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The impact of service bundles on the mechanism through which functional value and price value affect WOM intent

Abstract

Purpose: The aim was to contribute towards the current limited understanding of service bundles by investigating how purchasers of combined product-service bundles (bundle customers) differ from those purchasing a product and associated service separately (non-bundle customers).

Design/methodology/approach: The hypothesized effects were tested on a representative sample of mobile phone subscribers in Finland, through a multi-group moderated analysis using variance-based structural equation modeling.

Findings: a) While functional value had a stronger effect on attitude for bundle customers, price value is a stronger determinant of attitude for non-bundle customers. b) There was no difference between the groups in terms of how attitude determines WOM intent. c) The total influence of functional value on positive WOM intent was stronger for bundle customers Vs non-bundle customers; in contrast, the total influence of price value on positive WOM was weaker for the bundle customers.

Research limitations/implications: Two inter-related frameworks, prospect theory and mental accounting theory, are used to analyze customer response to service bundles. Results demonstrate that bundles play a powerful role in determining engagement behaviors critical to firms. Purchasing a service bundle Vs a non-bundle influences how price value and functional value determine attitude and WOM intent in fundamentally different ways.

Practical implications: In devising communication strategies to maximize positive WOM, managers need to emphasize functional benefits for bundle purchasers and price benefits for non-bundle customers. The results also demonstrate that it is more important for firms to track perceived value, as value and not attitude differentiates WOM generation in the two groups.

Originality/Value: This is the first study to demonstrate how bundle and non-bundle customers determine value, and how functional value and price value determine WOM generation and attitude towards SP in fundamentally different ways. The comparison of the bundle group where the firm acts as the main resource integrator to a non-bundle group where the customer is the main resource integrator in creating value helps demonstrate the need for firms to treat the two groups in distinct ways.

Keywords: Service bundles, Word of mouth, Value creation, Engagement, Customer experience, Prospect theory, Mental accounting.

Introduction

Because of its effectiveness as a competitive strategy, service bundling—marketing service packages in particular combinations—is ubiquitous in many major service industries, including financial services, telecommunications, and hospitality (Fourbert and Gijsbrechts, 2007; Legarreta and Miguel, 2004). According to a recent industry survey, 83% of telecommunication customers in North America bundle their services (J.D. Power Report, 2013). Yet, despite the prevalence of bundles and their enormous potential to create value for customers and increased profits for firms, research on service bundles remains surprisingly sparse, and this limited understanding of bundling motivated the present study.

Firms offer bundles in various ways: by combining various components of services offered by their own firm, or by combining their own services with products or services offered by other firms. The product-service bundle combination is especially relevant today, as firms often combine a product from a partner firm with their own service offering. This combination approach has attracted significant interest in the service bundling literature, and the current study pursues a similar line of inquiry. While some customers choose to purchase a product-service bundle from the same firm (*bundle customers*), others decide to purchase the product from one company and the service from another, as separate components (*non-bundle customers*). This research explores how this difference impacts the customer-firm relationship by investigating the effect of bundles on the drivers of word-of-mouth (WOM) behavior, which is a key engagement behavior. More specifically, the study investigates whether the decision to purchase a bundle as opposed to a non-bundle from the focal firm impacts post-purchase behavior, and if so, does that decision determine how WOM generation is affected by the customer's evaluation of the service and subsequent formation of attitude toward the service provider (SP).

It is argued that bundling will have a significant impact due to the following reasons. Because bundles are sometimes offered at a discount (price bundles), the price is less than when purchasing each element separately. Sometimes the various components of the bundle are sold only as an integrated whole, such that the bundle is better than the sum of its parts (integrated bundles). Other times, firms sell the various components separately or as a complete bundle (mixed bundles) offering greater flexibility to customers, and often with elements of integration. In the telecommunication industry, the context for the current study, a mixed bundle can consist of a broad range of products and/or services. In North America, for instance, it is not uncommon to get home phone, mobile phone, Internet, and cable services, as well as the related products from the same provider. However, in countries where industry is more fragmented, bundles can typically be a combination of a single product and a single service.

Bundles of every type seek to create value for customers in terms of both price and functionality. Bundles are also known to be remarkably complex, and they can often generate significant WOM, which is commonly associated with remarkable things or events. Because of their complexity, bundles are also difficult to evaluate, increasing the associated credence attributes (Voyer and Ranaweera, 2015). Where credence attributes are high, WOM occurrence and impact are known to be stronger (Ranaweera and Jayawardhena, 2014). In this way, bundles are expected to influence how value determines attitudes, and through attitudes, influence generation of WOM. However, as discussed later, bundles are also difficult to evaluate because customers find them ambiguous in terms of the value derived from them (Stremersch and Tellis, 2002). In other words, how value impacts attitudes and WOM in the presence (or absence) of a bundle is not intuitive. If bundle purchases are linked to how customers perceive the value created by those bundles (in terms of both price and functionality), it becomes critical to establish whether and how these value perceptions affect customer behaviors. While bundles are supposed

to reduce customer risk, they are also complex, cumbersome, and difficult to get out of, which can lead to negative experiences. This study aims to establish (both theoretically and empirically) the direction and magnitude of the impact of bundles on WOM generation, which is far from intuitive and is difficult to predict.

