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Would you like Wi-Fi with that? The behavioural economics of bundles

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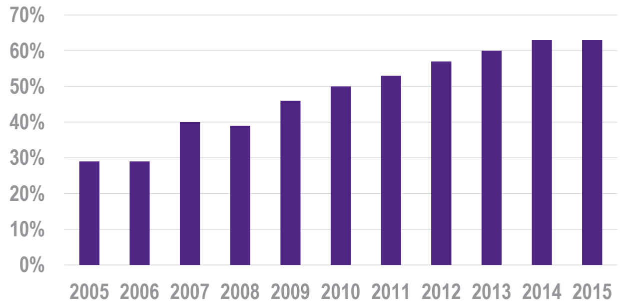
By understanding why consumers choose to purchase bundled services, operators can offer more attractive products and regulators can better interpret the dynamics of these fast-changing markets. Telecommunications consumers are typically conscious of price, quality and their consumption habits – they are ideal subjects for behavioural economic analysis. However, little is known about the behavioural underpinnings of bundling. This Insight sets out to change that.

In this paper a bundle is defined as the single purchase from one provider of multiple telecommunications services. In the UK 36% of households purchase the bundle of fixed broadband and voice,* with an additional 25% of households purchasing the bundle of TV, fixed broadband and voice.

Bundling in telecommunications retail markets is growing, as shown below for the UK, with nearly two thirds of households now purchasing a form of bundle.

Upward trend in bundling

Proportion of households with a bundle of telecoms services



Source: Plum Consulting, Ofcom Communications Market Review

Convergence has increased the ability of operators to offer multiple services over a single network. At the same time consumers have progressively demanded packages that combine different telecommunications services.

Consumer demand is driven by rational and consistent maximisation of personal benefit, and the idiosyncratic psychological ways people actually make decisions. Households in the OECD typically use around 5% of their income on communication and ICT expenditures – consumers have adequate incentive to optimise these consumption decisions.[1] When purchasing a bundle of telecommunications services the consumer benefits in a number of ways:

- There is only one decision point. Decisions, especially complex ones, are costly in time and effort.
- There is a single (regular) payment. Payments are associated with negative emotions.
- There is only one provider with whom to deal with in future.
- Bundles may also be cheaper.

Behavioural economics is the study of economic decision making in the light of advances in psychology. The rest of this paper explores what it can tell us about bundling through exploring:

- What is the decision-making process?
- Who is more likely to bundle?
- How does bundling affect consumption?
- How might firms encourage bundling?
- How might behavioural economics inform regulation of bundles?

What is the decision-making process?

Behavioural economics has found that people are boundedly rational: that is, when faced with a complex decision they either attempt to simplify it using rules of thumb (“heuristics”) or do nothing.

One way of describing the way people think about budgeting decisions is mental accounting. Mental accounting is the thought process through which individuals and households classify, appraise and keep track of their financial activities.[2]

* Although this may be difficult for consumers to avoid in the UK where fixed broadband and voice packages are aggressively promoted.

Individuals simplify their financial budgeting by thinking about their expenditure in categories, or budgets. For example, they might have a budget for their mobile phone bill and a separate budget for their fixed broadband. These budgets may be explicit or implicit, and vary in their strictness. In an extreme case a consumer will not take from one budget to add to another budget even if this might increase total utility (a violation of the fungibility of money).[3]

The key question is whether consumers have a single telecommunications budget or a number of smaller more specific budgets.[†] They may prefer to think about a number of budgets as this is a way of simplifying a potentially complex decision. This is also called narrow-bracketing – the phenomenon of treating choices in isolation even when this might lead to a sub-optimal outcome.[4]

However, bundles could be regarded as simplifying the consumption decision and budgeting process by reducing the number of suppliers that need to be dealt with and bills that need to be read. This convenience has been shown to be an important driver of bundling.[5]

Who is more likely to bundle?

There is considerable literature on the factors that lead people to be more prone to narrow-bracketing and have strict mental budgets, and thus less likely to select to bundle their telecommunications. The six most important factors are as follows.

