RESEARCH STRATEGY REPORT

COMPETING NETWORK INVESTMENTS: TRANSFORMATION, ENHANCEMENT AND EXTENSION

RUPERT WOOD

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Executive summary

Network operators are struggling with the low growth of their established communications businesses but becoming digital is complicated and has elusive financial payback. Operators need to look at their overall investment goals in light of the need to provide defensible assets.

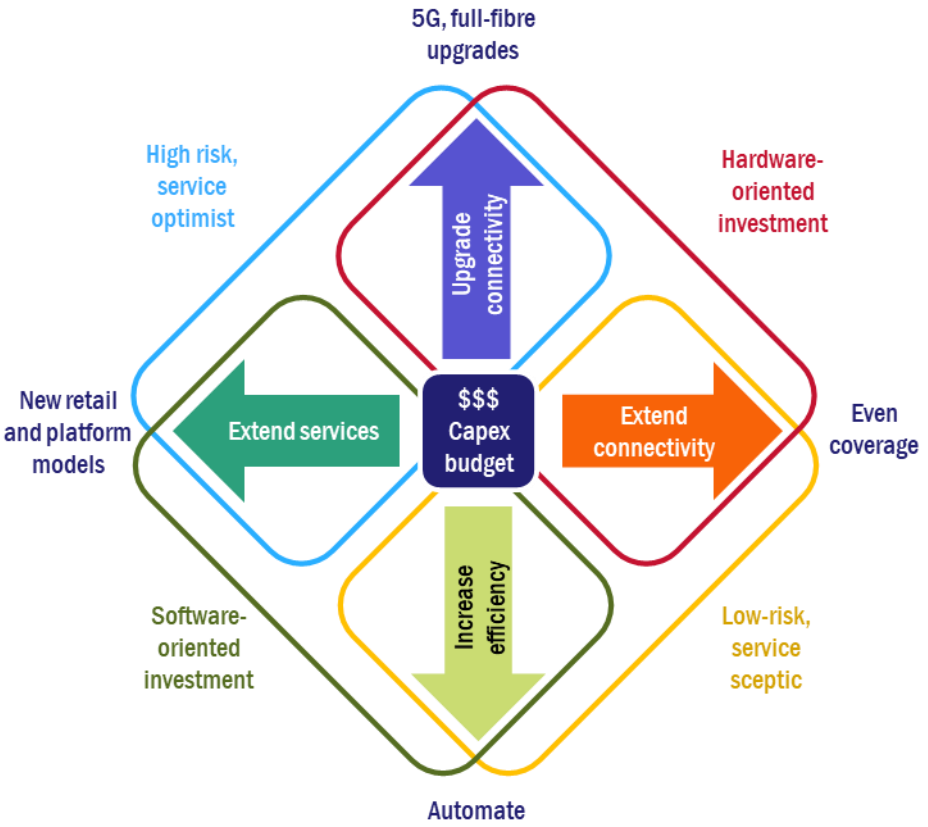
This report helps operators evaluate four competing approaches.

- Upgrading networks to a level which raises barriers to competition.
- Extending coverage to create consistent coverage.
- Investing in digital automation to deliver business- and network-facing cost savings and efficiency for a sustainable advantage.
- Diversify into new services or service platforms.

The report recommends that:

- operators should ensure sufficient investments in physical network assets to provide a defensible business advantage
- every operator needs to be more digital but these are significant investments that should be evaluated for real pay-off
- operators should test their investments in new services to ensure that they cannot be easily attacked by non-operator competitors, and they should be wary of treating new services as drivers of the core business.

Figure 1: Four alternative investment approaches



Source: Analysys Mason

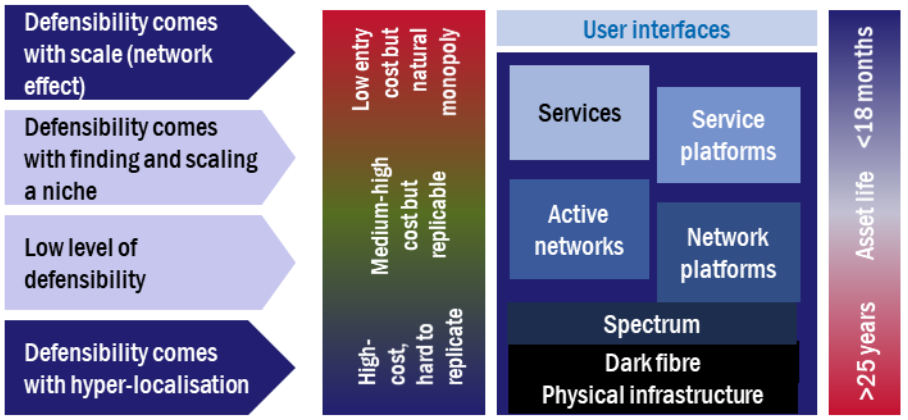
Telecoms operators are pulled in different directions, but operators need to focus sufficient investment in defensible assets

