

## Race to the top: Does competition in the DSL market matter for fibre penetration?

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High speed broadband access creates potential productivity gains and has a positive impact on economic growth. For a country to achieve higher broadband rollout, it is imperative that the right investment climate is created to encourage fibre network rollout. As a market characterised by strong network effects, much of the focus of European Regulators have been on increasing broadband access by implementing appropriate regulations to encourage uptake and investment. This has also come onto the agenda in South Africa with the ICT White Paper, released in 2016. However, while open access regulations have managed to increase service-based competition and the uptake of broadband services in many European countries, it has not had the desired effect on investment.

This study considers whether and how competition in the DSL market affects the incentives of operators to invest in the deployment of high-end fibre optic networks. Most earlier research on the drivers of investment in broadband technology has focused on the effect of open access policies, such as local loop unbundling, or competing infrastructures. We posit that competition in the DSL sector may also influence fibre penetration, possibly to a considerable extent.

We find that the relationship between service-based competition and fibre penetration is non-linear: low DSL competition is correlated with a negative effect on fibre penetration, but as an intermediate degree of competition is created, more service-based competition may positively influence fibre penetration. This is however only up to a point, where after DSL competition becomes so severe that it limits further fibre penetration. This finding should inform competition authorities' – such as the Competition Commission – assessment of mergers in the DSL broadband sector. It illustrates that, while it is important to evaluate the effect that broadband mergers may have on the price and quality of DSL services (through improving allocative efficiency), it is equally important to consider the dynamic efficiency effects that such mergers may bring about.

A second important finding is that the scale of these effects varies with the openness of the DSL market: operators' incentives to invest in fibre appear to be more sensitive to changes in DSL competition if there are extensive open access policies, such as local loop unbundling. This suggests certain nuances to the argument that service-based competition typically has a negative impact on investment in fibre, in that the effect of a change in DSL market concentration on fibre penetration varies with the degree of unbundling that is present. If a country has extensive local loop unbundling, operators' incentives to invest appear to be more sensitive to changes in DSL competition than if there is limited unbundling. Policy makers need to be aware of this potential medium-term trade-off between implementing mandatory access and encouraging fibre penetration.

Our findings show that achieving the right level of competition may help encourage investment in fibre, and that the existing degree of competition influences the effect that open access policies may have on increasing fibre penetration. South Africa should draw from the experience of the European countries considered in this study, in developing its own policy for fibre broadband rollout. The finding that mandatory access policies in combination with existing competition in the DSL market has implications for future investment in fibre is especially relevant within the context of the open access broadband network called for by the ICT White Paper.