Specific focus on WOM as the outcome is based on its known importance to firms as a key customer engagement behavior identified in the literature (Van Doorn *et al.*, 2010). Bughin *et al.* (2010) reported in the McKinsey Quarterly that WOM is the primary factor behind 20 to 50% of all purchasing decisions generating more than twice the sales of paid advertising. Industry reports also show that 2.4 Billion WOM conversations occur daily, and that marketing managers continue to invest heavily in ways to influence WOM (Berger and Schwartz, 2011). WOM is also known to have a significant influence on both purchase intentions and retransmission intentions (Baker *et al.*, 2016), and consequently on sales and profitability (Keiningham *et al.*, 2007). At the same time, as Berger (2014) argued, WOM remains one of the world's most effective, yet least understood marketing strategies. As such the investigation of how this ubiquitous business practice impacts the mechanism through which value determines WOM, a hitherto unexplored topic, is likely to bring important insights both to scholars and practitioners.

The main aim of the present research, then, is to investigate a) how the impact of functional value and price value on WOM generation about a SP differs between purchasers of a product-service bundle and those who bought only the service from the focal firm; and b) the mechanisms by which such effects take place. To conceptualize the model, the study draws on two streams of literature. The well-established service research on value, attitudes, and behaviors supports the base model, drawing on key elements of prospect theory (Kahneman and Tversky, 1979) and mental accounting (Thaler, 1985), a framework that has been used in prior behavioral research on bundling, to conceptualize the role played by bundles in affecting this base model.

Given that the effects of bundles have rarely been investigated, the study also has an exploratory element, addressing both the nature of the relationships and the variance explained by the key constructs. The study is set in the context of mobile phone services, where product-service bundling is typical. Collaboration with an industry partner facilitated access to the requisite customer segments, enabling a comparison between those who purchased a product-service bundle and those who purchased only the service from the focal firm, purchasing the product component from a different firm.

This study contributes to the literature in a number of ways. First, it clearly demonstrates that customers evaluate bundles differently from sole components, and that these distinct evaluation processes impact significantly on how attitudes are formed and WOM is generated. The study contributes to theory by illustrating the unique effects of the different dimensions of value on attitudes and behaviors in the bundle vs non-bundle situations. It also contributes to practice by highlighting the specific conditions under which either price or functionality should be promoted to encourage WOM generation. The study also demonstrates that when monitoring the propensity for generation of WOM among their customer base, it is far more important for firms to track positive service evaluation criteria (such as value) than positive attitudes.

Literature review and hypothesis development

Stremersch and Tellis (2002) defined bundling as the sale of two or more separate products (or services) in one package. They emphasized the word *separate* because this signifies that these are distinct products and/or services, for which distinct markets exist. The existing literature on bundling can be categorized into a few broad streams: the pricing and promotional implications of bundles (e.g., Basu and Vitharana, 2009); customer responses to bundle offers (e.g., Han *et al.*, 2009); and designing and offering value through bundles (e.g., Haas *et al.*, 2013). Much of the

early research was product-focused, as well as emphasizing price optimization strategies and customer responses to such offers. This also meant that little attention was paid to existing customers' response to bundles.

The service literature has examined bundling mostly in relation to technology product-service combinations, with an underlying theme relating value from bundles to various outcome variables. In their conceptual work, Heim and Sinha (2001) introduced the idea of service bundles consisting of both a product and a service component, and they developed a product-process matrix for electronic B2C operations and related customer-derived value as positions on that matrix. They went on to develop a taxonomy of electronic service bundles encompassing physical goods, offline services, and digital content (Heim and Sinha, 2005) and investigated how the design of service bundles contributed to customer satisfaction. Looking at e-service bundles as antecedents of e-service channel success for small retailers, Cho and Menor (2012) related the value offered through these bundles to e-service quality and financial performance. More recently, Haas *et al.* (2013) studied e-Service suppliers offering electronic services in complex service value networks, where the network acts as an aggregator of services from different e-service suppliers to a complex service bundle, which is then offered to customers. Their research focused on how suppliers learn to operate in a complex environment while still offering the value customers seek. The underlying theme in this research stream is how bundles can be designed and offered to create best value for customers, with a positive impact on customer satisfaction, service quality, and firm financial performance. As such, derived value is central to the evaluation of bundles, and this issue is elaborated below.

The base model: Value → Attitude → WOM

While the relationships among value, attitude, and behavior are well established in the prior literature, this base model is a critical first step in establishing how bundling affects the

relationships among these constructs—specifically, customer perceptions of functional value and price value, attitudes, and behaviors. This base model is briefly discussed to establish the rationale for focusing specifically on perceptions of functional value and price value.

Within the vast existing body of knowledge on customer value, perceived value is often defined as the customer's overall evaluation of a service based on a comparison of its perceived benefits and costs (Overby and Lee, 2006). As in the case of related constructs such as perceived service quality and satisfaction, perceived value is known to predict customer attitudes and loyalty (Anderson *et al.*, 2014). Following Sweeney and Soutar (2001), functional value can be defined as the utility derived from the service's perceived quality and expected performance; and price value can be defined as the utility derived from the service by reducing its perceived short-term and long-term costs. Positive perceptions of both functional value and price value would be expected to engender a positive attitude to the SP, with direct positive effects on WOM generation.

