

The new broadband utility and the Openreach debate

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A utility like all the others

There is nothing new about the Openreach debate and the future of broadband. It is a debate that has played out for all the core utilities, in some cases for over a century. It is just that Openreach, its owner BT, and many of the users have yet to appreciate the central fact – it is a utility, and should be treated as such.

Mention utilities and the automatic reflex is to think of energy, water and transport. These are the paradigm cases – they have high fixed and low marginal cost, and have as a consequence core natural monopoly networks. They provide essential services, without which few businesses or households could function. The government effectively has to guarantee capacity and access, and they are all highly regulated.

Postal services came under state control several centuries ago. Water and transport came under regulatory and government control in the nineteenth century, starting locally and becoming national in the twentieth century. Electricity came a bit later, but the local authorities were involved from the outset and by 1926 Britain had a Central Electricity Board, building a national grid. All these were eventually nationalised, in the main in the great expansion of the state in 1945-51. Latecomers, like telephones, were added to the state owned postal network.

In the second half of the twentieth century, the natural gas network was added to the state sector, creating British Gas. And that was about it until the 1990s. Privatisation in the 1980s and 1990s brought with it comprehensive new regulatory regimes.

Now there is a new utility, broadband. It is new because it is only just becoming essential. In the early stages it was often a helpful extra, augmenting faxes and mobile messages, and growing alongside the fixed and mobile phone systems and the pre-existing communications systems.

Roll forward just 15 years and now it is becoming hard for any business or individual to function effectively without good fast broadband access. In the space of such a short time, broadband has become central to banking, most interactions with the state, to broadcasting output, information, and education. It will grow in its central role in our economic and social lives as the Internet-of-Things and big data sets develop. Smart technologies will mostly work via broadband.

Thus in the next two or three years, it will be as core as electricity, roads and water pipes and as the Prime Minister has argued, should be regarded in the same way. There should, he went on, be a legal right to an Internet connection at more than 10 megabytes per second. It is a system, it has natural monopoly characteristics, and one company has emerged as the dominant one – in this case BT through its Openreach subsidiary.

New utilities follow well-trodden development path

The life cycle of utilities follows a well-worn path. Typically a new technology comes along – trains, cars, telephones and electricity. At the outset, few realise the scale of the potential, and there is uncertainty about how the technology will play out. Entrepreneurs cash in. There is an investment race, and speculative bubbles. Most of the early investors get burnt, but a few survive.

As these survivors cling on, the underlying cost structure gets revealed. With marginal costs very low, competitors fight it out, and mergers consolidate the industry. Networks systems are natural monopolies, and the survivors find themselves able to exploit their market power. This in turn attracts the politicians and the regulators, and once regulation gets going, the time

inconsistency problem arises. How do the investors know that their high fixed and sunk costs will get remunerated, and not be subject to opportunistic behaviours by regulators enforcing marginal rather than average cost pricing?

This regulatory risk replaces the risk of stranding from technical change, which tends to dominate in the initial burst, and then usually settles down to a more pedestrian process. Almost all the utilities were the result of sudden and fast technical change, which ran its course and then settled down. For broadband, globally, this is all about fibre.

The recognition of natural monopoly

The process of establishing a single natural monopoly can be by the private sector (as now) or by nationalisation. For electricity in Japan and Germany, the large vertically integrated companies colluded to form a club, sharing the assets and the access. But the problem has always been that the incumbents want to deny access to their rivals to the final customers via their networks. To keep competition open, these obvious monopolies of access need to be addressed – otherwise the result tends to be an oligopoly or monopoly of vertically integrated players.

In the twentieth century, the credibility of government and regulators (once they had started fixing prices), in avoiding the opportunistic and time inconsistent behaviour was low and undermined investors' confidence. The result was often under-investment in the network systems, and that in turn meant that governments had to step in. Nationalisation proved necessary to solve time inconsistency.

Later on, with privatisation, regulators had to invent a credible mechanism to protect investors. This was the Regulated Asset Base (RAB). This RAB comprises the investors' funds at privatisation and the additional funds to finance investment going forward. The regulator has a duty to ensure that the regulated

monopoly can finance its functions, and this is generally taken as a protection to the RAB, its updating, and a reasonable rate of return upon it.

So successful has this model become that investors are willing to lend at remarkably low costs of capital, not much above the government's own cost of borrowing. This attractiveness to investors is globally recognised. It has become a gold standard for utility regulation. As a result a large investment programme can be carried out outside the public finances. In contrast, non-regulated firms demand much higher returns. This lower cost of capital means a higher level of investment can be afforded.

Internal unbundling versus structural separation

The regulatory regime has also caught up with the competition issues, in access to networks and thence to customers. Early approaches focussed on internal unbundling, separating the network assets and cost allocations from the rest of the companies within which they were integrated.

Separate accounts and separate asset bases have been created. In the difficult and contested case of British Gas, this resulted in a set of very complex Chinese walls, putting an extra burden on the company and the regulators. It failed to provide a credible structure for the competitors and eventually the gas pipes were separated out. In electricity across Europe unbundling also followed the internal route initially, but eventually most networks were split out.