First, the wealth of the consumer. According to mental accounting theory, less wealthy consumers will have more strict budgets and therefore be less likely to bundle.

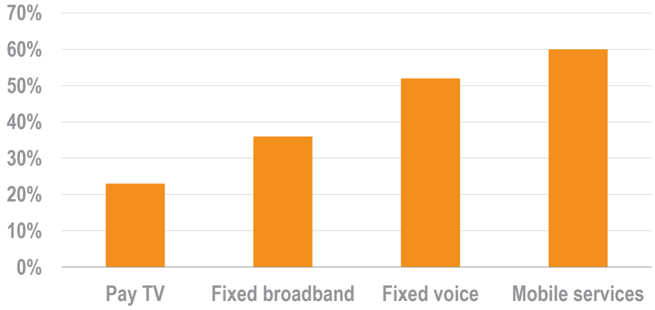
Second, the cognitive ability of the consumer. Those with lower cognitive ability rely more heavily on heuristics and thus are more likely to have strict mental budgets and thus be less likely to bundle.[6]

Third, whether a bundle is offered by the existing provider (the endowment effect). Consumers are risk-averse, loss-averse and biased towards the status quo.[7] This means that they are more likely to want to continue with an existing provider than swap providers. This effect is exaggerated in situations where private value is difficult to assess, such as in a bundle of services.[8] According to Ofcom, in the UK this effect varies by telecommunications service. The proceeding figure shows that the most people with pay TV in their bundle did not have it with a previous provider – people like to stay with their existing provider – however; this effect is reduced for fixed broadband and voice and is reversed for mobile services.

[†] These budgets will be set according to the utility that is gained from the services. This is driven by the way services can be accessed over different technologies.

Bundle customers new to provider

Proportion of bundlers who previously used different provider for the service



Source: Plum Consulting, Ofcom (2010)

Fourth, the propensity towards risk-averse diversification. The diversification bias is where individuals, when making decisions over their future consumption, overly estimate their desire for variety.[9] This is relevant if the purchase of multiple services from a single provider were seen as a lack of diversification. It depends on the level to which consumers are risk-averse.

Fifth, the nature of household decision making. Group decision making has been shown to reduce reliance on heuristics.[10] A household where the telecommunications budget is set by more than one person may exhibit less narrow-bracketing and be more likely to bundle.

Last, it has been observed that consumers think there are price reductions with bundles, whether or not any actually exist.[11] The propensity to expect bundles to provide cost savings will depend on an individual's experience and learning in the market. An experienced consumer may be more likely to know the true size of the price discount applied to a bundle. However, telecommunications markets are characterised by a rapid rate of technological change and infrequent consumer decisions, both of which make consumer learning more difficult.

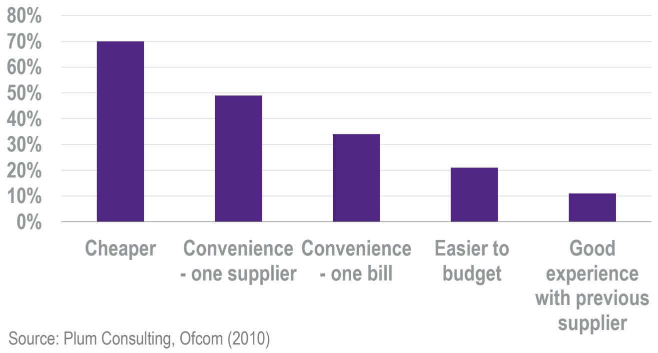
Therefore, people who are more likely to bundle are those with greater wealth, higher cognitive ability, those already with the provider, those who are less risk-averse and those who make group decisions over budgeting. Experience in the market may encourage or discourage bundling.

A number of studies show these factors to be important. For example, household size was shown to be a driver of bundling in Sweden,[12] education was shown to be a driver of bundling in Turkey[13] and less wealthy households have been shown to be less likely to bundle in the UK,[14] Sweden and Turkey.

