

TELECOMMUNICATIONS

UNDERSTANDING THE INVESTMENT FUNDAMENTALS OF THE TELECOMMUNICATIONS SECTOR

By Alan Lok, CFA, Eunice Chu and Guruprasad Jambunathan

Investors exploring the telecommunications sector must be aware of the key economic, operational and regulatory factors influencing these firms. These factors vary from country to country but also from company to company, depending on the kind of service the firm provides—fixed line, mobile or a combination of the two. Common to all are the opportunities afforded by the growth in data and the proliferation of online services. For operators in developing markets, lower penetration rates offer longterm opportunities; for operators in the developed world, staying relevant by keeping pace with technological advancements is vital. In general, the telecommunications sector is marked by intense competition, hefty capital expenditure requirements (at least historically) and rigorous regulatory intrusion.

DEMAND DRIVERS

The degree of price elasticity of demand is a notable issue in the telecommunications services space. For mobile operators, this flexibility tends to be non-discretionary but at the same time still relatively elastic. In short, price sensitivity is an important metric to consider.

Of increasing importance is the extent of contributions from new-age services enabled by digitalisation. These include unified messaging, collaboration and content generation. A company's positioning in these areas can have a profound impact on its revenue prospects.

The appeal, range and quality of a service offering are critical. How well a fixed-line operator is positioned can be gauged by examining the profile of end users, and the revenue split between voice and data.

In the mobile segment, the operating outlook is influenced by the mix of revenue by user type (for example, retail versus corporate), data usage and billing arrangements (prepaid or subscription). More recently, mobile has been taking a growing share of total data consumption. However, the whole pie is growing: usage of data has increased considerably across the board and companies are thinking of ways to harvest and monetise the information they have gleaned from customer behaviour.

MARKET POSITION

The operating landscape for telecommunications companies is heavily influenced by both competition and the regulatory environment. Investors should examine barriers to entry in addition to the ease with which existing rival firms can compete as the number of operators in the market has a bearing on performance. Investors should also consider whether there are only a few competing businesses, or whether the market could be ripe for consolidation.

Of course, the sector's mechanics are not purely dependent on supply-and-demand parameters. The role of the regulator is essential from both competition and licensing perspectives. Pricing can be influenced by the agenda of a regulatory body, and an operator may be obliged to fulfil specific technological or coverage requirements. The structure of the telecommunications market is changing, and the consequences of increased competition from over-the-top services such as Skype or WhatsApp require monitoring.

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STRUCTURAL INFLUENCERS

Levels of urbanisation, market penetration rates and customer purchasing power are critical long-term drivers of the telecommunications industry and are significant determinants of subscriber growth. This metric can be evaluated by examining the per-capita availability and usage of telecommunications services. The efficient utilisation of technology and analytics also plays a huge role in driving up both demand and market share.

In this competitive environment, a unique feature of the sector has been the expansion of nonvoice services. Data, convergence and the bundling of content, in addition to the growth in the enterprise market, are significant revenue drivers for fixed-line operators. Some of these areas, such as data, are also relevant for wireless operators. However, the more specific issues for the mobile sector are the availability and affordability of smart devices, as well as the ability to develop a roadmap for network/technological upgrades to avoid obsolescence.

Related to the factors above, is the advent of network hardware virtualisation, which has cross-sector implications. This new model for service provider infrastructure requires less capital-intensive equipment and is more software based, with a positive effect on capital expenditure requirements. This could prove to be a differentiating factor in the future.

PERFORMANCE METRICS

Several measures can be employed to gauge how well a telecommunications firm is doing. Trends in average revenue per user (ARPU) and ARPU's sensitivity to price changes, along with net subscriber additions, are key indicators that can help track a telecommunications company's financial health. Subscriber acquisition costs and churn rates can reflect the impact of competition within the market.

The strength of the company's balance sheet also merits inspection. Given the potential for high levels of capital expenditure in this sector, investors should closely examine factors such as the amount of debt and free cash flow.

An area of focus regarding fixed-line companies relates to their cost structure relative to that of wireless telecommunications. For mobile operators, the amount of available spectrum and the nature of the associated licensing regime are essential considerations.

