

St. Petersburg University
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Master in Management Program

USING ALPHANUMERIC BRAND NAMES AS AN
EFFECTIVE BRANDING OPTION FOR SERVICE PLANS

Master's Thesis by the 2nd year student

Concentration: general track, non-CEMS

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ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ ВЫПУСКНОЙ КВАЛИФИКАЦИОННОЙ РАБОТЫ

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Ключевые слова	Сервисные планы, брендинг, буквенно-числовые названия, поведение потребителей, недостающая информация

ABSTRACT

Master Student's Name	Shibanova Kseniia
Master Thesis Title	«Using alphanumeric brand names as an effective branding option for service plans»
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Description of the goal, task and main results	The aim of the research is to determine the effectiveness of the branding strategy for service plans using alphanumeric names in comparison to traditional brand names that do not contain numbers. The main assumption of the study is that alphanumeric brand names form a better attitude to the product and has a positive impact on purchase intentions. The study also analyzed the strategy of using alphanumeric names in the condition of missing information and identified patterns by which consumers associate the digital part of the name with the attributes of the product. For the analysis, primary information was collected and processed using statistical tests (ANOVA, t-test, etc) which confirmed the main hypotheses of the study.
Keywords	Service plans, tariff plans, branding strategy, alphanumeric brand names, ABs, consumer behavior, inference-making, missing information

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INTRODUCTION

Service plans are combinations of complementary services with fixed specific characteristics of service delivery over time. Service plan include such product categories as mobile communication tariff plans (cell services), insurance packages and anti-virus software solutions.

They have several characteristics that make the different both from goods and other services which create difficulties with their branding: it's hard to deliver the value of service plans to consumers and help them easily distinguish products among the line of similar proposals. In this situation companies tend to use special branding options to help customer make their choice and evaluate it more favorably compared to the traditional brand names.

Previous research shows interest to the topic of service plans in different product categories – some works investigate the topic in a broad way and some dedicate their studies to particular one (like cell services [Redden, Hoch, 2011], [Corrocher, Zirulia, 2010]). However, this interest was mostly limited to investigating the pricing strategies and studying consumer decision-making patterns applied for it, while branding still stays an important gap that has not been covered yet.

Use of numbers in the names of the offers is one of the possible options that is quiet popular - more than 50% of all the offers from cell service providers are branded this way. Thus, the topic of alphanumeric brand names arises as the probable solution to service plans branding multiple options per provider problem. ABs are mixtures of letters/words and numbers considered to be an important managerial option in today's marketing environment [Pavia, Costa, 1993] and some of their features make them look like a suitable branding option for service plans. Alphanumeric brands has been studied by various researchers with the earliest works mentioning the concept issued in 1980s and the most intensive studies over the several past decades, however, there is still plenty place for further research as there are studies touching upon the link between the strong positive consumers' associations with ABs and the product category but none of the mentioned ones hasn't been studied separately in a determined cultural environment.

The main assumption for the research is that ABs are an appropriate branding option for service plans, they are perceived by consumers in an adequate manner and boost their willingness to purchase.

The aim of this research is to confirm this assumption and give a set of more specific recommendations on service plans branding in general as well as specifically on the example of mobile communication tariff plans (cell services) as a benchmark product category that is common to most of the people because of their personal experience. The research objectives are:

- To identify whether ABs are appropriate for service plans' branding
- To check whether using ABs over non-ABs gives advantage to the service provider in terms of consumer perception and willingness to acquire the offer

- To investigate the effect of missing information in a combination with ABs as a potential extension of a branding strategy for service plans
- Study consumer inference-making associated with the numeric part of ABs specifically in service plans branding in order to give practical guidance on the ABs composition

The two dimensions: product attitude and willingness to purchase are used as dependent variables in the research, as they are the ones that should cause interest of the service plans providers because they define the image of the product and further contribute to the decision of whether to buy the product or not.

The study is using experiments as a research method, the data is obtained through the online survey featuring a certain stimuli followed by a series of questions about consumers' evaluation of the product and purchase intentions. The results are further summarized and analyzed using statistical methods in order to check the stated research hypothesis.