Among the numerous conceptualizations of value in the prior literature, one by Boksberger and Melsen (2011) represents one common perspective suggesting that value comprises functional, emotional, and social components. This is consistent with the conceptualization of value as value-in-use for the customer, shifting the focus from a customized bundle of products or services exchanged for a price to an ongoing process that emphasizes the customer's experience (Gronroos and Voima, 2013), with a consequent focus on emotional and social as well as functional and economic benefits (Nordin and Kowalkowski, 2010). While the functional or utilitarian dimension is characterized by rational and economic evaluations, the social and emotional dimensions are characterized by affective or hedonic evaluations. The context for the current study (telecoms services) is characterized by a strong utilitarian focus; customer relationships with telecom companies are often driven by continuance commitment but

lack a strong affective component (Ranaweera and Menon, 2013). Utilitarian motives of price and functionality are critical for such services in which there is little to no human interaction with service personnel. As such, this study focuses on the utilitarian dimensions of value; functional and price. This also helps to more directly relate the current research to prior work on bundling, as the previous work that was treated as the point of departure also emphasized the roles played by functionality and price in evaluating derived value of bundles.

Attitude has commonly been described as a general assessment of a service not specific to a transaction (Oliver and Westbrook, 1982; Swan, 1983), and is akin to cumulative satisfaction in the context of a service relationship (Oliver *et al.*, 1997). In the extensive existing literature on the effects of attitude on post purchase behaviors, there is a consistent view that more positive attitudes will lead to more positive behaviors (cf. Ajzen, 1991). On that basis, the following hypotheses are proposed.

H_{1a}: Functional value will be positively related to attitude towards SP such that as perceptions of functional value increase, positive attitude towards the SP will also increase.

H_{1b}: Price value will be positively related to attitude towards SP such that as perceptions of price value increase, positive attitude towards the SP will also increase.

H_{1c}: Attitude will be positively related to WOM such that the more positive the attitude towards the SP, the greater will be the generation of positive WOM.

H_{1d}: Both (i) price value and (ii) functional value will also have direct effects on generation of WOM in addition to their indirect effects through attitudes.

Having established the basic model, the central premise of this research will now be addressed—specifically, how the presence or absence of bundles impacts these relationships.

Implications of bundles

Prospect theory and the related theory of mental accounting are well established in the literature. Although these theories have not previously been used in a product-service bundling context, elements of these theories have been clearly identified as central to behavioral research on bundling. Prospect theory was introduced on the premise that expected utility theory does not hold when customers make decisions under uncertainty (Tversky and Kahneman, 1992). The complexity of many services, including telecom services, leads to risk and uncertainty; one way of dealing with this risk and uncertainty is by means of bundles. In prospect theory, outcomes are thought of as gains or losses, and customers respond behaviorally to outcomes so framed. One of the basic phenomena of choice under both risk and uncertainty is that losses loom larger than gains (Kahneman and Tversky, 1984). The observed asymmetry between gains and losses is known to be far too extreme to be explained by personality traits or demographic characteristics; such as decreasing risk aversion or customers' income level. In the current context of customers subscribing to a telecom bundle, their gain is the product (telephone handset) bundled with the service from the same company, and the loss is the fee paid. For customers who purchase the different elements from different firms, the gain is the product purchased from one firm and the service from another, probably with less integration between the product and the service. The loss is the two sets of payments made to the two firms (the SP and the retailer selling the handset).

The related concept of mental accounting suggests that people perceive multiple gains as more rewarding and multiple losses as more punishing than single gains or losses of the same value (Thaler, 1985). At a very general level, in the context of a telecom bundle, this means that those purchasing a bundle will perceive their payment as a single loss, as compared to non-bundle customers, who will perceive their payments as dual losses. However, while the latter group will also make two gains (the product and the service), the bundle purchasers will make a

single gain (the bundle). Where there is no price differential, this means that those purchasing a bundle will feel more positive about the single loss while non-bundle customers will feel more positive about their dual gains. This makes for a complex evaluative process, as this is a non-intuitive problem. To develop the relevant hypotheses, the relevant core concepts are further elaborated in the next section.

How the bundle/non-bundle purchase determines the impact on attitude of functional value and price value

Based on prospect theory and mental accounting, previous studies have reported evidence that customers who buy a service as a bundle consume less of that bundle than those who buy the same components separately with separate prices for the individual components (Prelec and Loewenstein, 1998; Soman and Gourville, 2001). The suggestion is that customers who buy a bundle perceive far greater ambiguity in the sunk cost of their purchase than customers presented with separate prices, and that this greater ambiguity decouples the sunk cost of the purchase from the extra benefit of experiencing the entire bundle of services (Stremersch and Tellis, 2002). Simply put, customers who pay a bundled price take less account of the sunk costs of their purchase than customers who pay separate prices. This means that those who buy the product-service bundle will experience greater ambiguity in assessing price value as compared to those who paid separate prices for product and service. It therefore is likely that price value will have a weaker effect on attitude towards SP among those who purchased the product-service bundle than among those who did not.