In addition to the obvious competition arguments, it turns out that the lower cost of capital and the financial structure of the networks are very different from the competitive parts of the businesses, and hence shareholders are better off when the assets were formally divested. Thus financial markets finished the job regulators had started.

Openreach should be a stand-alone company

There is now, as a result of the gradual application of the unbundled regulatory and company approach, a body of knowledge and understanding about what is the best way of both rolling out the networks at the lowest costs of capital and promoting open competition on a fair access basis. The structural approach has won out against the intensive internal regulatory conduct model. In the end, it is the incentives that count, and internal unbundling has been seen to be a messy and ultimately unsustainable compromise.

How then do these lessons apply to broadband and Openreach? Broadband presents the two classic utility problems: how to get a full roll out and hence a high level of investment; and how to ensure that all the users have fair and equal access. To these are added a third: how to make it a universal service, available to all, given once the network is in place the marginal costs are close to zero, and everyone benefits from everyone else having access to the system at a fast enough speed.

The first call is on investment, the supply of capital and its cost. In the case of broadband, investors face both technological risk and regulatory risk. Their assets can easily be stranded. The Chief Executive of BT argues that if Openreach is separated from BT, there will be less and more expensive investment, slowing down the roll out of fast speed broadband to all.

As the above arguments have illustrated the opposite is likely to be the case. If the regulator has a duty to ensure that functions are financed, and interprets this as a duty to reward the asset base, and if the costs of the system are charged to all the system users (a systems charge), then the risks are much lower to investing in Openreach than they are to BT. BT has many high risk competitive offerings, with much less secure assets, which have a much higher cost of capital.

Why then is BT so keen to avoid divestment? The answer must lie in its overall corporate strategy to profit maximising, and the protection of the existing, pre-

fibre assets. In particular, there are two key threats to BT from break-up. First, it wants to protect the revenues from its existing copper wires. Second, BT wants to offer a full suite of services to its customers, and the bundling of the Openreach network within this framework gives it an obvious advantage over competitors who need access to its customers through Openreach. Both are in BT's private interest, but neither is in the public interest. The scale of BT's lobbying against break up gives a clue to how important these advantages of integration must be to BT's management.

There is no set of credible internal rules that can overcome these problems, and that is why structural solutions have been widely sought across the utilities. The reasons are that regulators always face asymmetric information relative to incumbents. Regulators cannot know the full costs of incumbents and rivals. Detailed conduct regulation of networks and network access is costly and almost always fails. Indeed, this is already true in the case of BT and Openreach.

It is also true that BT is not yet the only provider of broadband services and that there are several ways of reaching many customers. But with the coming of fibre and the extension of fast universal service, the market is less competitive than BT claims. The key point here is that the network needs to be coordinated, and Openreach is the dominant system operator.

As noted, BT has an obvious incentive to try to protect its existing copper wires and its existing assets. If, for example, a fibre option were pursued with the rigour and urgency that is needed, BT would face potential asset stranding. It is unlikely to promote the fibre option at the speed which would be economically and socially most desirable from the perspective of the wider economy and society, and it will no doubt deploy the usual arguments – including that technical change means that it would be risky to invest in this option now. The argument may indeed have some merit, but the problem is that BT, as an integrated company, does not have clean incentives in presenting it. Why should it be believed?

A better way forward

The history of utilities points to a life cycle that starts with rapid technical change, and gradually settles down. The historically recent development of the RAB-type utility model has marked a big step forward. Broadband is just the latest in a long line of new utilities and it is now at the inflection point.

Whereas Britain led the way in communications in the 1980s and 1990s, the challenge of broadband is proving a struggle and many households and businesses consequently struggle to compete and function in the new economy that communications technologies have ushered in. Other countries are moving ahead, making the necessary investments in a rapid and coordinated way. Britain is falling behind.

The current approach has been to try to regulate Openreach within BT and throw additional public money at the rural and less well served areas. This is both inefficient and slow, and it is also not necessary. Public money is not needed for the new system as a whole: the totality of the customer base can pay the full costs, as they do for energy and water (and indeed for the BBC).

The missing bit is the core utility business, and the full role it should play in developing the system, providing open access and making sure the system is coordinated. The full system operator function is missing, with the result that a patchwork quilt of different players and technologies is badly coordinated and the system is less than the sum of its parts.

The system operator should be given the licence functions to develop and operate the broadband utility system. In return, it should be provided with a guarantee that these functions will be financed. To do this it should be able to levy a use-of-system charge across the customer base. The resulting cost of capital will be low, and it can with confidence leverage private funding to complete the broadband network, including the necessary fibre and other technological components.

Taking a compromise line, once so unsuccessfully adopted for British Gas, will create a host of unintended problems and costs, delay the broadband investment as BT protects its existing assets, and leave competitors to BT's other services at a serious disadvantage.

The lesson from the history of British utilities (and those across Europe) is that structural separation will come. The question is whether it is done now, or British broadband customers are forced to go through the painful and slow process of the intermediate "Chinese Wall" model, with all the costs that this will entail. Broadband will probably end up as a standalone utility. The practical question is when, and at what cost for the delay. For the economy, the risk is asymmetrical – too little, poor quality and slow broadband has great costs. Too much is a much less onerous problem – and a luxury Britain stands little chance of enjoying without the break up of BT and Openreach.