The proposed conclusion states that ABs are more effective branding option for service plans compared to the non-ABs in terms of product attitude and willingness to purchase the product with missing information in the product specifications description increasing the effect even more, the combination of ABs and missing information triggering consumer inference-making by giving a numeric anchor that helps to "fill in the gaps" in the description by the clients' suggestion favoring his choice.

1. THEORETICAL REVIEW ON SERVICE PLANS AND ABs

This chapter gives an overview of theoretical background of the study. Firstly, it introduces the topic of service (or as indicated in some works: tariff) plans - explains its' main features, states the problem of their branding and reveal some of the consumer behavior patterns studied previously with respect to service plan choice and purchase decision-making.

Then this chapter gives a systematic overview of the branding options already existent on the market, using Russian market of mobile communication tariff plans (or cell services) as a specific example of service plans to identify the major trends and branding possibilities. This overview gives a clear vision that simultaneously with the usual brand names consistent of letters/words providers use brand names combining words and numbers, which lead to the choice of this branding options for a more thorough study.

Thus the concluding section reviews the literature concerning Alphanumeric brand names (ABs), determining the research gap and formulating research hypotheses, offering to check the effectiveness of the AB option use for service plans and applying behavioral patterns associated with the use of ABs and number processing to the branding strategy.

1.1 Service plans: definition, specific features, branding

The topic of this research is “Using Alphanumeric brand names as an effective branding option for service plans”.

Service plans (also known as tariff plans) are combinations of complementary services with fixed specific characteristics of service delivery over time. Service plan include such product categories as mobile communication tariff plans, insurance packages and anti-virus software solutions.

They have several characteristics that make the different both from goods and other services

- Service plans are durable: they assume you use them during exact (quite long) period of time
- They can be complex and include a whole bunch of complementary features which create unique combination (mobile plans: phone line, internet, sms; car insurance: different types of cover ages in different situations; anti-virus protection: online security tools, USB check etc)
- Result is also spread over time and it's hard for consumer to assess the actual value of consumption (consumer gets used to it and starts taking it for granted) before they actually use it thus service plans are experience goods
- Payments can be spread over time as well
- Payments depend not only on consumption but also on the underlying tariff plan

- There is nearly always a line of different service plans offered by the same company and the difference usually lies in the combination of services and their amount
- Service plans nowadays are closely connected with technology

When it comes to service plans clients are heterogeneous in terms of willingness to pay and modes of service usage - switching costs are significant and typically limit the mobility of consumers across operator companies [Armstrong, Porter, 2007].

The price for mobile communication services, which for consumers is the monthly invoiced amount, is not only dependent upon the consumption of multiple units, such as minutes called, text messages sent or data used but also on contract specifications. As soon as a provider offers multiple tariff plans for one service, it is not unambiguously clear which tariff plan should be chosen to determine the service price for a profile that's why providers offer multiple tariff plan options instead one (figure 1) [Corrocher, Zirulia, 2006].

Hypotheses about consumer behavior must be made in order to select one tariff plan to determine the service price to be compared.

Traditional methods assuming rational behavior and perfect information suggests that one should always select the contract that minimizes the price per profile and provider. However, in reality consumers do not possess these optimal contracts for their individual profiles as there are lots of cognitive biases that prevent them from being fully rational.

To this point researchers paid much more attention to the pricing of service plans – there are works that focus on composing a two-part tariff [Lesgardset al, 2015], comparison of consumer perception of tariffs (flat rates vs per unit for example) [Redden, Hoch, 2011], etc. However, the topic of service plan branding wasn't covered yet, although appropriate branding helps managing consumer perception and choice. The characteristics of the service (tariff) plans mentioned above indicate that branding of the options across products of one provider might be problematic and require special approach, so that is the potential research gap that needs covering.