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✦ Common to the Sector

1. What is the nature and mix of services offered to subscribers?

- What are the primary factors driving subscriber acquisition?
- What has been the split of subscriber base and new additions between post-pay and pre-pay set-up and by type of customers (retail vs corporate)?
- What are the types and mix of services (voice, messaging, data and content) that are currently on offer to clients?
- Is the company offering, or has plans to offer, new services such as unified messaging, collaboration and content, enabled by digitalisation of the network and the ecosystem?
- Does the company offer digital channels for customers to engage with and resolve their issues? Is it possible for a customer to conduct an interaction solely through digital channels, without recourse to offline and traditional channels?
- What is the revenue model being employed? What is the mix of the subscription-based model versus the pay-per-use model?
- What is the offtake for these services? What is the company's expectation for growth?
- What proportion of the subscriber base is from the machine to machine (M2M) segment? What are the growth trends?
- Who does the company compete with in providing these services? What is the company's strategy to manage competition?
- How much does it cost to acquire customers? What are the key expense heads under acquisition costs?

2. What is the extent and type of data usage? What are its key drivers and limitations?

- What are the drivers of data usage in the key markets?
- What is the economic cost [including the cost of last-mile connectivity, spectrum, trunk and the notional profits lost due to over-the-top (OTT) services such as Skype and WhatsApp] of providing data?
- What is the data capacity on the company's network?
- Have there been any bottlenecks or constraints in providing data services?
- What is the prevalence of bundling and unlimited usage plans in the market? How does the company's offerings compare with those of competitors?
- How much demand is attributable to messaging and data use from M2M automated alerts sent by service providers like banks?
- What proportion of the demand for data can be attributed to Internet of Things (IoT)-enabled applications?

3. What is the degree of price sensitivity for telecom services in the company's key markets?

- How much does demand change in response to a unit change in price? How does this vary across the different services?
- Is the degree of change in demand in response to price changes stable across price points or does it differ at various price points?
- Is the competition in key markets predominantly based on price levels?
- If not based on price levels, how does the product and service differentiation work?
- How differentiated are the company's services in key markets relative to those of competitors?
- How does the company's differentiation strategy vary with type of content provided (voice vs data) and type of end-user (retail vs corporate) being catered?

4. What are the various data points about the usage and behaviour of customers the company harvests?

- How does the company monetise this usage data? What are the potential additional options being considered to better utilise this information?

5. How does network coverage and quality affect demand for the company's services?

- How does the company's network coverage compare with that of competitors, in terms of population reach and geographical spread?
- How do consumers perceive the network quality and coverage of the company in relation to other operators? Is there any industry study or market survey to substantiate these perceptions?
- To what extent does improvement in network quality and coverage result in increased adoption of a company's services?
- How does this sensitivity of usage to network quality compare with sensitivity to prices?

6. How easy is it for new players to enter and compete? What are the entry barriers?

- What are the regulatory barriers faced by new entrants?
- What are the investments required for a new entrant to set up network and start offering services?
- Is there a likelihood of a new entrant potentially disrupting the company's market position? What could such a player do differently?
- Are mobile virtual network operator (MVNO) licences permitted in the company's key markets? If yes, then how successful has the model been?
- Has the entry of new players or MVNOs affected business? How does the company plan to manage these challenges?

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7. To what extent does regulation affect demand for telecom services?

- Does regulation tend to be ex-ante or post-facto in nature?
- Are operators free to decide on pricing or is pricing driven by the regulator?
- Is the regulatory regime technology-neutral?
- Does regulation cover quality of service (QoS) norms?
- Are there regulatory requirements on providing service in underserved areas (for instance, are there any Universal Service Obligations)?

8. How does regulatory changes affect the company's business units?

- What are the specific instances of business impact due to regulatory issues?
- How did the company manage the impact, if any, of regulatory changes in the past?
- How prepared is the company to manage regulatory interventions in the future?

9. What are the Interconnect Usage Charges (IUCs) across the key markets?

- What is the regulatory stance on IUCs?
- Is there an asymmetric IUC regime in place? If yes, then what is the impact on the company finances?
- How are IUCs expected to evolve?

10. What is the penetration rate of telecom services across the key markets? How are these evolving?

- What is the per capita availability and usage of telecom services (in terms of number of connections, voice and data capacity)?
- How much potential space does this leave for new subscriber growth?
- What is the population expenditure on telecom services as a share of GDP?

11. What are the urbanisation levels and purchasing power of the population across the key markets?

- What proportion of the population in key markets is urban? How is this forecasted to change in the future?
- How does the Average Revenues Per User (ARPU) in the key markets compare to the per capita disposable income? How is this expected to evolve in the future?
- What are the other long-term demographic, social or macroeconomic factors affecting demand for telecom services in the key markets?

12. What is the extent of threat from OTT services such as Skype and WhatsApp?

- What is the estimated loss due to OTT services substituting traditional telecom services such as voice and messaging?
- Typically, how much of the total data consumption in the key markets is attributable to the use of OTT services?
- What is the company's strategy to manage disruption from OTT services?