H_{2a}: The effect of bundles on the relationship between price value and attitude towards the SP will be such that price value will have a weaker effect on attitude for those who purchased the product-service bundle than those who did not.

While the notion of ambiguous sunk costs applies to price value and not to functional value, the existing literature offers some guidance as to the effect of the latter. As noted earlier, there are different types of bundle; when used optimally, they can be fully integrated, objectively increasing the functionality of the bundle and making the bundle “better than the sum of its parts” (Stremersch and Tellis, 2002). Examples of complex integrated bundles include fixed-line and wireless bundles with call-management options, supporting incoming mobile calls on the fixed-line phone and ensuring seamless transmission of voice messages. In a product-service bundle, the SP usually offers a choice of handsets that work most seamlessly with their own service, and their service employees will be highly conversant with the products they sell. For that reason, they will be aware of the full potential of the functionality offered by the product-service combination. In-bundle customers are likely to be able to experience this directly during their interactions with the SP, enabling them to better evaluate the bundle’s functional benefits. Another key benefit for the in-bundle customer is the convenience of buying everything from the same place, again making it easier to evaluate the functional benefits. This means that functional value will have a stronger influence on attitudes for those purchasing bundles than non-bundle customers.

H_{2b}: The effect of bundles on the relationship between functional value and attitude towards the SP will be such that functional value will have a stronger effect on attitude for those who purchase the product-service bundle than for those who purchase the non-bundle.

How the bundle/non-bundle purchase determines the impact of attitude on WOM

As noted above, the effect of attitude on behavior is well established. Here, the pertinent question is whether this effect depends on whether one purchases a product-service bundle from a single firm or two components from different firms. The present study considers how prospect theory

and mental accounting help in understanding the way customers evaluate bundles. As evaluation is often antecedent to attitude formation, it is argued that the bundle/non-bundle variable will affect the evaluative process—that is, how value is perceived. However, while the differences between bundled and non-bundled products/services are relevant to the effect of value, they are unlikely to influence how attitude determines WOM generation. While positive attitudes lead to positive WOM generation, the impact of attitude on WOM is unlikely to depend on whether or not customers purchased a bundle. Once attitudes are formed on the basis of perceived value (which in itself will be dependent on bundles), the outcome (i.e., the effect of attitude on WOM generation) is likely to be uniform across the two groups.

H₃: The effect of bundles on the relationship between attitude towards the SP and WOM generation will be such that attitude will not have a statistically different effect on WOM generation for those who purchased the product-service bundle vis-à-vis those who did not.

How the bundle/non-bundle purchase determines the total effects of functional value and price value on WOM

Given the effect of value on attitude, and the implied subsequent indirect effect through attitude on WOM, the question of interest here is the overall effect of price and functional value on WOM behavior and specifically, how these total effects are impacted by the presence or absence of service bundles. In terms of how bundling influences the total effect of price value, the previously cited literature on ambiguous sunk costs is critical. As noted, customers purchasing a bundle perceive far greater ambiguity in the sunk cost of their purchase than customers presented with separate prices, decoupling the sunk cost from the additional benefit of experiencing the entire bundle of services (Stremersch and Tellis, 2002). This means that customers who pay a bundled

price account less for the sunk costs of their purchase than do customers who pay separate prices, resulting in this group finding it more difficult to evaluate the value they derive from their service bundle. In other words, those outside bundles will have clearer perceptions of the price value they derive from the service, because they paid two distinct prices for the product and the service. Therefore:

H_{4a}: The total influence of price value on positive WOM intentions will be weaker for those who purchased a product-service bundle than for those who did not.

Next this paper discusses how bundling influences the total effect of functional value on WOM intentions. It has already been argued that the potential for better integration between the product and the service means that those purchasing the product-service bundle from a single SP will be better able to assess functional value. In relation to the generation of WOM—a behavioral intention associated with engaged customers—there are additional reasons why customers who purchased a bundle are likely to generate WOM for a given level of functional value. All types of bundles are generally aimed at building functional relationships (Stremersch and Tellis, 2002) that are mutually beneficial in offering a better experience for the customers, and making costs lower to serve for the SP. Therefore, such functional benefits, which customers of bundles can increasingly recognize and are also central to most bundle offerings, will likely have a significant impact WOM generation. Thus:

H_{4b}: The total influence of functional value on positive WOM intentions toward the SP will be stronger for those purchasing a bundle than for those who do not.

Figure 1 illustrates the above relationships graphically—specifically, it shows how being in a bundle arrangement or not impacts relationships among value perceptions, attitudes, and behavioral intentions toward service firms.

[Please Insert Figure 1 about here]

Methodology

Data were collected through an online questionnaire distributed via e-mail to web panel members at a major mobile phone operator in Finland (referred to here as the *focal firm*). The questionnaire was initially developed in English and was then translated into the local language by one of the authors. To avoid translation errors, the questionnaire was back-translated into English by a different person; the two versions were compared, and minor inconsistencies were resolved (see Mullen, 1995).