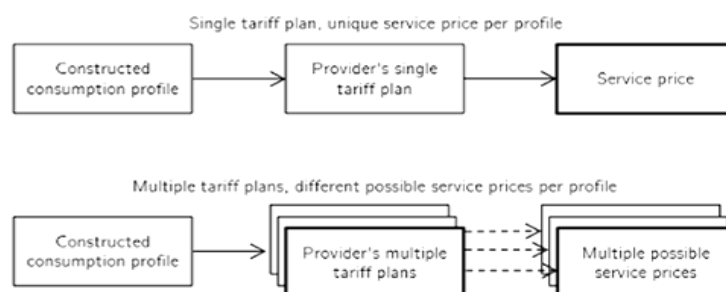


Image 1 The problem of product choice in service plans category

Source: [Lesgardset al, 2015]

Mobile communication tariff plans are one of the most common types of service plans – they possess all the features mentioned above and are quite widespread and usual to customers which make them an appropriate option for further research on the topic of service plans. That's why for the purpose of the study all the materials were designed to check the research hypothesis on mobile tariff communication plans, although the findings can be interpreted wider and attributed to the product category of service plans in general.

Mobile communication tariff plans have the following product considered as relevant (because they are parts of the invoiced amount typically for that kind of service plan):

- Minutes mobile: minutes called on another mobile phone. These minutes can also be separated into on-net and off-net calls.
- Short and multimedia message services (SMS/MMS): number of SMS/MMS sent.
- Gigabytes (GB): number of mobile data traffic consumed, measured in Gb.
- Roaming units: crossborder service consumption based on special roaming tariffs.

These differences define the main difficulties companies face when branding this plans: it's hard to deliver the value of service plans to consumers and make them easily distinguished from each other in the line of similar products even of one company. In this situation companies face basically several branding options presented in table 2, with the more promising option seeming to be the use of alphanumeric brand names which are mixtures of letters/words and numbers. Brand names and numbers are both important, yet relatively distinct parts of a consumer's world. However, brand names with numbers in them are an important managerial option in today's marketing environment [Pavia, Costa, 1993]. Alphanumeric brand names are widely used today and I assume that many of the features of the service plans (such as the fact that they are closely connected with technology, that they are usually parts of extensive product lines, that their real value is hard to assess etc.) make Alphanumeric brand names a suitable branding option for this kind of products which could be perceived by the consumers more adequate than the other ones. The aim of this research is to confirm this and give a set of more specific recommendations on service plans branding in general as well as specifically on the example of mobile communication tariff plans using experiments and statistical analysis of the market data as the main research techniques.

To the moment service plans branding hasn't been studied properly – there is very little information considering it. Alphanumeric brands has been studied by various researchers with the earliest works mentioning the concept issued in 1980s and the most intensive studies over the several past decades, however, there is still plenty place for further research as there are studies touching upon the link between the strong positive consumers' associations with ABs and the product category but none of the mentioned ones hasn't been studied separately in a determined cultural environment.

To investigate the issue further a systematic examination of the options presented in the market was conducted. Cell services were chosen as a very typical product for tariff plans. On the example of Russian market – all the possible tariff plan branding options were collected across the four major communication plan providers (MTS, Megafon, Beeline, Tele2).

4 telecommunication companies brands amounting all in all 31 mobile tariff options: 13 of which were independent and 18 of which belonged to one of the 9 product lines were included into the comparison.

The full table containing the branding options is presented in Appendix 2. The comparison of the chosen products showed the following ratio of ABs: 16/31, which accounted for more than the half of all the options used (51,6%) with nearly all ABs belonging to the product lines. The analysis identified a clear tendency of the service plans providers to distinguish tariff options among one product line using some size and/or features indicators – either more emotional (MTS – mini/nonstop/withoutlimits/plus, Tele2 – very/the most/super/unlimitedly) or more formal (Beeline – ABs using price or amount of Internet traffic in the numeric part, Megafon – XS/S/M/L/VIP, MTS – in the archive Business and Profi lines using ABs with price). Also it was noted that at some point MTS changed its branding strategy and completely changed its product lines as well as naming and the amount of ABs declined dramatically (they were mainly used for corporate offers). Thus an assumption was made that this kind of branding strategy has a particular ground.

