The longest hangover

The telecoms industry has not yet fully recovered from the party that ended with the bursting of the Dot Com boom in March 2000 and as mobile broadband is now effectively a utility, regulators need to rethink their approach to the industry.

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The party ended a long, long time ago

The darlings of the stock market

A long, long time ago, back in the 1990s, the mobile industry was to the technology industry, what Artificial Intelligence is today. It was cool to work for a mobile operator, the pay was good, the parties legendary and investors were happy. Unfortunately, the party ended with the bursting of the Dot Com Bubble in March 2000 and more than 20 years later the industry is still suffering one of the longest hangovers in corporate history. The share price of Vodafone, the once feted mobile group, vividly illustrates the rise and fall of the mobile industry. In this paper we explore the economics behind the Vodafone share price trend and look at the role of the mobile industry today and why regulators and competition authorities need to rethink their approach to the sector.

Exhibit 1: Vodafone Group share price

Source: London Stock Exchange

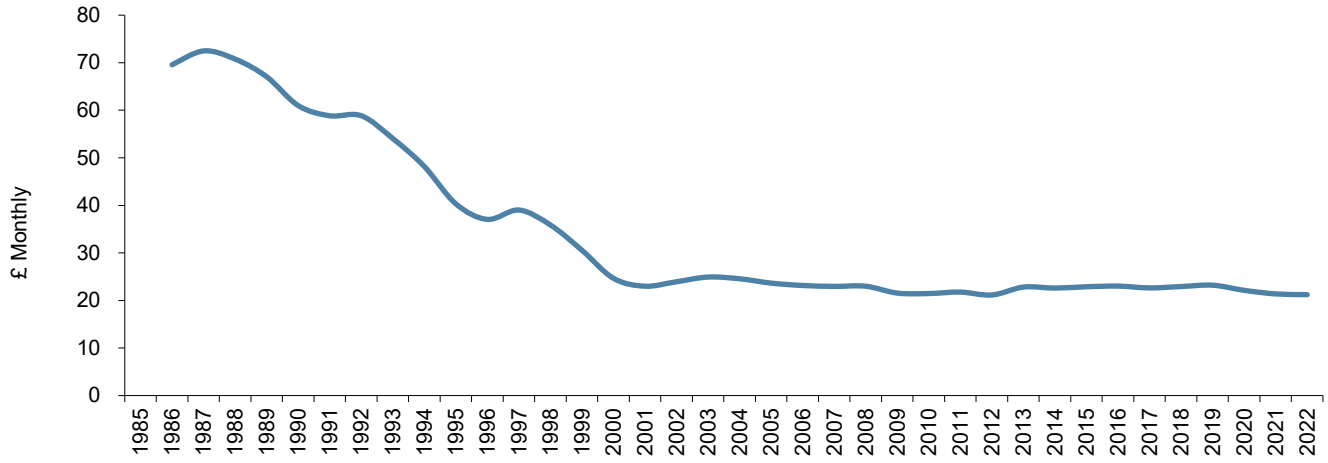
A dull boring utility

In the 80s and early 90s a mobile telephone was a luxury for city yuppies[1]. Customers paid connection fees for the privilege of subscribing to a mobile network and ARPUs were staggeringly high (see the chart below), especially as all a customer could do in those days was make a voice call and possibly send an SMS if they were lucky enough to have coverage.

In 1998, penetration in the United Kingdom was only just above 20%. However, the launch of prepaid in 1999 was the first important step towards mobile becoming a utility, and four years later, penetration had grown to over 80%. Mobile industry revenue growth peaked in 1999 and represented the point from which the industry began to slowly morph into a dull and boring utility.