On the one hand, telecoms is a real-estate/utility business with localised assets: ever more so as networks densify. On the other hand, it is a platform/services business with non-geographical assets: ever more so as networks virtualise. This has always been true, and existing operators have by and large successfully navigated their way through the competitive storms that arise from an industry pushing in two directions. However, with unclear demand and large investments required before transformed, cloud-ready fibre-wireless networks emerge from the legacy, holding these two strands together as a vertically integrated operator is becoming an ever-greater strain.

Defensibility is key. A defensible asset is one that maintains value. There are strong defensible businesses at the lowest and highest layers of the value chain. Operators will seek to minimise exposure to areas most prone to price erosion, redundancy (short life-span) or replicability (low barriers to competitors doing the same).

Investment in agile new services – that is, becoming a full digital service provider – tends to hold out the promise of higher growth, but it also tends to run these three risks more than connectivity. If operators push in the services direction, they have to be sure that they do not find themselves crowded out in an increasingly globalised marketplace. We therefore expect to see a continuation of the current trend to concentrate resources on specific verticals, with greater differentiation between major multinational operator brands. Even here we expect a high rate of failure/divestment.

Figure 2: Defensibility in layers of vertically integrated telecoms business



Source: Analysys Mason

Service platform-based, rather than retail service-based, strategies may be a preferred route as they de-risk commitment, but by swapping service provision for 'service enablement' or 'smart pipe', the platform model approaches a connectivity model. It is difficult to see service platforms as genuinely defensible differentiators unless they genuinely can compete against web-scale players like AWS etc. on cost (unlikely) or possess some additional monetisable differentiator such as in 5G (more likely).

New networks are so expensive that few will try to replicate first-movers. In a fibre-5G world, there will be few places that can support more than two physical operators. Despite the obvious regulatory risk, these will have improved market power.

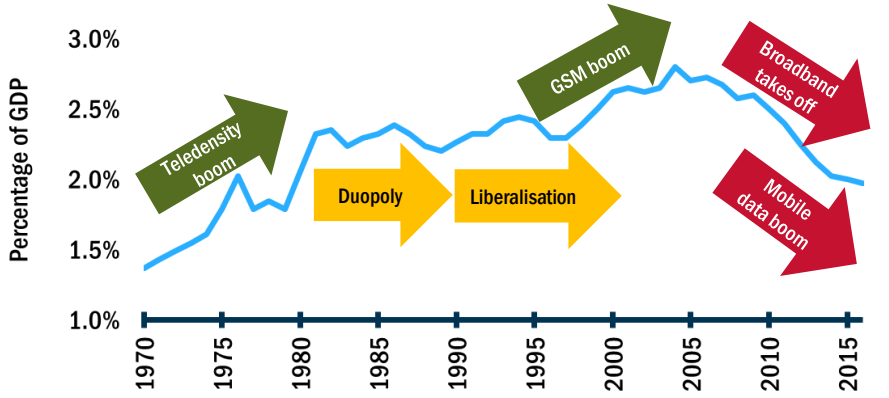
Connectivity has historically been the only source of faster-than-GDP revenue growth for operators

Upgrade connectivity

Connectivity – that is, access to networks – is the core operator proposition and the bedrock of operator revenue. The historical trend in this respect is clear and long-established; operators have responded to a series of challenges at the service layer by rebalancing their tariffing from services to connectivity. This has served most operators well as defensive strategy, but in itself it has not delivered growth. Indeed, as Figure 3 shows, using the UK as an example, the only periods in the last half century when there has been real revenue growth stronger than GDP were when fixed teledensity increased, and when the nature of connectivity itself was extended through GSM. Operators have historically been poor at making services deliver growth. Market liberalisation, the democratisation of Internet access and mobile data have delivered disruption, but nothing in terms of additional value to the operator industry as a whole.

A focus on connectivity need not entail a downward spiral of commoditisation. Consolidation and convergence in the past few years both have offered the possibility of improved pricing discipline and revenue growth in connectivity in many countries. The logic of investment in the next generations of wireless or fibre follows the logic of consolidation. Taking connectivity to the next levels will require a major capex hump, but those that do invest will own defensible assets that significantly raise the barriers to second or third entrants. In most circumstances, there will not be a positive business-case for more than two FTTP or densified, small-cell-based mobile networks.