To check this assumption the first step was to dig deeper into the topic and study existing literature on the topic.

The relevant literature on the topic primarily concerns the concept of alpha-numeric brand names and its effect on consumer behavior when used for branding various kinds of products both from the theoretical and practical sides. Some of the articles also touches the point of fluency, in other words of how to make the consumer choice easier and help him to distinguish among the variety of the similar product options. The research on the topic became more intensive in the last decade although one of the pioneering articles on the topic “The Winning Number: Consumer Perception of Alpha-Numeric brand Names,” by Pavia and Costa was published in 1993. However, it is still quiet limited.

The literature reviewed consists of recent articles retrieved from various scientific journals: Journal of Marketing Research, Journal of Brand Management, Journal of Consumer Research, Journal of Marketing and covers information about consumer choices and the effects that should be taken into consideration while branding specific items that is relevant to the topic of the study.

1.2 Definition and taxonomy of alphanumeric brand names

Pavia and Costa (1993) define alphanumeric brand names (Alphanumeric brand names) as those which include a mix of letters (as well as words) and numbers (“one or more numbers in a digit

or a written form”). Alphanumeric brand names are also defined to include a product designation where the model number is used to fully identify the product (like Mazda RX-7). Several significant features of Alphanumeric brand names are: the magnitude of number, its shape or spoken sound, symbolism of words and letters [Pavia, Costa, 1993]. The previous research shows that the inferences consumers draw from Alphanumeric brand names have influence on their understanding and expectations of the product.

Examples of Alphanumeric brand names include 7UP soft drinks, the 3M Corporation, and the Pentium IV computer chip [Gunasti, Ross Jr., 2010]. The main factors according to Boyd (1985) that define the popularity of the Alphanumeric brand names are: the spread of technology, the increased use of market segmentation, the difficulty of finding and implementing brand names, the decrease in product life cycles, and the tendency to extend a favorable brand name to new product.

There are many types of Alphanumeric brand names – they can look very different from each other, that’s why for further better understanding of the concept authors of the article “How and When Alphanumeric Brand Names Affect Consumer Preferences” suggest to categorize Alphanumeric brand names using two following dimensions (1) how the increase or decrease in the numeric portions of brand names aligns with some product aspect and (2) how the brand name links with the brand’s attribute values and/or the overall product. [Gunasti, Ross Jr., 2010]. Developed taxonomy is presented on the picture below (see picture 1) and is quiet useful in defining a set of recommendations for developing a branding strategy based on the use of Alphanumeric brand names as AB type moderate the effect brand name might have on consumer [Gunasti, Ross Jr., 2010].

TAXONOMY OF ABs

	<i>Linked (to Specific Product Attributes)</i>	<i>Nonlinked (to Specific Attributes or Linked to Overall Product)</i>
<i>Aligned Brand Names</i>		
Aligned-ascending (“the higher, the better”)	<i>Technical Symbolism</i> <ul style="list-style-type: none"> •AMD32 versus AMD64 chips (32 bit versus 64 bit processing) •BMW 3.28 versus 3.35 (2800cc versus 3500cc engine) 	<i>Product Extensions</i> <ul style="list-style-type: none"> •Boeing 737, 747 •Audi A3, A4, A6, A8 (overall series) <i>Recency in a Series:</i> <ul style="list-style-type: none"> •Pentium 2, 3, 5 •Play Station 1, 2, 3 <i>Date of Release</i> <ul style="list-style-type: none"> •Windows 95, 97, 2000 •TurboTax 2005, 2007
Aligned-descending (“the lower, the better”)	<i>Undesired Attributes</i> <ul style="list-style-type: none"> •Nickles 35 breads (35 calories) •GE Genura 23, 55 Lamps (23 or 55 watts consumption) 	<i>Mythical Numbering</i> <ul style="list-style-type: none"> •Calvin Klein One perfume (cues uniqueness)
<i>Nonaligned Brand Names</i>		
Nonmonotonic (not necessarily increasing or decreasing)	<i>Direct Symbolism</i> <ul style="list-style-type: none"> •Xbox 360 (360° game view) <i>Abbreviations</i> <ul style="list-style-type: none"> •V8 juice (contains eight vegetables) 	<i>Abbreviations</i> <ul style="list-style-type: none"> •3M (Minnesota Mining and Manufacturing) •WD-40 (40th formula of Water Displacement) <i>Direct Symbolism</i> <ul style="list-style-type: none"> •7-Eleven (open 7:00–11:00) <i>Mythical Numbering</i> <ul style="list-style-type: none"> •No. 7 cosmetics (lucky #7) •Cerruti 1881 perfume
Monotonic (neither higher nor lower level brands preferred)	<i>Preference Depends on Needs</i> <ul style="list-style-type: none"> •Coppertone 30, 40, 50 (sun protection factor) 	<i>Design Codes</i> <ul style="list-style-type: none"> •Levi’s 501, 505, 607 (different cuts) <i>Inventory Codes/Internal References</i> <ul style="list-style-type: none"> •Panasonic TH-S0PZ85U (firm-specific, expert users may know)