1 Yuppie: a fashionable young middle-class person with a well-paid job

Exhibit 2: UK average industry ARPU in nominal terms

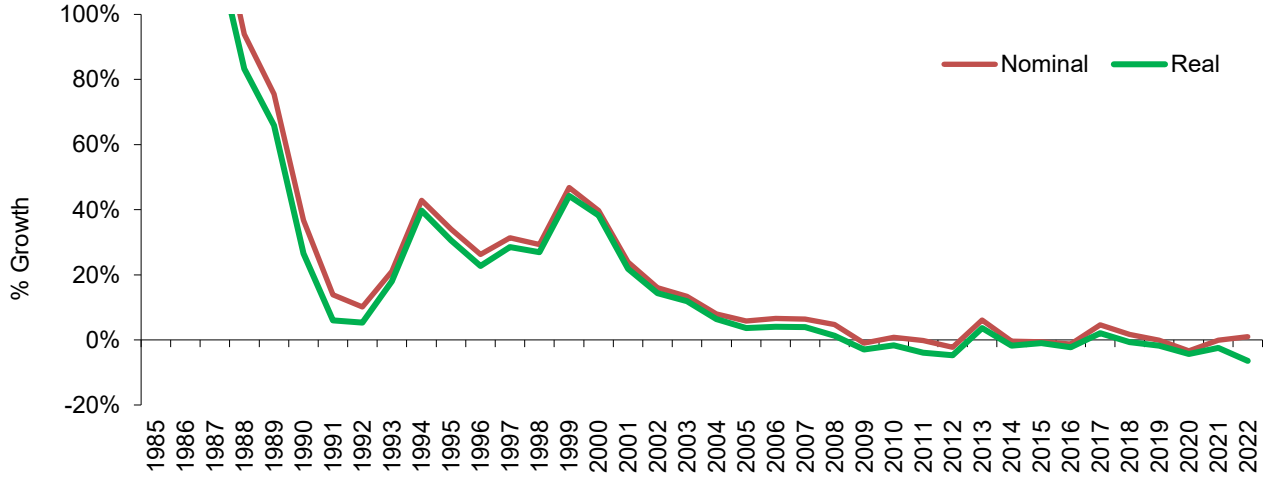


Source: Operator statutory accounts, Ofcom

The chart of UK average industry nominal ARPUs reveals that the mobile industry has been remarkably successful in continuing to extract the same level of revenue from customers for the last 20 years. Of course, in real terms, ARPUs have been declining and the industry has only been able to maintain nominal ARPUs by first bundling ever more minutes, then ever more texts, then ever more data and now ever more data at faster speeds in ever more places for the same price. The consumer has certainly benefitted from the commoditisation of the mobile market and its transformation into a dull, boring, mature utility. This pattern has repeated countless times across mobile markets around the world.

The chart of UK industry revenue growth below illustrates clearly how slowing penetration growth and flat ARPUs have resulted in flat nominal revenues and declining revenues in real terms – once again, a pattern that is repeated across the majority of mobile markets.