Figure 3: Telecoms service revenue as a proportion of GDP, UK, 1970–present



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Smaller, mainly mobile-centric, operators may be at a long-term disadvantage. Regulation may mitigate this, and technologies such as network slicing may allow multiple co-investing operators significant new leeway to define and manage services. However, there are very few examples of operators being happy to fall back on wholesale access: it almost invariably dilutes margin.

The goal of heavy connectivity investment is not only a higher-performance network with a long asset life, but one that is cheaper to operate and maintain. Full-fibre networks have far lower operating costs than copper and coax, and almost certainly than future fixed–wireless networks, and 5G promises costs that are more closely tailored to applications.

Low-cost service production models may actually be part of a deflationary trend rather than a secure route to profit

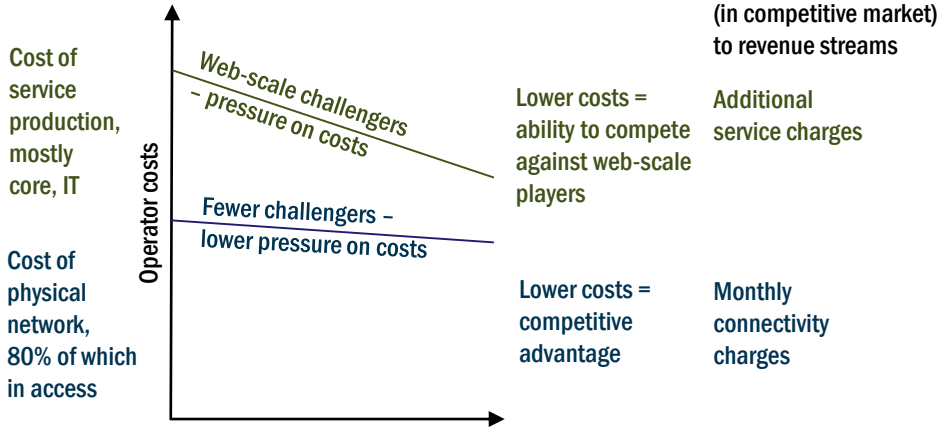
Increase efficiency

There is a lot to be learned, and gained, from emulating web-scale players, but the comparison is not entirely apt or fair since web-scale players rarely have any physical access networks to look after. The overused term 'OTT' is only partially misleading.

In a genuinely competitive operator environment, margin gains brought about by efficiency drives may be hard to sustain if those efficiency measures are replicable, and margin gains are in effect handed on to customers. The result may be deflation of the value of the service layer, further reinforcing the historical drift of operators towards a dependence on connectivity. This deflationary phenomenon has happened before, in all-IP transformation. While much of the initial hope for core NGNs was a more adaptable platform on which to launch new services, in reality it deflated the value of existing services, principally, of course, voice. Because the financial benefits are questionable, all-IP transformation has been pursued with differing degrees of enthusiasm.

Emulating web-scale players reduces service production costs, but has less impact on physical network operating costs, so the overall impact on opex will be more muted than transformation optimists suggest, some citing 10:1 reduction in operating costs as an achievable target. Some operators might see the physical network with its higher burden of costs as something they could hive off to a more infrastructure-flavoured business (just as has happened with towers), but it could turn out that this part of the business has more defensible value.

Figure 4: Cost pressures on vertically integrated operator business



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Emulating web-scale players usually means fighting them. In the world of services, scale matters, and dominance is less susceptible to the kind of tight regulation that applies to national-scale telecoms operators. Playing in the same markets as the half a dozen or so US and Chinese behemoths looks inherently risky, even for the AT&Ts and NTTs of the world.

Unless the deflationary trend of service production and provision can be counteracted by higher volumes (new services, more users), the net outcome for operators may be no better than neutral. This does not mean that shifting to a low-cost service production model is futile, but it is far from a growth strategy, either on the top or bottom line.