Image 2 ABs taxonomy

Source: [Gunasti, Ross Jr., 2010].

1.3 Appropriate use of the alphanumeric brand names

Previous research on the topic identified some major product categories generating a better fit with alphanumeric brand names. The most significant contribution to this area was made by Pavia and Costa (1993) who used the combination of nondirective exploratory depth interviews with focus groups, free associations task and questionnaire to get the broad range of product categories that go with Alphanumeric brand names in the eyes of consumers. Taken as a whole the data they collected pointed to a whole web of consumer beliefs about the alphabet, numbers, product features etc. For most consumers they were tightly linked with mathematics and the world of technology and science, that's why people felt they would be more appropriate for serious, non sensual products as well as modern, non-traditional ones and not appropriate for the things connected with fun, pleasure and comfort as well as for basic food [Pavia, Costa, 1993].

The results of the focus group interview are presented on the picture below. More specifically, the names were all associated with chemically formulated products, foods based on special recipes, technological or electronics goods, sports equipment, household appliances, or medications. The results are also notable in terms of excluded product categories. None of the alpha-numeric brand names was associated with baby products, household furnishings, or old-fashioned products.

FOCUS GROUP PARTICIPANTS' PERCEPTIONS OF USES FOR ABs		
	<i>Appropriate Uses for ABs</i>	<i>Inappropriate Uses for ABs</i>
Cars	<ul style="list-style-type: none"> •Sports cars •High-performance cars •Luxury cars that emphasize performance (e.g., Mercedes) 	<ul style="list-style-type: none"> •Luxury cars that emphasize comfort (e.g., Cadillac)
Clothes	<ul style="list-style-type: none"> •Work clothes •Sports clothes •Neon-colored clothes 	<ul style="list-style-type: none"> •Lingerie •Fur coats •Baby clothes
Furniture	<ul style="list-style-type: none"> •Office furniture •Contemporary/futuristic styles 	<ul style="list-style-type: none"> •Bedroom furniture •Traditional styles
Generalizations, not absolute rules, made by the focus groups	<ul style="list-style-type: none"> •Functional products •Complex products •Technical products •Modern products 	<ul style="list-style-type: none"> •Fun products •Sensual products •Simple products •Nontechnical products •Traditional products

Image 3 Focus groups results summary

Source: [Pavia, Costa, 1993]

Based on this findings the author concludes that Alphanumeric brand names seem to be an important option when the company seeks an unregistered, highly protectable name or when a consumer wants to see the brand as more futuristic or high-tech. However, based on the analysis of the products standing in opposition to the findings the author makes a notion that sometimes use of

Alphanumeric brand names can be effective for other categories with the proper marketing although that may seem problematic [Pavia, Costa, 1993]. Other research also notes that the effects of Alphanumeric brand names on consumer preferences are prevalent for most technical products, even when consumers do not know the product category or meanings of attributes [Gunasti, Ross Jr., 2010].

