

ZERO-RATING BEHAVIOUR

Does zero-rating harm competition? It's a key question in the net neutrality debate. **TIM HOGG** takes a behavioural economics approach to finding the answer

Net neutrality arouses strong passions and is an intensely political debate. But how does net neutrality impact consumer behaviour, and does zero-rating actually alter consumption patterns? In this article I attempt to ground the debate in evidence and delve into the consequences of zero-rating in particular. A fully-informed debate on net neutrality (that goes beyond a fun if misleading contribution by Burger King – see right) requires understanding of the effects of net neutrality on markets, and thus insight into how net neutrality influences consumer behaviour.

The insights of psychology and behavioural economics into real-world consumer decision-making have demonstrated the importance of the “choice architecture” in which decisions are made. Small (and seemingly insignificant) influences can affect consumer behaviour in ways that traditional economic theory does not account for.

Broadly speaking, net neutrality seeks to ensure the equal treatment of internet traffic. Zero-rating is a commercial strategy, which some believe breaks this principle, whereby the consumption of one (or more) apps or services does not count towards the consumer's data allowance. Zero-rating is most relevant in mobile as a result of data caps (there can be no zero-rating where there are no data caps). These (subtle) differences in how internet traffic is treated can have large ramifications for consumer decision-making, as I explore in this article.

HOW DO CONSUMERS MAKE DECISIONS?

Behavioural economics, which celebrated another Nobel Prize winner last year in Richard Thaler, is the study of how people make decisions in the real world, and the range and the influence of factors affecting those decisions.¹ We all have limited cognitive power and only use it where necessary, resorting to highly efficient rules of thumb much of the time. These mental shortcuts are often very useful, but can lead to systematic patterns of behaviour that might be sub-optimal. Certain behavioural quirks are particularly relevant to net neutrality.

Consumer preferences are not set in stone – they are influenced by both the choice environment and relevant reference points. Rather than an independent, self-contained and dispassionate evaluation, consumers tend to evaluate outcomes by



What a Whopper: Burger King gives fast but costly access to burgers to ‘illustrate’ net neutrality. See the video at bit.ly/2DAJ2ot

comparing them with their expectations, the status quo and other people's outcomes. This leads to “framing effects” where the frame in which a choice is presented impacts the decision that people make. Whether a choice is framed as a loss or a gain can be important.

Consumers are often “loss averse”: they are more sensitive to losses than equally sized gains. The value a consumer places on a product depends on whether they currently purchase the product or not – consumers are less willing to give something up (lose it) than forego something they never had. Loss aversion has been shown to explain strong reactions to mobile bill shocks.² Not only are people often loss averse, but they highly value certainty over small risks. Loss aversion and this “certainty effect” lead to the “flat-rate bias”, whereby people prefer to pay a pre-defined flat rate rather than a usage-based tariff, even when the flat rate costs them more. As I show, the flat-rate bias is relevant to how consumers perceive zero-rated apps.

We often simplify our budgeting by thinking about expenditure in categories, or budgets. This is “mental accounting” – the thought process through which individuals classify, appraise and keep track of their financial activities. These categories may be implicit or explicit, and vary in their strictness. In an extreme case, a consumer will not take from one budget to add to another budget, even if it would be beneficial. This is a “violation of fungibility”, whereby consumers treat an interchangeable good (i.e. money) as non-interchangeable. As I explore, the

way that consumers treat their data allowance may be a violation of fungibility.

The final piece of the puzzle is that many consumers have a desire for fairness. These “social preferences” are important when evaluating consumers’ preferences in relation to net neutrality, which is often cast as a fairness issue.

HOW TO DO CONSUMERS FEEL ABOUT NET NEUTRALITY AND ZERO-RATING?

In 2015, BEREC, the European regulators body, commissioned a study that explored how consumers feel about net neutrality.³ The results of this stated preference survey may, however, overemphasise net neutrality’s importance as it appears to have asked consumers about net neutrality through the lens of fairness. See the panel for a note on stated vs revealed preferences.

Nonetheless, the study does show that the term net neutrality is often misunderstood and associated with fundamental questions of fairness and freedom. Consumers also view reasonable traffic management as that which does not benefit one person to the detriment of another person. (The study also found that views on the fairness of net neutrality varied by country, which raises an interesting issue for European policymakers...)

HOW MIGHT ZERO-RATING CHANGE BEHAVIOUR?

An implicit assumption behind much of the argument against zero-rating is that zero-rated offers distort consumption patterns and therefore distort the market, advantaging some providers. This raises two questions: first, what change in consumption patterns due to zero-rating would distort competition, and second, is this likely?