13. What is the company's strategy to leverage opportunities arising from digitalisation?

- To what extent is the company using data analytics to improve efficiencies and effectiveness of marketing, optimise pricing, make tailored offerings, reduce customer churn and improve collections?
- How do digital solutions help in monitoring utilisation levels of the company's network and optimising deployment of capacity? How much efficiencies and cost reductions have been achieved as a result?
- Does the company foresee increasing virtualisation of the network hardware? What are the likely implications on capital requirements, demand, cost and competition?
- How does the company plan to integrate, or make interoperable, its legacy IT systems to enable seamless and fully digital operations? What are the challenges in achieving this?
- How is the company's leadership managing organisational and workforce challenges while executing its digital strategy?
- Does the company have plans to participate in agencies such as information technology services, content and financial services? What is the preferred operating model (in-house vs independent business unit vs partnerships) to offer these services?
- As a strategy, does the company intend to create and maintain its own platforms for providing and distributing various services or does it seek to achieve interoperability with existing platforms?
- How comfortable is the company in working with open platforms, standards and technologies?
- What is the company's stance on net neutrality?

14. What are the subscriber net additions and churn rates in the key markets?

- What has been the average subscriber churn rate over the past three years? How has it evolved?
- What have been the key factors leading to loss of subscribers?
- What has been the company's track record on customer satisfaction? How are the satisfaction levels tracked and measured?

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Fixed-line Telecoms

15. What are the ARPUs and realisations in key markets? How are these evolving? What is their sensitivity to pricing?

- What are the pre-pay and post-pay ARPUs for voice and data?
- How have the ARPUs evolved and what are the company's expectations?
- How has the rise in data usage and introduction of unlimited calling plans affected the ARPUs?
- Can the impact on ARPUs from falling price level of services be quantified? Do usage volumes rise to a level sufficient enough to maintain ARPUs?
- What are the ARPUs and volume of usage (text messages and data) in the M2M segment? How are these evolving?
- What is the average realisation (revenue less cost) in each segment? How is it affected by changes in usage volumes and pricing?

16. How has the company performed on QoS norms?

- How does the company's performance in providing different services compare with the benchmarks and with other operators?
- Has the company ever been subject to warnings or fines for failure to adhere to QoS norms?

17. What are the company's capex requirements? How is the company placed in terms of capital efficiency, free cash flow, leverage and margins? How did these look in the past and how are they expected to evolve in the future?

- How has the company fared in terms of return on assets (RoA) historically? How is it expected to evolve in the future? What are the likely risks to these expectations?
- How much of the capex requirements is met by internal accruals (cash from operations) versus from external financing?
- What is the ratio of money spent on replacement capex versus growth capex?
- Does the company's operating margin increase with larger growth capex spend? How does this work from a business model perspective? How sustainable is this increase in operating margin?
- If excess growth capex still results in stagnant operating margin, how long will this adverse situation persist? What implications does this hold for consolidation?
- What is the company's position in terms of net debt over EBITDA? How is the ratio likely to shape up in future? What are the company's plans to manage leverage and maintain comfortable repayment capacity?

18. How many pure-play fixed-line providers operate in the key markets?

- Is there a unified telecom services licensing regime which allows an operator to obtain a single licence to offer voice, data and content services?
- What is the level of competition from Wireless Telecom providers?

19. What is the share of fixed-line broadband in the total data consumption in the key markets?

- How has been the growth of fixed-line broadband services in the key markets? Is the current trend sustainable in the medium and long term?
- What has been the company's market share in the overall fixed-line broadband services?
- How are the fixed-line broadband services evolving as a business segment and, more specifically, as a revenue stream to the company?

20. How does the growth in fixed-line broadband compare with that of mobile data in the key markets?

21. What is the company's strategy to bundle content services? What are the challenges foreseen in scaling up these services?

- Does the company offer bundled content services, along with voice and data?
- If yes, what proportion of the current revenue is attributable to bundled services? How does the company see it evolving in the coming years?
- What are the specific challenges for the company, and the industry, when scaling up these services?

22. What is the mix of voice and data usage by the customer base?

- How much of the company's revenue is derived from each type of service?
- How does the mix of voice and data usage vary between retail and corporate users?

23. How does the cost structure compare with that of Wireless Telecoms? How is it expected to evolve?

- What are the various components of the cost?
- How does the cost structure compare with that of other Fixed-line and Wireless Telecom providers?

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Wireless Telecoms

24. How is spectrum allocated and priced in the company's key markets?

- Is spectrum bundled with the licence or must they be acquired separately?
- What is the pricing model used in key markets to allocate and licence spectrum? Is the spectrum auctioned, assigned on revenue-sharing basis or on fixed-cost basis?
- What is the acquisition cost of spectrum per megahertz?
- Typically, for how long is the spectrum allocated or licensed to an individual operator? What is the extension or renewal process?
- What are the differences, if any, in the spectrum allocation process for existing operators and new operators?