Service plans are not included in the suggested product types associated with the ABs use, however they possess the necessary attributes that allow to suggest that the use of them might be successful in terms of better perception of the product and higher willingness to purchase it. Thus, the following hypothesis arises from this claim:

H1: Use of ABs in service plans options' branding lead consumers to evaluate the options more favorably (e.g., as a better product) and show stronger purchase intention (e.g., being more willing to buy the product) than use of non-Abs

The dimensions of product attitude and purchase intentions are chosen as some of the previous research uses them for concept testing [Gunasti, Ozcan, 2015] as important dimensions of consumer preferences and choice.

1.4 Decision rules connected with the use of ABs

1.4.1 Rules based on the numeric part of alphanumeric brand names

In their benchmark study, Pavia and Costa (1993) investigate how consumers react to the magnitude of the numbers and the symbolisms of the letter combinations used in alphanumeric brand names. They find that the numbers in brand names play a vital role in determining consumers' perceptions of the product and its relative newness.

When reading the Alphanumeric brand names consumers generally follow two different strategies [Gunasti, Ross Jr., 2010] they either use heuristics (such as “the higher, the better”, or “the lucky number” [King, Janiszewski, 2011], [Ang, 1997] etc) in earlier decision-making stages, and regardless of attribute values, or process brands more deeply to understand and infer brand–attribute correlations. The underlying reasons for this strategies and common decision rules include desire and need for fluency (easiness of information processing [Novemsky et al, 2007]) beliefs about the numbers and the common operations with numbers lying deep in our long-term memory (those that became “muscle” memory) [King, Janiszewski, 2011] and common sense and logic.

Many decision rules people use when processing the numeric part of the ABs is connected with the concept of fluency mentioned above. Preference fluency is the consumer's subjective feeling regarding the ease or difficulty of forming a preference. The research shows that consumers tend to

prefer the options requiring less processing effort from them. The findings support the notion that preference fluency is an important determinant of whether a purchase decision will be made and which option will be chosen [Novemsky et al, 2007]. Specifically they indicate that conditions that promote preference fluency often play a key role in determining whether a purchase will be made.

The article “Preference Fluency in Choice,” by Novemsky et al (2007) also suggests that fluency can be created. The managerial implication for branding different products is that it’s important to understand the rules of consumer perception and processing of particular branding option for making it as easy as possible for the consumer to form a preference. In particular, attribute information needs to be easy to read and process and presented in a way that facilitates preference formation. Using the same units for making options comparable and help shoppers form preference promote fluency [Novemsky et al, 2007]. In summary, preference fluency is a key determinant of consumer choice forming decision rules on which branding is based.

1.4.1.1 “The higher the better” heuristic and other magnitude effects

One of the most obvious and visible characteristics of the numeric part of the alpha-numeric brand names is the total number of digits and the magnitude of the digits used.

According to the focus group results from one of the studies: in each focus group, participants stated that large numbers indicate greater complexity, sophistication, precision, and a product that is more recent [Pavia, Costa, 1993].

Previous research shows that it’s quiet common for consumers to make an assumption, that higher-level numbers in the brand names correspond to better products [Pavia, Costa, 1993], [Gunasti, Ross Jr., 2010], or higher generation of the product [Auh, Shih, 2009].

Gunasti and Ross (2010) report five empirical studies examining the systematic effects of Alphanumeric brand names on consumer choices using consumers’ need for cognition, the availability of product attribute information, and the taxonomic category of the AB as moderators. The combined results reveal that low-need-for cognition consumers (LNCs) tend to use “the higher, the better” brand name heuristic while high-need-for-cognition consumers (HNCs) tend to process brands more accurately looking for the brand–attribute correlations. They also reveal that in the absence of information about the product attributes this rule work as well, because consumers replace the missing information by making inferences between higher level Alphanumeric brand names and better product quality.

Typically this conclusion was drawn from the study of the mechanism which consumers use to decode the Alphanumeric brand names. It was found that the typical inquires arising in the heads of consumers while facing the Alphanumeric brand names were the following [Gunasti, Ross Jr., 2010]:

1. Comparisons among products labeled with Alphanumeric brand names (i.e., “Which brand is superior to the other?”),
2. The relationship between an AB and the brand’s attribute values (i.e., “Which attributes do brand names refer to and how?”),
3. The rationale or meaning of the AB alignment (i.e., “What is the rule used for branding or the logic of the order followed by the brand names?”).