The next figure gives the top five reasons for taking a telecommunications bundle in the UK, the most common of which is that it is cheaper. One fifth of those taking bundles acknowledged that they simplify household budgeting. The chart also illustrates the endowment effect (through not wanting to leave an existing supplier) and the convenience benefits of having one supplier and one bill.

Reasons for taking a bundle

Proportion of respondents



Source: Plum Consulting, Ofcom (2010)

How does bundling affect consumption?

Bundles have the effect of de-coupling price from the amount of a service that people consume.[15] This means that consumers are less likely to consider the price when taking consumption decisions. There is significant evidence that this leads to lower use of the service when compared to purchasing the same services separately.[16] This is because consumers are less aware of the price of the service and less likely to see it as a reason to consume it.[‡]

The benefit to operators from bundling comes from:

- Uptake of new services which would not otherwise be consumed. For example, according to Ofcom (2010), in the UK 45% of those buying a bundle which includes pay TV had never purchased pay TV before.
- Lower propensity to churn due to the endowment effect. Once consuming a service loss-averse consumers are less likely to switch away from their provider.
- Operators can raise prices for existing customers more easily, also due to the endowment effect.
- People pay for more than they consume due to de-coupling.

How might firms encourage bundling?

Bundling is a form of price discrimination through product differentiation which increases producer surplus (and possibly consumer surplus).[§] Below are a few approaches firms might use to increase the uptake of bundles.

- Discourage narrow-bracketing and encourage the amalgamation of telecommunications budgets. Narrow-bracketing is the enemy of bundling and could be countered by framing the bundle as the single answer to several questions.
- Simplify the decision. Consumers are prone to inertia when faced with complex problems and firms need to present the decision in a way that demands the least effort to comprehend and evaluate.
- Emphasise the convenience of dealing with one supplier and receiving only one bill. Simplicity is appreciated by hassle-minimising consumers.
- Harness the endowment effect with existing consumers by initially upgrading them to bundles at low prices or for free. This might have significant regulatory concerns for market leaders.
- Help harmonise contract end points by offering to pay the early termination charge of another provider. Loss-averse consumers feel losses much more keenly than equivalently sized gains: an avoided loss is more attractive than a lower price.[**] [17]

More general pricing advice from behavioural economics includes: the need for prices to be perceived as fair; the use of default options to encourage uptake; and emphasis on avoiding regret in decision making.[18]

How might behavioural economics inform regulation of bundles?

Regulation of bundling in telecommunications is often limited to margin squeeze tests, but behavioural economics illuminates potential areas for further regulatory thought and activity.

First, before market power can be assessed the market must be defined. Markets definitions (often defined using SSNIP tests) regularly rely on consumer surveys which are subject to psychological effects such as framing and anchoring – two ways the presentation of a question influences the choice. Surveys may not be a robust way to assess consumer behaviour, especially given the complexity of comparing bundles of different services and prices. There is also the question of whether the SSNIP test should be applied to the bundle or to the unbundled services.

Second, unnecessarily complicated pricing is anti-competitive as it makes comparison more difficult (reduces

[‡] Note that sunk costs (for example, an upfront, fixed price) would not influence a rational individual's consumption decisions.

[§] Bundling can exhibit the characteristics of both second and third-degree price discrimination.

[**] Prices are not generally considered as losses as there is a closely associated gain in the form of a good or service. An early termination charge would be seen as a loss as it is avoidable, the gain is less closely coupled to it, and it is framed as a charge rather than a price.

price competition). Comparing the prices of bundles is a complex task when they contain different services and there is no common standard for pricing (although this may emerge with competitive pressure as consumers are attracted to simple propositions).[19] This complexity may also cause greater behavioural biases and herd behaviour as consumers rely more on heuristics to simplify decisions. Regulators in other sectors, such as finance, are acting to reduce pricing complexity where possible.