The sampling frame consisted of a panel comprising two distinct groups of household customers, enabling comparison of the two groups. The first group included customers who had purchased the product-service bundle from the focal firm; the other group included those who bought only the service from the focal firm, buying the product (handset) from another firm. The former group bought the handset and the entire mobile communication service (including local and long-distance calls, as well as texting and data) from the same SP. The latter group purchased the identical service from the focal firm but purchased the phone from a different firm. As is the norm in this market, it is not possible to separate the data package from the call + text package, and everyone who has a mobile contract buys all the services from the same SP. Furthermore, there is no service price advantage for those purchasing the phone from the focal firm. Executives of the firm also confirmed that these packages are indeed considered as typical service bundles by customers in that market. The two groups of respondents were similar in terms of demographics and segmentation criteria used by the firm.

The questionnaire was pretested on a small segment of the customer panel, yielding 90 responses. Based on this pilot test, the wording of some questions was amended to improve clarity, the font size was increased, and the order of questions was varied to reduce common

method bias and so improve the study's validity. The questionnaire was then sent to 3,500 customers by e-mail; 1,152 usable responses were received within two weeks, amounting to a response rate of 32.9% (an effective response rate of 45.8% based on the number of confirmed recipients). Using the web panel ensured that the sample was representative of the population in terms of the proportion of bundle and non-bundle customers. However, it was not possible to determine how many of those on the web panel were bundle customers and how many were not. Nonresponse bias was tested for by comparing 20% of the early respondents to 20% of the late respondents (Armstrong and Overton, 1977). As no significant differences were found between the two groups on any construct, nonresponse bias was deemed unlikely to affect the results.

Common method bias

With all self-reported data, there is potential for common method bias (Podsakoff *et al.*, 2003), and a number of procedural remedies were therefore implemented at the data collection stage. As well as keeping respondents' identities confidential, item ambiguity was reduced through pre-testing, and item order was varied in the questionnaire. Statistical analyses to assess the severity of common method bias used the Liang *et al.* (2007) test, running a structural equation model with a common method factor as an indicator for all constructs. The analysis showed that the average variance substantively explained by the indicators was 0.83, with an average method based variance of 0.02. Given the magnitude of method variance and the complex group-based interaction being tested, common method bias is unlikely to be of serious concern.

Measurement

All the study constructs (see Appendix) were measured using established and validated scales. The items measuring functional value and price value were adopted from Sweeney and Soutar (2001). The attitude towards SP scale included three items from Kim *et al.* (2011). Positive word-

of-mouth intentions were measured by items from Yang and Peterson (2004). All constructs in the model were reflective. Bundling was measured with a dummy variable (1 = outside a bundle, 2 = inside a bundle).

For the purpose of comparing the two groups, we first assessed potential measurement invariance using a nonparametric MICOM procedure with 5,000 permutations (Henseler *et al.*, 2016). This test indicated that as the *c values* of the multiple indicator measures did not differ significantly from 1 ($p > 0.05$), partial measurement invariance was established, and the conditions for comparing the two groups were met. (The term *c value* refers to the correlation between composite scores using the weights obtained from the first group $\xi(1)$ and composite scores using the weights obtained from the second group $\xi(2)$.)

Control variables

The model was also estimated using two control variables that might impact the outcome construct (positive WOM intentions): relationship age, which reflects the customer's depth and breadth of experience with the SP; and average monthly bill, which reflects the level of customer involvement with the service. Both of these variables have been linked to customer attitudes towards and loyalty to mobile services and telecommunications services (e.g., Karjaluoto *et al.*, 2012; Nysveen *et al.*, 2005; Raimondo *et al.*, 2008). Measures for the control variables were from Karjaluoto *et al.* (2012) and Raimondo *et al.* (2008). Relationship age was measured in months, based on the open-ended question "How long have you been a customer of your current operator?" Average monthly bill was measured on a seven-point scale (from 1 = below 20 EUR to 7 = 200 EUR or more).

Sample demographics

Slightly more than half of the respondents were male (60%), and most were aged 35–49 (34.5%) or 50–64 (39.7%). Only 8% of the respondents were under 35, and the age distribution accurately

represents the operator's customer base. Most respondents were married or cohabiting (71%) and were employed. Just 3% were students, and 25% were pensioners. About half (51%) had a gross monthly personal income of more than 2,500 EUR, and around 10% had a monthly income of less than 1,000 EUR. A majority (61%) had an average monthly personal mobile bill of between 21 and 70 EUR; almost a quarter (23%) had a monthly bill in excess of 70 EUR. On average (median and mean), respondents had been in a customer relationship with the operator for 12 years, which is a long time for the industry in question but reflected the typical average duration of the operator's customer relationships. A majority of customers subscribed to a bundle arrangement (71.1%).

Results

The data were analysed using Partial Least Squares (PLS) and SmartPLS (Ringle *et al.*, 2005). PLS estimation is a well-established approach in the marketing literature and in management disciplines for dealing with complex models (cf. Hair *et al.*, 2013). PLS is also very useful when testing hypotheses of an exploratory nature, making it particularly appropriate for the current research.