Exhibit 3: UK industry revenue growth

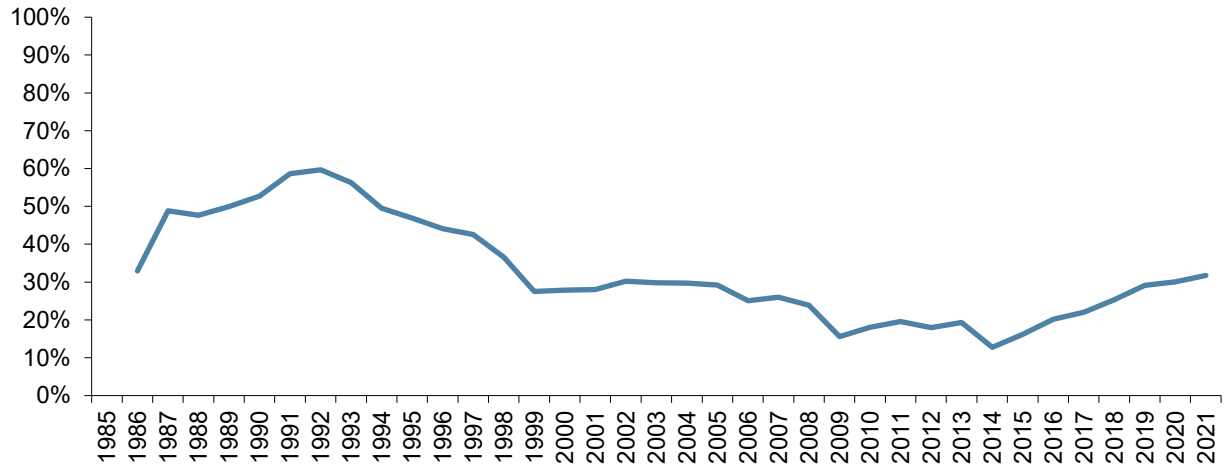


Source: Operator statutory accounts, Ofcom

If your revenue is flat or declining and yet you are having to offer your customers more voice, more SMS, more data and faster speeds in ever more remote parts of the country whilst keeping pace with a rapid evolution of technologies from 2G, 3G, 4G and 5G this is going to have inevitable consequences for cost base inflation and increased capital expenditure. Let's start with the cost base.

The chart below shows average mobile network operator EBITDA margins. The chart reveals the impact of running multiple technologies in parallel, whilst simultaneously offering your customers ever greater value for money in a highly competitive five-player market. Prior to 2010, the UK comprised five mobile network operators and despite a decade of downsizing, rightsizing and so on, it was only when the industry began to consolidate with the merger of T-Mobile and Orange in 2020 did the industry slowly begin to show some signs of recovery. Margins in the UK still remain below European averages which typically hover around 40%.

Exhibit 4: Average UK MNO EBITDA margins

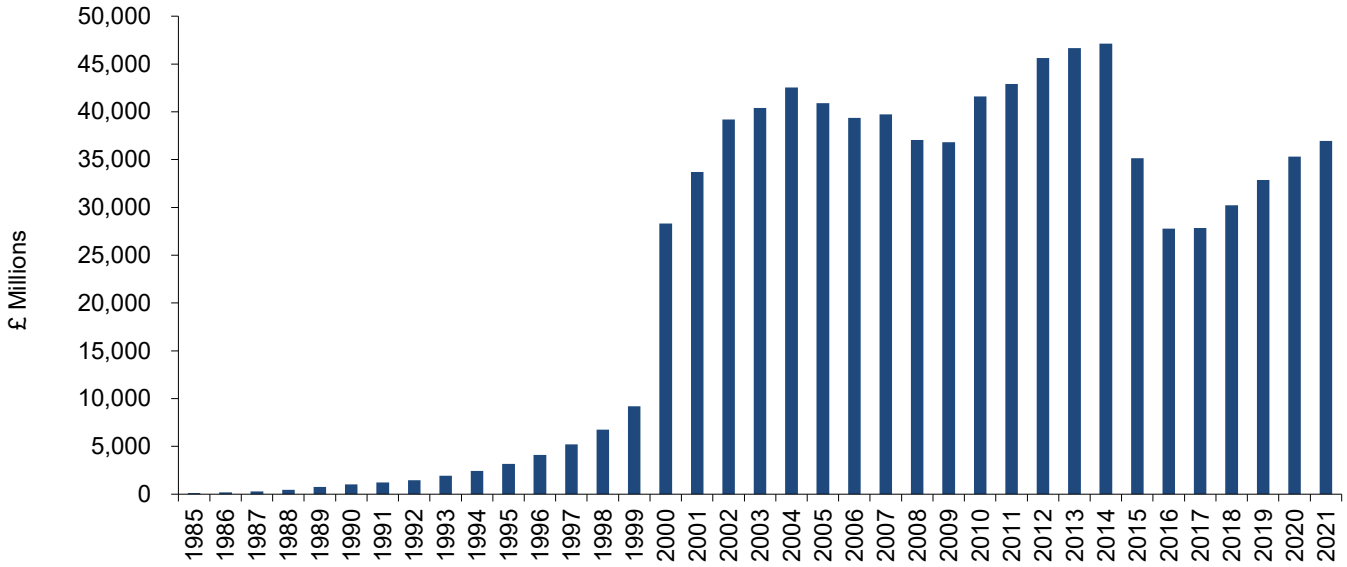


Source: Operator statutory accounts

Whilst the UK market currently comprises four operators, which may consolidate further to three with the proposed merger of Vodafone and Three, passive network sharing agreements, such as the one between EE and Three mean that at the network infrastructure level there is less duplication which helps explain the improvement in profitability in recent years.