Third, switching from one provider to another may be more difficult once a consumer is in a bundle as the selection of services may not be replicated elsewhere. The endowment effect also makes consumer less price elastic. Further, it is difficult for a consumer to leave a bundle on one service alone.

Fourth, quality of service may suffer on some services. Individuals tend to simplify judgement of a multi-dimensional product by focussing on one dominant aspect that is deemed to be representative of the product as a whole.[20] In the case of bundling the representativeness bias means that consumers may not pay attention to the quality of some of the less dominant services. This reduction in competitive pressure in those services could lead to reduced quality of service and market failure.

Bundles benefit consumers in a number of ways, but regulators should consider insights from behavioural economics to inform consumer protection and to encourage competition.

Conclusion

The traditional economic model of rational utility maximising consumers does not accurately describe how consumers actually behave. Behavioural economics brings new insights into actual consumer behaviour and these insights should be considered by firms and regulators alike.

Plum's capabilities

Plum has recent direct experience in considering the issues associated with regulating bundles of TV content and fixed broadband. We have considered the issues of convergence for the EC, have examined impacts on competition of bundling, and our staff have helped operators to examine how bundles should be priced.

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[1] OECD Communications Outlook 2013

[2] R. H. Thaler (1998) *Mental Accounting Matters*

[3] See T. Hogg (2013) *Fungibility: Are people aware of non-fungibility?* MSc Dissertation

[4] D. Read, G Loewenstein and M. Rabin (1998) *Choice Bracketing*

[5] M. L. Andrews, R. L. Benedicktus and M. K. Brady (2010) *The effect of incentives on customer evaluations of service bundles*

[6] J. Oechssler, A. Roider and P. W. Schmitz (2008) *Cognitive Abilities and Behavioural Biases*

[7] D. Kahneman, J. L. Knetsch and R. H. Thaler (1991) *Anomalies: The Endowment Effect, Loss Aversion and Status Quo Bias*

[8] S. Sayman and A. Önçülar (2005) *Effects of Study Design Characteristics on the WTA-WTP Disparity: A Meta Analytical Framework*

[9] D. Read and G. Loewenstein (1995) *Diversifcation Bias: Explaining the Discrepancy in Variety Seeking Between Combined and Separated Choices*

[10] See, for example, G. Charness, E. Karni and D. Levin (2010) *On the conjunction fallacy in probability judgement: New experimental evidence regarding Linda*

[11] See A. Nguyen, R. M. Heeler and C. Buff (2009) *Consumer perceptions of bundles*, and R. M. Heeler, A. Nguyen and C. Buff (2007) *Bundles = discount? Revisiting complex theories of bundle effects*

[12] P. Srinuan, C. Srinuan and E. Bohlin (2014) *An empirical analysis of multiple services and choices of consumer in the Swedish telecommunications market*

[13] M. M. Üner, F. Güven and S. T. Cavusgil (2014) *Bundling of telecom offerings: An Empirical Investigation in the Turkish market*

[14] Ofcom/Saville Rossiter-Base (2010) *Consumer Switching and Bundling*

[15] D. Prelec and G. Loewenstein (1998) *The Red and the Black: Mental Accounting of Savings and Debt*

[16] See D. Soman and J. T. Gourville (2001) *Transaction Decoupling: How Price Bundling Affects the Decision to Consume,* and C. H. Sampaio, J. D. Sordi and M. G. Perin (2015) *How price bundling affects football ticket purchases and consumption behaviour*

[17] D. Kahneman and A. Tversky (1983) *Choices, Values, and Frames*.

[18] See D. Kahneman, J. L. Knetsch and R. H. Thaler (1991) *Anomalies: The Endowment Effect, Loss Aversion and Status Quo Bias*, and G. Loomes and R. Sugden (1982) *Regret theory: An alternative theory of rational choice under uncertainty*

[19] A. Gaudeul and R. Sugden (2012) *Spurious complexity and common standards in markets for consumer goods*

[20] A. Tversky and D. Kahneman (1974) *Judgement under Uncertainty: Heuristics and Biases*