenges of reaching 'uneconomic' areas are better achieved through a qualified auctioning of high-demand spectrum that requires operators first provide services to underserved areas before they are able to deploy 4G and 5G spectrum in the more lucrative urban areas.
- 3. Private fibre companies have voluntarily adopted commercially-driven open access principles** in order to maximise their returns on investment by getting as much traffic through their networks as possible. As indicated in SA Connect through incentives such as aggregating public sector demand to provide long-term anchor tenancies broadband services competitively to uneconomic areas.

I WHAT IS OPEN ACCESS?

Although there is no standard definition of open access (OA) in its regulatory application, it has two common principles: (1) non-discrimination and (2) price transparency. These are generally enforced to ensure equal access to networks and wholesale services and prevent incumbents from favouring their own up-/downstream operations over that of competitors: “vertical foreclosure”. (CRASA 2015) In competition theory, open access is only applied when such abuse of dominance is demonstrable.

Drawing on Krämer and Schnurr an open access market can be determined conceptually on three dimensions: the *market structure*, which denotes how ownership (and management) in the network relates to the openness of service layer activities; the *ownership structure* denotes the openness of the business model and this is determined by the goals of the access provider; and the *access levels*, which refer to the specific network elements (broadly classified in four network levels from international data down to the access network). The most open elements can be visualised at the centre (in the blue box) and more closed elements at the ends of the axes.

As such, open access regulation has been seen as a way of overcoming the problems associated with the high sunk costs required of infrastructure industries that make competition in certain networks unfeasible. While network competition is still seen as producing the best outcomes in terms of public policy objectives in more developed economies, the duplication of infrastructure and fragmentation of demand is uneconomic in most developing markets

and even in some more mature ones.

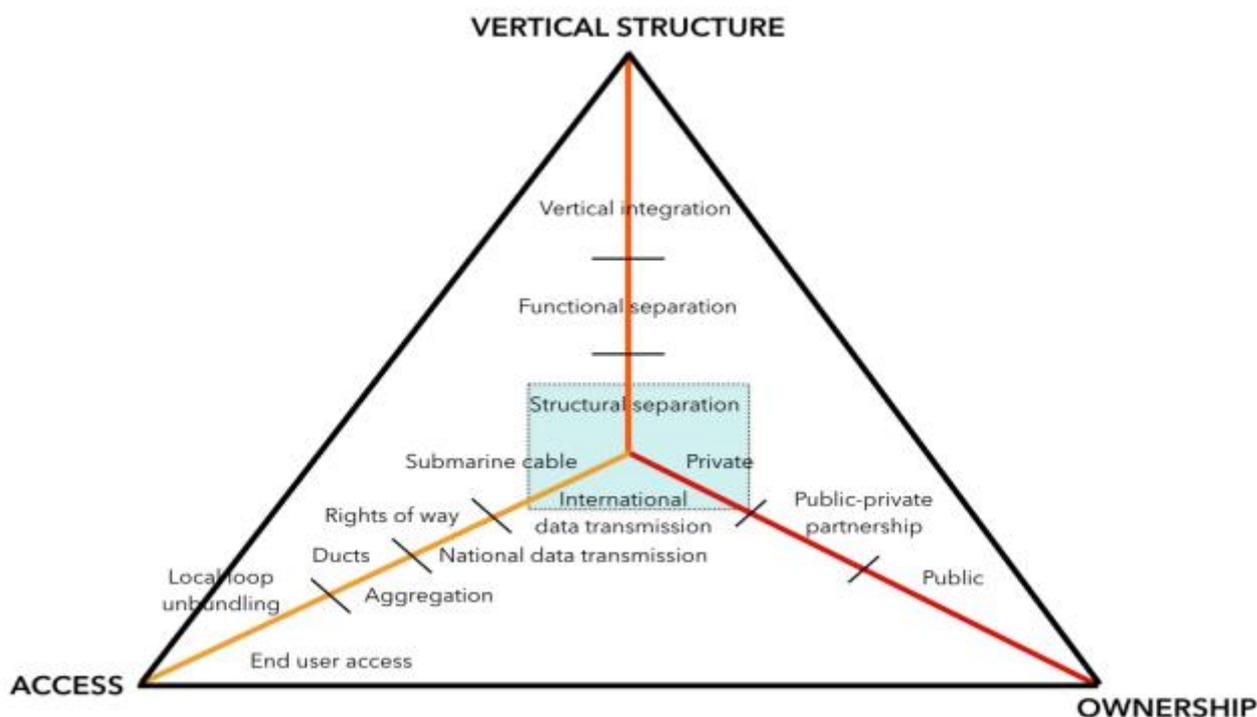
Open Access *ex ante* regulation is seen as a policy mechanism to aid “the regulator [which] by itself had not been able to bring down the prices of underlying infrastructure.” (Roux, CSIR, 2016) It has been identified as a remedy for extreme dominance in markets such as Mexico and Kenya, which has rendered them uncompetitive. This is not the case in SA’s mobile market (except for certain geographic areas) and the fixed access market (for which mobile broadband provides substitutability at least for private use).

II FIXED OPEN ACCESS NETWORKS

Various mandatory open access interventions such as Local Loop Unbundling and the Open Access, state-owned, national wholesale infrastructure carrier Broadband Infracore have failed. Even the functional separation of Telkom by the Competition Commission was arguably unsuccessful in adjusting Telkom’s behaviour.