Exploratory factor analysis of the items confirmed the unidimensionality of all the constructs. The PLS algorithm was then used to test the validity of the measurement model. As suggested by Bollen (1989), factor loadings and squared multiple correlations between items and constructs were examined to further assess the measures' validity. The internal reliability of each scale was found to be significant, as all constructs achieved high composite reliabilities ($> .93$), with Cronbach's alpha equal to or larger than .91, which is well above the recommended value of .70 (Nunnally, 1978).

The Fornell-Larcker criterion (1981), which is based on the premise that a latent variable should better explain the variance of its own indicators than the variance of other latent variables, offered strong support for discriminant validity. Table 1 shows the cross-correlation matrix comparing the square root of the AVE to the correlations between the latent variable and all other latent constructs.

[Please insert Table 1 about here]

Direct effects

In the confirmatory phase, the direct effects were examined to test H_{1a-b} (Table 2). In assessing the significance of each estimated path, a standard bootstrapping procedure was applied, with 5,000 re-samples comprising the same number of cases as in the original sample (Hair *et al.*, 2013, p. 132). The results of the PLS estimation for the direct effects are presented in Table 2.

[Please insert Table 2 about here]

Both functional value and price value had a positive effect on attitude towards the SP, but the effect of the former was significantly stronger, providing support for H_{1a} and H_{1b} . Not surprisingly, attitude was also found to be positively related to word-of-mouth intentions, confirming H_{1c} . The findings also provide support for H_{1d} by confirming the direct effects of price value on WOM ($\beta = 0.089$, $p < 0.01$) and of functional value on WOM ($\beta = 0.408$, $p < 0.01$). Controlling for relationship age and average monthly bill revealed that their effect on positive WOM was marginal, suggesting that the control variables were of no concern for interpretation of the results.

Table 2 shows that the f^2 effect sizes are large (> 0.35) for functional value in producing the R^2 of attitude, and medium ($0.15 < f^2 < 0.35$) for functional value and attitude in producing the R^2 of WOM. Table 2 further shows that both Q^2 values for the endogenous constructs are large (> 0.35), providing support for the model's predictive relevance. The q^2 effect sizes indicate that

functional value has a large effect ($Q^2 > 0.35$) in producing the Q^2 predictive relevance of attitude; in turn, attitude has a large effect in producing the Q^2 predictive relevance of WOM.

To test H2–H4, this study assessed the indirect effects, total effects, and mediation using the recommended bootstrapping approach (Preacher and Hayes, 2008), which is also said to perfectly suit PLS-SEM and is superior to other tests such as the Baron and Kenny test or the Sobel test (Hair *et al.*, 2013, p. 223). Bootstrapping was based on 5,000 bootstrap samples, and the strength of mediation was assessed using the Variance Accounted For (VAF) value. All indirect effects in both samples were significant ($p < 0.01$).

The findings provide support for H_{2a} by showing that price value has a weaker effect on attitude for those who purchased the product-service bundle ($\beta = 0.196, p < 0.01$) than for those who did not ($\beta = 0.473, p < 0.01$; group difference significant at $p < 0.01$). Functional value in turn had a stronger effect on attitude for those who purchased bundles ($\beta = 0.596, p < 0.01$) as compared to those who did not ($\beta = 0.355, p < 0.01$; group difference significant at $p < 0.01$), so confirming H_{2b}. As predicted, attitude had no statistically different effect on WOM generation for the two groups ($\beta_{\text{inside bundle}} = 0.382, p < 0.01$ vs. $\beta_{\text{outside bundle}} = 0.419, p < 0.01$).

Table 3 presents the remaining results of the multi-group analysis. With respect to H_{4a}, the data confirm that total influence of price value on WOM intentions is weaker for those purchasing a bundle ($\beta_{\text{inside bundle}} = 0.202, p < 0.01$ vs. $\beta_{\text{outside bundle}} = 0.506, p < 0.01$, different at $p < 0.01$). Finally, H_{4b} is also supported by the data, as the total influence of functional value on positive WOM intentions is stronger for those purchasing a bundle ($\beta_{\text{inside bundle}} = 0.657, p < 0.01$ vs. $\beta_{\text{outside bundle}} = 0.331, p < 0.01$, different at $p < 0.01$).

[Please insert Table 3 about here]

Discussion

The main focus of this research was a comparison of two types of service offerings: those in which the focal firm acts as resource integrator, creating a bundle based on their in-house product-service offerings; and those in which the customer as resource integrator purchases an unbundled offering, which they create for themselves by purchasing the product from one firm and the associated service from another. This study therefore addresses a novel research question with major implications for industry practice concerning how bundles impact perceptions of value created, and how those perceptions in turn influence certain types of engagement behaviors differentially for the bundle and non-bundle groups.

Prior literature has firmly established how value determines attitudes and how attitude in turn leads to WOM intents. While the notion that bundling affects value perceptions is also generally acknowledged, the existing service literature is largely silent on the challenges faced by service customers who subscribe to bundles in forming value perceptions. More critically, little is known about how price value and functional value differentially affect WOM generation for bundle and non-bundle customers. This phenomenon is not intuitively understood, and the present findings offer a robust explanation of these differential effects based on prospect theory.