What change in consumption patterns due to zero-rating might distort competition? A key dimension influencing the competitive effect of a zero-rating offer will be what is included in the offer. Competition concerns are in principle less where the zero-rating applies to all apps within a distinct class of service. For example, there would be no change in the competitive dynamic between Amazon Music and Spotify if both were zero-rated.

However, there may be competition concerns if

STATED VS REVEALED PREFERENCE

Survey data, and other forms of direct questioning of consumers, is commonly referred to as stated preference. That is, it relies on consumers communicating to the researcher what their preferences are. In contrast, revealed preference data relies on the researcher interpreting real world choices and outcomes to infer preferences.

While stated preference data can be more easily attainable, it is not always the most revealing in terms of how people actually behave. This is because it is difficult to “frame” a survey on net neutrality which does not unduly prompt fairness concerns, especially given that consumers have little prior understanding of key terms which then have to be explained by the researcher (resulting in greater risk of framing effects).

Research into revealed preferences would be an insightful addition to our understanding of net neutrality – for example, we could discover how people respond to zero-rating offers in reality.

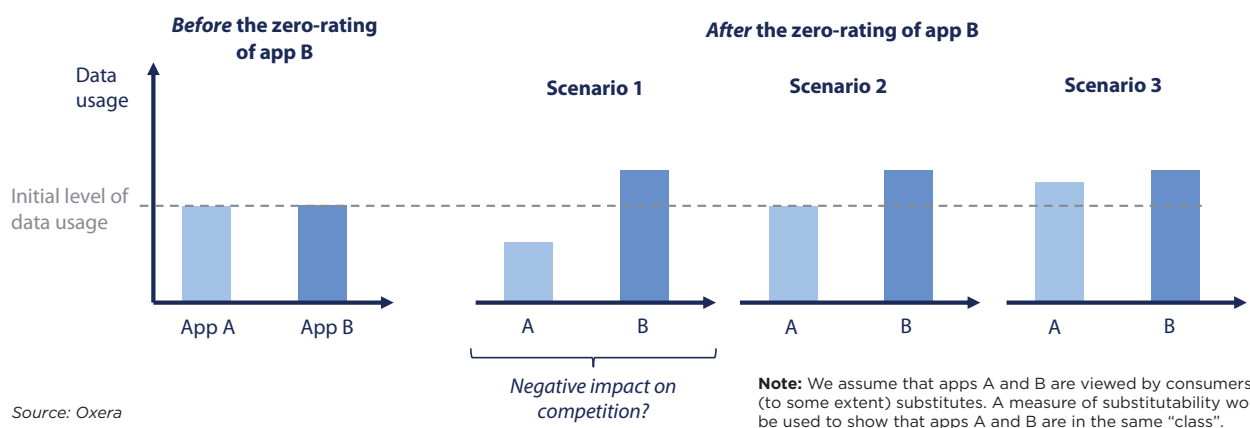
Conjoint analysis is a “half-way house” between stated and revealed preferences. It relies on consumers answering questions posed by the researcher, but the questions are framed in terms of product choice which aims to induce the consumer to reveal their true preferences.

only one app within a class was zero-rated. In this situation we might expect one of the three consumption patterns shown in Figure 1. In this stylised example with only two apps, the consumption of substitute apps A and B was equal before the zero-rating of app B, but not necessarily afterwards. Empirical evidence from trials (i.e. revealed preferences) is needed to understand which consumption pattern would occur in reality.

The consumption of app A is only negatively affected in scenario 1, therefore zero-rating is most likely to distort competition if it results in the consumption patterns of scenario 1. The barriers to entry for potential new apps (which might not benefit from being zero-rated) are also most likely to be greatest under scenario 1. The impact of zero-rating on short-run consumer welfare is also less obviously positive in scenario 1 (overall consumption of the two apps is static, rather than increasing).

Arguably, there is less risk of harm to competition under scenarios 2 or 3, as the consumption of app A is not harmed (although the market shares do still change). The barriers to entry for potential new apps are less likely to be increased by zero-rating where it results in scenarios 2 or 3. We should note, however, that competition is not necessarily harmed under scenario 1 due to the nature of the markets for online apps and services.

FIGURE 1: THE EFFECT OF ZERO-RATING ON DATA CONSUMPTION (STYLED EXAMPLE WITH TWO APPS)



Source: Oxera

FIGURE 2: HOW MIGHT ZERO-RATING CHANGE CONSUMPTION ACCORDING TO THE RESTRICTIVENESS OF THE DATA CAP?