So far, we have only looked at the UK mobile industry from a Profit and Loss perspective. Many industry observers and regulators it seems, only ever look at the operator's P&Ls. They look at average mobile operator EBITDA margins in the range of 40% and compare it to a supermarket such as Tesco, which delivered an operating margin of 3.4% in 2023, and believe that the mobile industry is in rude health and more than capable of paying billion dollar price tags for new spectrum, investing in 5G technologies and extending coverage to ever more rural parts of Great Britain. What many observers fail to consider is what has happened to the mobile industry's Balance Sheet and the investment and capital required to provide ever more data, ever faster speeds and in ever more remote parts of the country.

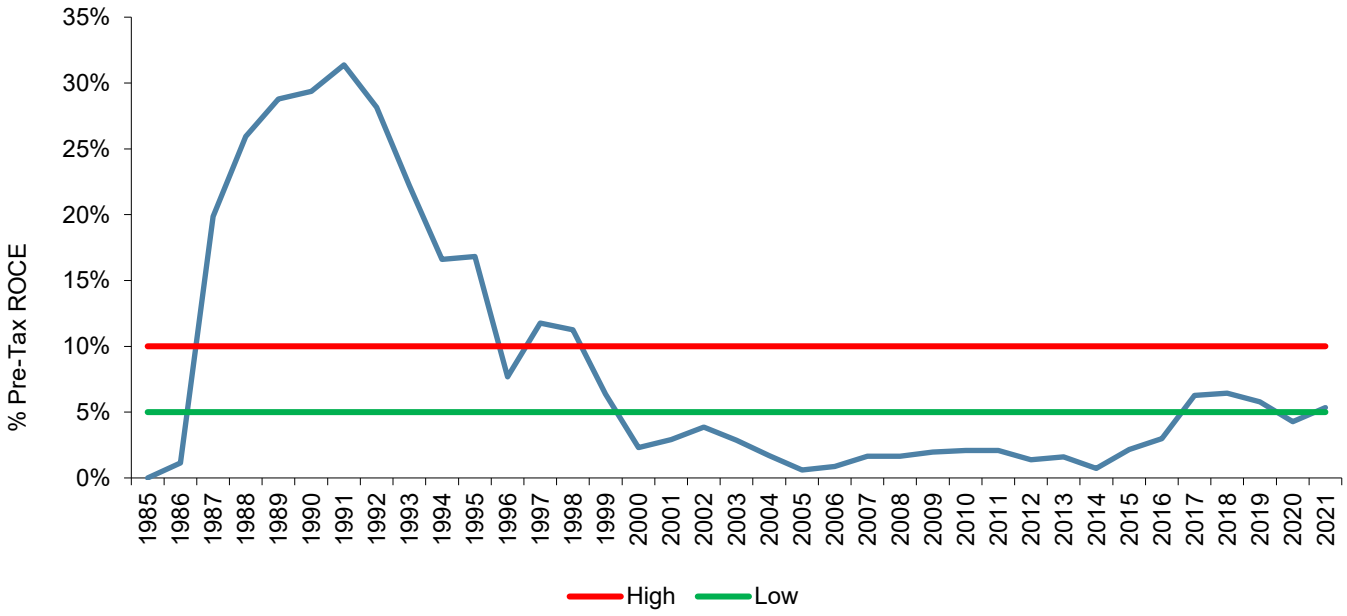
Exhibit 5: Total capital employed



Source: Operator statutory accounts

The total capital employed in the UK mobile industry is staggeringly high, especially when you consider that the industry has endeavoured to reduce its capital requirements through tower sales and a merger. To say that the mobile industry is capital intensive fails to fully capture the extraordinary amount of capital required to deliver mobile broadband. The total capital employed in 2022 of the top 20 largest mobile operators in world was US$ 1,574,833,000,000. That is a lot of capital on which a reasonable return needs to be earned. When we combine stagnating revenues, with depressed profitability and high levels of capital, it is not surprising that the resulting chart for the Return on Capital Employed is not a pretty one.