The following discussion highlights some key theoretical and managerial implications of the results and further elaborates the study's other contributions. First, this research makes an important theoretical contribution to the existing literature on service bundles. As far as the authors are aware, this is the first study to demonstrate how purchasing a service bundle as opposed to a service plus separate product can impact significantly on how price value and functional value determine attitude and behavioral intent toward the focal service firm.

Secondly, drawing on prospect theory and mental accounting theory (as related theoretical frameworks previously used to analyze customer response to bundles), this research also

demonstrates how price value and functional value act in fundamentally different ways in the context of service bundles. This augments earlier suggestions (e.g., Sweeney and Soutar, 2001) that different value dimensions in general play important and separate roles in forming both attitudes and behaviors in the purchase process.

The findings specifically indicate that bundle and non-bundle customers differ in their ability to evaluate price and functionality. The evidence suggests that when pursuing engagement behaviors such as WOM generation, firms need to highlight functional benefits more for those purchasing bundles and price benefits for non-bundle customers. This provides useful guidance for managers who devise their communication strategies to maximize positive WOM generation. However, this does not mean that the other segment should be neglected; in fact, while firms can certainly leverage the greater abilities of bundled customers to evaluate functional value and of non-bundled customers to evaluate price value, this presents an opportunity for firms to educate both groups to enhance their evaluation abilities. For instance, how can non-bundle customers be educated to increase their ability to evaluate functional benefits? While one option is to persuade them to bundle their purchases in the future by showing them what they are missing, they might also consider increasing functional benefits for non-bundle customers by expanding the scope of their service offering. Similarly, what might be done to increase bundled customers' ability to evaluate price? One possibility would be to reduce the complexity of bundle pricing. This advice may appear to run counter to the current business practice of deliberately creating complex bundles, so obscuring the reference price. However, while complex bundles have flourished in the context of high switching costs and non-competitive environments, competition is increasing in many industries, including telecommunications, and switching costs are diminishing. For that reason, firms that differentiate themselves through reduced complexity and ambiguity may be in the best position to make future gains.

The present results also demonstrated that when comparing the propensity of customers in these two groups to generate WOM, it is far more important to monitor perceived value than attitude, as it is value and not attitude that clearly differentiates WOM generation. This information is especially critical for managers who monitor metrics such as satisfaction but not value perceptions on an ongoing basis.

Not surprisingly, the results also confirm that functional value and price value are strong drivers of customer attitude. Specifically, when customers see the functionality and monetary value of the service relationship in a positive light, this creates a favorable attitude towards the service firm. However, the contrasting beta values for the FUN→ATT and PRI→ATT relationships ($\beta = .662$ and $\beta = .120$ respectively) are noteworthy, as these appear counterintuitive in light of the heavy price focus of communication strategies in highly competitive, commoditized industries such as mobile communications. As the partner firm also acknowledged, these results indicate a pressing need for more effective communication of the functional value of bundles as against the current emphasis on price competitiveness.

While this comparison of bundle and non-bundle customers relates to mobile phone bundles, the results can equally be applied to many other industries with similar characteristics. And while the focus here was on a product-service bundle, it is plausible that the results will hold for other types of bundle, such as a combination of two services. For instance, in industries such as financial services, insurance, and hospitality (as well as telecoms), customers can purchase either a bundle of services from a single SP or individual services from multiple SPs. While financial firms typically offer current accounts and savings accounts as basic services, mortgages, stocks, bonds, mutual funds, and the like can be bought from the same firm or from a competing firm. In the hospitality sector, customers can make a hotel booking through an online booking agent, or they can bundle it with an air ticket, travel insurance, car rental, and so on. As other

industries offer bundles in similar ways, the study's implications can be of relevance to many sectors.

While the current study investigated the relationships among different types of value, attitude, and WOM intent, a construct such as satisfaction could potentially replace attitude in this model, with similar results. Moreover, while the focus here has been on the single outcome of WOM, it is plausible that other common outcomes such as repurchase and broader engagement behaviors will display similar trends.

Conclusion

Utilizing a theoretical framework previously used to examine bundling, this research sought to identify empirically any differences between purchasers of product-service bundles and those purchasing components from two separate firms, focusing on how they evaluate price and functionality, and how such evaluations in turn impact attitudes and WOM generation. The study has been shown to contribute both to theory and to managerial practice. A unique feature of the study was its access to a leading telecommunication SP in Northern Europe and to their web panel of customers with known purchase characteristics (bundle vs non-bundle), yielding some important insights for both scholars and practitioners.

Limitations and future research

This study also points to a number of future research opportunities. The product-service bundle considered here is one type of mixed bundle, allowing a customer to purchase the entire bundle or separate components. However, there are other types of bundles, such as pure price bundles and

fully integrated bundles. There are also different ways of categorizing bundles—for instance, as customized or standardized. Future research should look at these various bundle types, as the understanding of how they impact post-purchase behaviors is very limited despite their ubiquity in various industries.

The present findings also indicate that increased value and reduced complexity are necessary conditions for overcoming some of the challenges posed by service bundles. Future research could usefully investigate optimum ways of communicating value created, as well as how to reduce the complexity of service bundles and increase their value. The current study provides a useful point of departure for such investigations.