Prior data cap restricting consumption greatly



Consumers more aware of own consumption patterns, and therefore more aware of the benefits of treating the data allowance as fungible
 But, as the chances of incurring overage charges are greater, the flat rate bias is more likely to influence behaviour

Prior data cap restricting consumption little



Consumers less aware of own consumption patterns, and therefore less aware of the benefits of treating the data allowance as fungible
 But, as the chances of incurring overage charges are smaller, the flat rate bias is less likely to influence behaviour

As Google often says, “On the internet, competition is one click away”: searching and switching between apps is often cheap and easy (and in any case consumers often “multi-home” – use multiple competing apps. Consumers also tend to be highly engaged in their choice of apps, so high-quality apps can gain market share without the large investment in customer acquisition that we often see in regulated markets.

In other words, the competitive conditions in the market may be such that the scope for competition concerns from zero-rating might be little – in the long run we would still expect the best apps to gain the most usage and market share.

Is scenario 1 (non-zero-rated apps lose consumption) likely? As we have seen, a distortion is most likely under scenario 1 (in Figure 1), but are the consumption patterns of scenario 1 likely to occur? Consumers are attracted to consumption which is associated with no risk of incurring overage charges or running out of data (the flat rate bias). The flat rate bias would be a force for consumers preferring consumption of the zero-rated app (B) over the other app (A). In other words, the certainty (of no loss) provided by the zero-rating to app B might lead consumers to switch consumption to app B. Therefore the flat rate bias makes the consumption patterns of scenario 1 more likely.

In theory, scenario 3 requires consumers to mentally move the data usage (implicitly) allocated to the zero-rated app to the data-capped app, as the portion of the finite data allowance which was spent on the zero-rated app is now available for use elsewhere. Therefore scenario 3 requires consumers to see the data cap as fungible between apps. However, we might expect there to be a violation of fungibility here, as has been shown to exist with mental accounts for money.⁴ This violation of fungibility will decrease the likelihood of scenario 3 and increase the likelihood of scenarios 1 or 2.

The impact of zero-rating also clearly depends in part on whether the prior data cap is “biting”, as explained in Figure 2. There are two countervailing forces if the data cap is restricting consumption. First, the risk of incurring overage charges is greater, so the flat rate bias might be more important (making scenario 1 more likely). Second, consumers are likely to be more aware of their usage and therefore more aware of the benefits of shifting their consumption from one app to another in a fungible manner (making scenario 1 less likely). The overall impact is an empirical question. Unsurprisingly, the BEREC analysis found that the demand for offers which included zero-rating (on

some apps) is greater when the data cap is lower.

However, the consumer choice between apps is often not exclusive in the online environment. Multi-homing means that consumption of one app is not necessarily to the detriment of another. This would tend to increase the likelihood of scenario 3 occurring (especially where the competing apps have low or zero prices), and therefore reduce the risk of zero-rating harming competition.

Ultimately we will not know the answer to the question of how zero-rating affects consumption until a revealed preference field experiment is conducted – e.g. a randomised controlled trial in which an app is zero-rated for a sample of real consumers. Alternatively, a mobile operator which has already introduced zero-rating could use econometrics to analyse existing consumption data to illustrate the impact of zero-rating.

HOW SHOULD ACTUAL CONSUMER BEHAVIOUR CHANGE POLICIES ON NET NEUTRALITY AND ZERO-RATING?

It may be that zero-rating has little effect on behaviour, in which case the debate over zero-rating would be moot (regulation would be disproportionate). If, however, zero-rating of one app (within a class) was shown to cause a significant negative impact on competition then it might be appropriate to consider whether such zero-rating should be allowed. Although, as we discussed earlier, even where zero-rating does reduce the consumption of other apps (scenario 1), this does not necessarily mean that competition will be harmed (due to the nature of the markets for online apps and services).

Finally, we should note that there may be little difference in practice between the effect of zero-rating and the effect of the internet service provider subsidising an app (e.g. if a mobile operator offers Spotify for free). If subsidising of specific apps is allowed, then why not zero-rating?

CONCLUSION

Whether zero-rating is likely to harm competition is an empirical question. Evidence on data consumption before and after zero-rating is likely to be of key importance. The behavioural economics toolbox helps to understand the drivers of consumer behaviour, but field experiments and real world data will also inform the policy debate.

TIM HOGG is a consultant in Oxera's telecoms, media and technology team, specialising in regulation and behavioural economics. The article was inspired by Oxera's work on net neutrality and zero-rating, but reflects the author's own views, not necessarily those of Oxera. Thanks to colleague Charlie Vlieland-Boddy.

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