On the contrary, **voluntary** commercial open access models have challenged closed, incumbent networks by strongly investing in the extension of broadband networks and providing access on an open basis voluntarily. These new operators are exploiting the gaps left in the various network levels by installing fibre, even where there are extensive municipal and commercially closed networks. The incentive to voluntarily adopt OA principles exists simply because it makes commercial sense to sell to as many customers as possible.

Figure 1: OA classification framework (adapted by authors from Krämer and Schnurr 2014)



In addition to stimulating complementary investments in backhaul network investments, this commercial open access logic has also initiated last-mile fibre deployment. Companies such as Vumatel have been able to roll out fibre-to-the-premise as a retail service on the back of relatively low cost open access wholesale providers.

The success of these models have created a competitive environment to which Telkom, the largest backbone operator in the country, has responded by voluntarily separating Telkom's backbone and services segments, leading to a wholesale price reduction of 57%, and its public peering arrangement at NAPAfrica.

As the acting Director General of DTPS indicated: Commercial fibre "...has been one of the most phenomenal developments in the sector, a game changer, that demonstrated that open access networks are viable, unlike what the traditional operators have argued." (Mjwara, DTPS, 2016).

III VIABILITY OF AN OPEN ACCESS NETWORK

Co-builds, including those by the second network operator, Neotel and the dominant mobile operators Vodacom and MTN, together with complementary investments in different routes by other fibre companies such as Dark Fibre Africa and Fibreco, have also been critical in extending the national broadband network. Other voluntary co-ordination and commercial infrastructure sharing, such as passive infrastructure sharing by mobile operators, has resulted in significant avoidance of duplication.

The Department of Telecommunications and Postal Services (DTPS) has received different views on the desirability and feasibility of an OA wireless network given that other social and economic policy imperatives are being considered in addition to the optimal business case. Some have argued that the success of open access undersea cable projects can be replicated with an open access wireless network and bring down high mobile prices in South Africa.

Those opposed to such a network argue that the existing conditions supporting successful, long-term, relatively static undersea cable investments are quite different from the agility required by wireless networks. In the public consultation for SA Connect, for example, Vodacom and MTN publicly declared that if they could not control the spectrum they would not invest in any consortium and if the network would be providing low-cost spectrum they would simply lease spectrum from it. Some

operators have argued that a single open access wireless network favoured by the DTPS will fail - the proposal itself creating an uncertain investment environment - but that an open access network for un-serviced areas could work.

However, without an experienced private operator in any shared model there is little evidence of success. The withdrawal of dominant operator Safaricom from the Kenyan open access networks resulted in the collapse of that open access initiative.

With the backbone increasingly taken care of in a mostly competitive environment (with some geographic exclusions), mobile broadband remains the main access network solution.

IV RECOMMENDATIONS

Achieving these policy objectives in a context of sufficient competition while avoiding the unintended consequences of delayed investment requires the allocation of high-demand spectrum and forbearance on implementing a mandatory OA wireless regime that would siphon spectrum and threaten the incentive to invest. (CRASA 2015).

OA should only be introduced where markets are highly concentrated and there is evidence of abuse of dominance.

Ensuring that the release of this high-demand spectrum for use in more lucrative urban markets does not happen at the expense of underserved areas can be addressed through requirements on the winning bidders to provide mobile broadband coverage in those areas before the operator is permitted to deploy the new spectrum in areas already serviced. This has been done successfully in Sweden and other jurisdictions. Moreover, no artificial scarcity should be created to push up the price but there should be sufficient room in each block for operators to evolve their services.

Current regulations that restrict spectrum sharing, trading and shared use should be revised to enable commercial correction of incorrect spectrum valuation, to enable self-provision in communities where services are not competitively available, and to enable more effective commercial wholesale access to incumbent networks by wireless services providers.

Some operators have argued that if spectrum should be reserved for an OA licence, it should have at least one of the current licensees with competitive

experience in it, and spectrum trading should be permitted to rectify an inefficient spectrum assignment, with regulatory approvals to avoid speculation or hoarding.

There is a public policy commitment to universal access and digital equity as South Africa builds a knowledge economy. The State does not have the resources, however, to fill the gaps in the backbone that are uneconomic for commercial operators, which remain without fibre connectivity. As evoked by SA Connect, the Government must exercise its public procurement muscle and aggregate public demand to incentivise private investment by guaranteeing, for instance, long-term anchor tenancies in builds to such areas. This shift from capex to opex not only reduces Government expenditure but also makes it more flexible.

Commercial operators have preferred this model as it provides them with capital guarantees to pay off loans as quickly as possible, and it prioritises traffic aggregation at the correct price-point while operating an open access network.

LIST OF INTERVIEWEES

Clatterbuck, Byron. CEO: Seacom.

Hawthorne, Ryan. Economist: Acacia.

Hussein, Arif. CEO: Fibreco.

Johnson, Jo-Ann. Deputy Director-General: Western Cape Government – Department of Economic Development and Tourism.

Mjwara, Joe. Acting Director-General: Department of Telecommunications and Posts.

Nkhereanye, Phatang. Regulatory Affairs and Government Relations Manager: Broadband Infra.co.

Nyoka, Nkateko. Chief Officer of Legal, Regulatory and Risk: Vodacom SA.

Padayachee, Prenesh. Chief of Sales and Marketing: Openserve.

Pretorius, Herman; Edmunson, Kerron; Mackinnon, Graham. Regulatory Affairs: Cell C.r

Roux, Kobus. Maraka Institute: CSIR.

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