25. What are the details of the company's spectrum holdings?

- How much spectrum does the company hold?
- In what frequency bands are these held?
- What proportion of the spectrum in each band is held in the preferred lower frequencies (which provide larger coverage and better indoor reception)?
- How much spectrum is available per million users, at the industry level and for the company?
- How much of the population does the company's spectrum cover, in its licence areas?
 - How much unused spectrum does the company hold? How does the company intend to monetise the unused spectrum?

26. What are the headwinds for market consolidation?

- How many licences does the company hold in the countries/provinces it operates in?
- What is the market share in each licence area, country and province?
- How intense is the competition in each licence area?
- How many operators typically offer services in each licence area and how is the market share distributed across the players?
- What are the headwinds for market consolidation?
- What are the regulatory hurdles in the road to consolidation?
- Are there caps prescribed by the regulator in terms of subscriber share, revenue share and spectrum holdings within licence areas, and at regional and country level?

27. What is the profile of mobile data consumption?

- What is the share of mobile data in total data consumption in the key markets?
- What is the per capita usage of mobile data?
- At what rate is the per capita consumption growing?
- How do per capita usage and growth of the company's customers compare with the industry trends?
- How does the mobile data growth compare with that of fixed-line broadband?

28. What is the availability and affordability of smart devices across the key markets?

- What is the penetration rate of smartphones across the key markets? What are the growth prospects?
- How affordable are smartphones in the key markets and across customer demographic groups (by age group and socio-economic category of the population)?
- Is there any strategy to subsidise the cost of smartphones and thereby increase adoption by customers? If yes, then how does the cost-benefit equation work?

29. What is the mix of revenues and profits by type of user (retail vs corporate) and by type of subscription (post-pay vs pre-pay)?

- What are the ARPUs for each user and subscription type?
- What are the realisations in each segment?
- How do the ARPUs and realisations compare with those of peers?
- How are ARPUs and realisations expected to evolve?

30. What roadmap does the company envision to implement technology and network upgrades?

- How much of the company network is on 2G/3G/4G networks?
- What is the roadmap for deployment of 4G/5G networks?
- How mature is the device ecosystem in the key markets to support roll-out of next-generation networks?

31. What is the company's strategy to grow the corporate/enterprise segment of the user base?

- How do the ARPUs, realisations and churn rates of corporate/enterprise users compare with those of retail users?
- Is there a specific strategy to grow business from the segment?

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Environmental, Social and Governance (ESG) Aspects

32. What are the company's ESG principles, practices and track record?

- a. What is the company's strategy, practices and track record in reducing the energy intensity, water intensity, emissions intensity, waste generation and overall environmental and ecological footprint of the services and operations?
- b. To what extent are alternative/renewable energy sources used for operations, specifically to run facilities such as network equipment, mobile tower stations and data centres?
- c. How does the company ensure sustainable product life cycle management of the network equipment it uses and the devices used by the customers? Does the company recover, or facilitate recovery of, any material from end-of-life equipment?
- d. How does the company ensure safe disposal of customer devices and e-waste generated from operations?
- e. Given the extensive use of electronic equipment across the industry, by both the service providers and the customer, is the company exploring technology solutions that will entail less-frequent replacement of hardware and considering software upgrades instead?
- f. What is the company's stance on the potential health hazards of electromagnetic radiation (EMF) from base tower stations and from wireless devices used by customers? Is there any research programme or collaboration with other organisations to investigate this?
- g. How does the company ensure customer devices are labelled appropriately to indicate the level of EMF radiation?
- h. What are the steps taken to ensure the safety of the company's employees and contractors from aspects such as EMF radiation, noise from back-up power equipment, optical hazards (due to exposure to laser light during fibre optic cable connection activities), travel and work in remote sites and fire risks?
- i. What are the measures practised to ensure customer privacy and safety of customer data the company collects and stores? Have there been any breaches of customer privacy or data?
- j. What is the company policy regarding marketing communications sent by third parties using the company network? Do customers have the option to opt-out or manage use of such communications?
- k. Does the company face allegations, investigation, litigation or other legal proceedings related to anti-competitive behaviour, anti-trust and monopoly practices, corrupt practices in obtaining approvals, licences and spectrum or any other aspects?
- l. Has the company ever been fined or warned by the telecom regulator for any reason?
- m. Given telecommunications infrastructure is often considered a strategic asset, what are the measures taken to prevent sabotage and recover from any eventuality arising from natural or man-made disasters?