We see a distinct trend by consumer-focused operators to shift to a platform-based distribution/enablement model

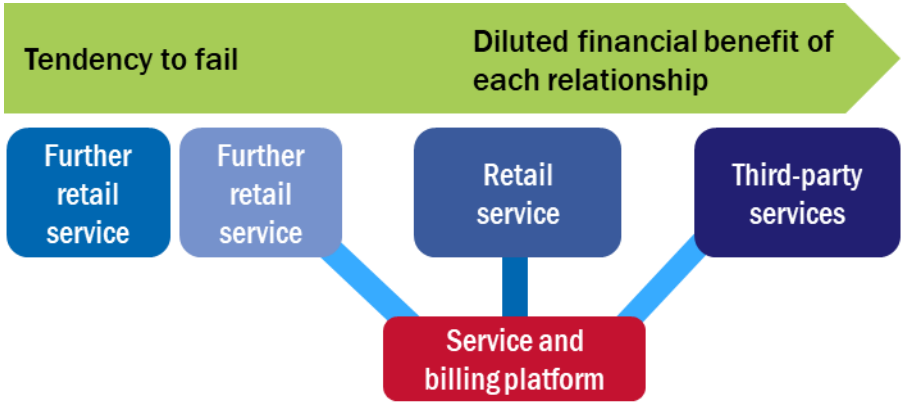
Extend services

The term 'platform' in telecoms has, like 'digitalisation', suffered from semantic overextension. At a basic level, it is an extension of wholesale that opens up, via APIs, multiple network resources to third parties. Insofar as operators invest in systems that facilitate multiple services to develop, these systems can also serve to facilitate third-party services. This can happen at different entry points that allow access to very different sets of resources (network capacity, billing and service platforms, big data, AI etc.).

This B2B2X model is precisely what some large operators in APAC like NTT are counting on as a means to restart growth, when they seek only greater profitability in core services. While a large operator like NTT can showcase many (as yet small) initiatives in this area, it has not yet indicated how much additional revenue it generates. However, it is clear that 5G is perceived as a major new set of resources that it will be able to draw on.

For mid-sized operators, the platform model is in effect a retreat from expansion into adjacent markets at a retail level. Many have found that competing in end-to-end content delivery – to give the most obvious example – has proven too expensive to stimulate market share and ARPU in conventional multi-play services. Therefore, it is a logical move to insert themselves into the value chain as a partner rather than end-to-end provider. For all but the largest cable operators, continuing to compete in managed video is becoming increasingly hard to sustain, not least because the market for managed video (pay-TV) has started to decline.

Figure 5: Trend from vertically integrated approach to services to service enablement



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The resale partnership model of, for example, Hong Kong FTTH operator HKBN, is even more pared-down: this makes no investment in services or platform, provides only Internet access plus mobile and fixed voice, and distributes OTT video players' set-top-boxes in order to boost acquisition and retention. At the most pared-down level imaginable, the Icelandic altnet Gagnaveita sells retail fibre line rental, leaving all services, including even Internet access, to service providers. Retail B2C and B2B account for the bulk of revenue, showing that the worlds of physical network connectivity and the world of services can co-exist and function with surprisingly low transactional value – or friction – between the two.

Recommendations

1

Operators should ensure enough investment in assets that provide an advantage that is difficult to attack.

This applies to all areas of investment. It is not whether running everything in the cloud or owning a great passive network makes more sense – rather whether your investment, whatever it is, can be defended, sustained or grown within its own competitive environment.

2

Operators should learn from web-scale digitalisation but realise that telecoms presents challenges that web-scale players do not have to solve.

It is important to become digital but all the evidence suggests that network operators have to invest a lot in solving problems that web-scale players do not have. Their competitive environment overlaps but is far from the same. Operators have a legacy that is essential to current cash flow. Operators need to carefully evaluate how much, and for how long, they must invest to get significant operational benefits or improvements in digital experience.

3

Operators should assess what it takes to expand into new services to provide a competitive advantage.

In general, this means that operators should branch out only into services that are as nationally bound as the operator is, and require a high level of investment, creating barriers to replication. Operators should be less willing to accept that margin-dilution concerns can be set aside so long as the service nourishes the customer-base of the core proposition. The interdependence of specific networks and specific services is weakening, so if a new service is worth investing in, it will have to work as a standalone proposition.

CONTENTS

About the author

Rupert Wood (Research Director) is the lead analyst for our *Network Investment Strategies*, *Network Traffic* and *Spectrum* research programmes, and his research focuses on next-generation networks and convergence. Rupert regularly contributes to the international press on a wide range of telecoms subjects and has been quoted by The Times, The Economist, Business Week, Telecommunications Online and Kommersant. Rupert has a PhD from the University of Cambridge, where he was a Lecturer before joining Analysys Mason.