Exhibit 6: Total mobile industry pre-tax return on capital employed



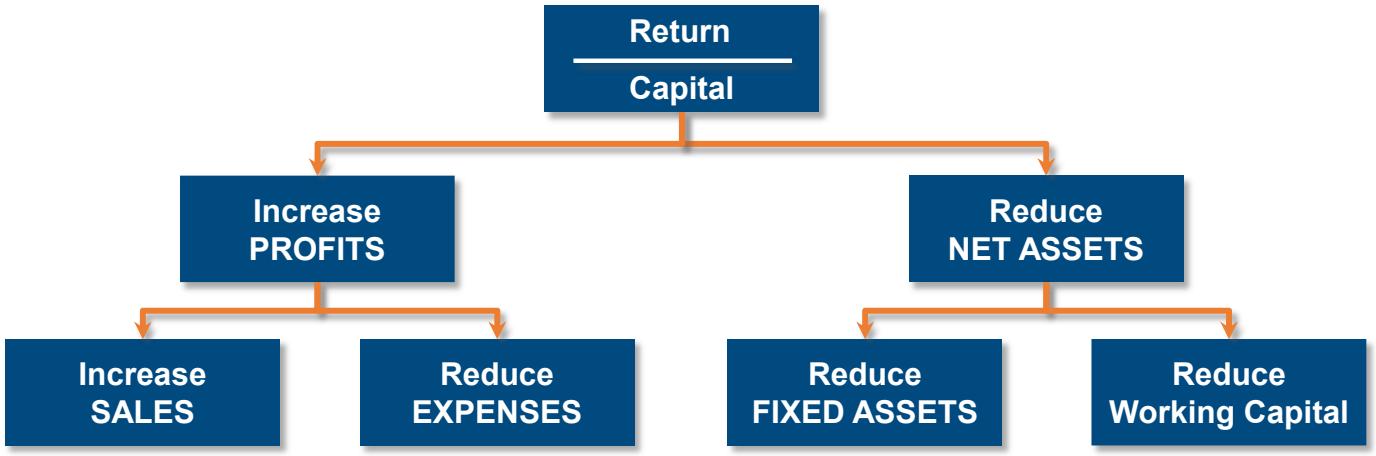
Source: Operator statutory accounts

There are two striking aspects to the previous chart. The first is the impressive returns that the industry enjoyed during the 80s and 90s and it is no surprise that the industry was indeed the darling of the stock market prior to March 2000. The second is how low returns have been relative to even a low estimate of a nominal, pre-tax weighted average cost of capital of say, 5%. For the last 20 years, shareholders would have been much better off putting their cash in a high street bank's savings account on a risk-adjusted basis. The mobile industry in the UK has failed to earn its cost of capital for more than 20 years and when looked at in this light, the Vodafone share price performance is entirely understandable. Unfortunately, this chart can be replicated for most mature, developed mobile markets.

Today it is difficult to imagine a world without mobile telephony and the industry is now an essential utility, similar to water, electricity and gas. However, in order to continue to meet the needs of customers, the mobile industry must be able to generate a return that meets or exceeds its cost of capital. Even the most patient shareholders will eventually take their capital and seek a higher return elsewhere. Governments and regulators must ensure that the industry can earn a reasonable return. The fundamental question is, therefore, what must happen in order for returns to increase above the cost of capital.

There are only two ways to improve the returns in the mobile industry. The industry either needs to make more profit / return or deploy less capital.

Exhibit 7: Return on capital employed



Source: Coleago

Let's begin with reducing the capital employed. Capital is used to fund Net Assets which comprise the industry's Fixed Assets (mainly towers and spectrum) and Working Capital (the difference between debtors, stock and creditors). In practice, working capital is negligible compared to the value of spectrum and towers. The industry therefore needs to focus on reducing its Fixed Assets which comprises its tangible Fixed Assets such as towers and its intangible Fixed Assets such as spectrum.