There is also potential for further substantive extension of this research. This study distinguished broadly between the firm as resource integrator, bundling its own offerings, and the customer as resource integrator, sourcing the remaining service components. As noted earlier, recent developments in service delivery networks (Tax *et al.*, 2013) have created numerous in-between categories, often resulting from a single firm's inability to meet the holistic needs of customers (Kandampully and Duddy, 1999). In industries such as hospitality, entertainment, and even retail, it is common for single firms to offer an incomplete range of services. For instance, hotels may share the gymnasium and pool services of independent SPs or partner with restaurants, theatres, sports facilities, and museums to create service bundles. Retailers of household appliances may outsource/out-contract, partner with network partners, or recommend firms for services such as delivery, installation, and maintenance. Created within a network of partner firms, all of these bundles will have distinct characteristics, whose value and complexity are uniquely perceived by the customer, resulting in unique effects on behavioral outcomes. Research to date has offered few insights into such phenomena.

In terms of the present study's limitations, the use of cross-sectional survey data, although helpful in understanding directional relationships among constructs, does not support causal inferences, which ideally require a longitudinal design. As is commonly the case in cross-sectional research based on single-respondent, self-reported data, the present findings may have been affected by common method variance bias. However, as noted earlier, the potential for this problem was minimized by incorporating procedures during the survey design and implementation stages, as well as during data analysis, reinforced by multi-group analysis. To further diminish the likelihood of common method bias, future research could examine actual behaviors as opposed to behavioral intentions.

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APPENDIX

LIST OF ITEMS

	Factor loadings
Functional value	
<i>In terms of value offered, the Operator's product:</i>	
has consistent quality	0.869
is well made	0.879
has an acceptable standard of quality	0.838
has poor workmanship*	0.839
would not last a long time*	0.877
would perform consistently	0.893
Price value	
<i>In terms of value offered, My contract:</i>	
is reasonably priced	0.922
offers value for money	0.920
is a good product for the price	0.940
is economical	0.919
Attitude towards SP	
<i>Overall, my attitude toward the firm is...</i>	
1=Unfavorable...7=Favorable	0.962
1=Bad...7=Good	0.913
1=Dislike...7=Like	0.959
Positive word-of-mouth intentions	
I say positive things about the company to other people	0.907
I would recommend the company to those who seek my advice about such matters	0.782
I would encourage friends and relatives to use the company	0.918
I would post positive messages about the company on some Internet message board	0.925

Notes:

* reverse coded

All items measured on 7-point scales ranging from 1=*strongly disagree* to 7=*strongly agree* except attitude, which was measured on 7-point semantic differential scales.

Table 1: Average Variance Extracted (AVE), Reliabilities, Construct correlations, Means and Standard deviations

	AVE	CR	FUN	PRI	ATT	WOM	REL	BILL
Functional value (FUN)	.750	.947	.866					
Price value (PRI)	.857	.960	.495	.926				
Attitude (ATT)	.893	.962	.722	.448	.945			
Word of mouth (WOM)	.783	.935	.768	.483	.771	.885		
Relationship age (REL)	-	-	.091	.028	.108	.108	-	
Average monthly bill (BILL)	-	-	-.028	-.097	.015	.021	.052	-
Mean	-	-	4.96	4.60	5.29	4.39	12.25	2.71
SD	-	-	1.41	1.32	1.58	1.73	6.13	1.25

Notes:

1. CR = Composite reliability
2. Square Root of AVE on the diagonal,

Table 2: Direct effects model

	β^a	f^2	q^2	β^b	β^c
FUN → ATT	0.662***	0.706	0.557	0.596***	0.355***
PRI → ATT	0.120***	0.023	0.017	0.196***	0.473***
FUN → WOM	0.408***	0.239	0.176	0.430***	0.182***
PRI → WOM	0.089***	0.019	0.009	0.127***	0.308***
ATT → WOM	0.436***	0.288	0.146	0.382***	0.419***
RELAGE → WOM	0.014 ns	0.001	0.002	0.036 ns	-0.037 ns
BILL → WOM	0.033 ns	0.004	0.002	0.030 ns	0.009 ns
R^2, Q^2	R^2	Q^2			R^2
Attitude	0.532	0.472		0.534	0.619
WOM	0.695	0.541		0.706	0.699

Notes: ^aTotal sample; ^bBundle customers; ^cNon-bundle customers

Table 3: Multi-group analysis

	Indirect effects			Total effects			VAF		
	Outside bundle (n=333)	In bundle (n=819)	All (n=1152)	Outside bundle (n=333)	In bundle (n=819)	<i>p</i> -value	Outside bundle (n=333)	In bundle (n=819)	All (n=1152)
FUN → ATT → WOM	0.146***	0.228***	0.289***	0.331***	0.657***	***	0.441	0.347	0.415
PRI → ATT → WOM	0.198**	0.075***	0.052***	0.506***	0.202***	***	0.391	0.371	0.366

Notes: *** $p < 0.01$, ** $p < 0.05$; ns = not significant

Figure 1: The effects of service bundling on customer perceptions, attitudes and behaviors