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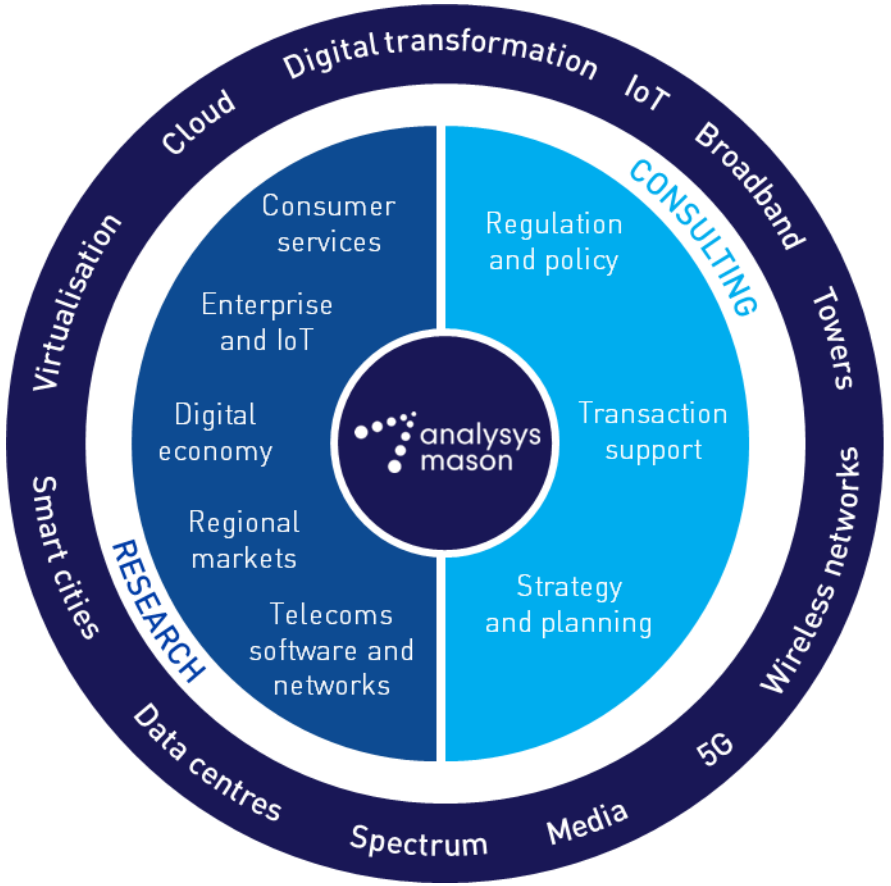

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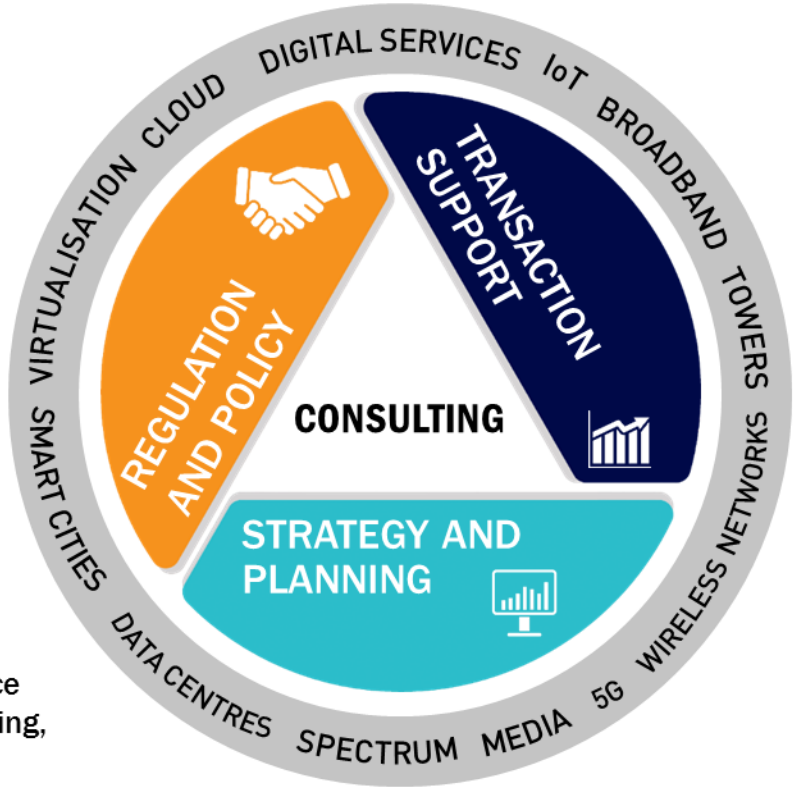

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