The industry has already made the big moves in relation to tangible Fixed Assets by sharing towers or selling them off, but as our analysis has shown, this has not been enough. We must therefore shift our focus to the intangible Fixed Assets which are dominated by spectrum. The industry cannot live without spectrum and governments are unlikely to refund historic spectrum fees. Indeed, governments and regulators are moving in entirely the opposite direction and continue to expect the industry to pay high prices for spectrum which are often accompanied by demanding coverage obligations which require even greater capital. Spectrum auctions only serve to further depress returns within the industry – see our paper on the defensive nature of spectrum acquisition.

It is difficult to see how the industry will be able to materially reduce its capital employed and, with growing traffic and future spectrum auctions and coverage obligations in the regulators' roadmap, the need for capital is more likely to continue to increase.

Any improvement in the return on capital employed will have to come from increased profitability. There are only two ways to increase profits – either sell more or spend less. Veterans of the mobile industry will tell you that they have seen it all; business process reengineering, down-sizing, right-sizing, outsourcing, introducing AI and chat bots into the call centre and so on. There is a limit to how much cost can be extracted from a business before customer service begins to suffer and with average margins at around 40% that point has largely been reached. There are only small marginal gains to be had from further cost cutting and efficiency gains and certainly not enough to deliver the improvement in profitability required to lift the return on capital employed above the WACC. So that only leaves selling more – increasing revenue.

Our earlier charts on ARPU and industry revenue growth have shown that customers are reluctant to pay more for their data and increased network speeds. Indeed, governments and regulators want to see lower rather than higher consumer prices.

Increased revenue must therefore be sought elsewhere - new sources of customers and revenues must be found. The industry has made valiant efforts to generate new revenue streams from new customers. A key area of focus has been connectivity and services in the IoT space. Whilst companies such as Vodafone have made significant investments in this area, their reported IoT revenues remain largely a rounding error in terms of total revenue. Material revenue growth in revenue is only likely to come from the consumer related arena. Unfortunately, the combination of regulatory restrictions on what network operators can do with their customer data and the greater agility of start-ups from Silicon Valley have meant that the mobile industry has struggled to capture additional sources of revenue from outside its existing customer base. Of course, it is not just that the network operators have failed to benefit from increased revenues, they have had to invest in the capacity to carry the traffic of those companies that largely make up the Nasdaq index and which have exploited the network the mobile industry provides to its customers.

Exhibit 8: Nasdaq composite index

Source: Nasdaq

Whilst the Dot Com boom and bust heralded the start of the long hangover the mobile industry has had to and continues to endure, for the likes of Facebook, Google, Amazon and Netflix the party was only just getting started.

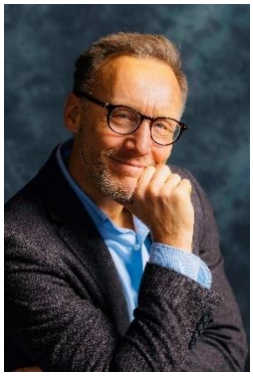
The mobile industry is an essential element of modern society and has generated so much benefit for so many. The industry must not only survive, but thrive, and so operators must be allowed to earn a return that meets or exceeds its cost of capital. This will most likely only be possible if some or all of the following is allowed to happen:

- greater consolidation to reduce capital employed;
- low spectrum prices and no demanding coverage obligations to limit future growth in capital employed;
- the ability to utilise its understanding of its customer to drive additional revenues in the same way that many of the companies using its network already do; and
- the ability to seek revenues from those that drive the demands for capacity on its network.

Governments and regulators must fundamentally rethink their approach to the mobile industry. The industry needs a hangover cure, and fast.

About Coleago Consulting Ltd

Graham Friend, M.A., M.Phil., (Cantab), ACA, is an economist, an award-winning author and the Managing Director and Co-Founder of Coleago Consulting. Coleago is a specialist telecoms strategy consulting firm and advises regulators and operators on issues relating to spectrum, regulation and network strategy. If you would like to discuss any of the issues raised in this paper, then please contact Graham.



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