Consumers with low need for cognition are reported to be satisfied with making the first inquiry only which typically results in the answer that the higher value of Alphanumeric brand names stands for the better product, while the consumers with high need for cognition move further in their investigations.

This also counts for the cases when it is hard for consumer to evaluate the intrinsic product features (even when they are given) - in the categories strongly associated with Alphanumeric brand names when presented with the brand names showing some sequence people tend to use the rule mentioned above [Pavia, Costa, 1993].

Augh and Shih (2009) at the same time draw a similar conclusion when studying how Alphanumeric brand names affect choice of multigenerational products – people tend to have a belief that higher level name signal a higher generation. Also the authors note that the use of different combinations of brand names (Alphanumeric brand names of different types and ordinary brand names) for the sequential product generations might signal the type of innovation (breakthrough or normal) and finally lead to a higher willingness to pay. While products in a line of service plans have the same characteristics as multigenerational products (they differ in quality and volume characteristics of different product features) this is a very important finding to be taken into account in a sense that they can create more perceived differentiation than verbal brand names [Auh, Shih, 2009].

Besides the use of “the more the better” (or “the higher the better”) decision rule there are a few other magnitude effects mentioned in the previous research.

Pavia and Costa (1993) state that, although there is the commonly used heuristic discussed above this decision rule has an important limitation as it works only in the condition of the comparison of several units. When there is only one separate product given, low numbers are not associated with low power, they can work vice versa creating associations for uniqueness and perception that the product stands out (like “The one” perfume).

According to one of the hypothesis tested in the article “The Winning Number: Consumer Perception of Alpha-Numeric brand Names,” as the product becomes more technical, formulated, chemical or powerful consumers were supposed to better associate the higher number with it. This would suggest that when presented with the two brand names, "Dehax 3" and "Dehax 3000," and the two product categories, "industrial-strength detergent" and "household detergent," consumers will rate

Dehax 3000 most favorably for the industrial-strength detergent and Dehax 3 most favorably for the household detergent. This did not occur to any significant degree, and consequently these data do not support the assumption made about the magnitude effect [Pavia, Costa, 1993].

1.4.1.2 Fluent processing of numbers

Number fluency is relevant to creating ABs. Consumers tend to prefer fluently processed stimuli [Novemsky et al, 2007], that's why additionally to the magnitude effects of all kinds number fluency play crucial role in ABs processing and understanding.

King and Janiszewski (2009) show, that when the numeric portions of alphanumeric brand names can be interpreted as the result of the common arithmetical operations like multiplication ($2*2$ through $10*10$) or addition (e.g., $1 + 1$ through $10 + 10$) rather than prime numbers, they generate better affective responses from consumers. Common addition and multiplication problems (arithmetic), or their operands, can be used to prime a number and increase its fluency but the benefits of arithmetic and operand primes are limited to single primes (i.e., more primes are not necessarily better) [King, Janiszewski, 2011].

There is also a variety of research on numbers and mathematics that is relevant for the aspect of fluent processing and creating definite associations in the heads of shoppers. Many superstitions in the Anglo-Saxon culture involve numbers. Knapp and Chen (1964) evaluated the affective, religious, and symbolic meaning of the primary digits 1 through 9. In general, they found that the smaller numbers (1,2, and 3) were described as "simple, complete, and weak;" large numbers (those over 3) were seen as "smooth, powerful, complex, and masculine;" even numbers were "smooth and feminine," and odd numbers were "lucky and powerful." In two other studies, subjects were questioned on the topic of associations they could make with the numbers 0-100 (Battig and Spera 1962; Cochran and Wickens 1963) and the respondents indicated that it was easy to make many associations with numbers such as 100, 1, 0, 2, and 13. All these studies suggest that numbers, in and of themselves, may have surplus meaning to individuals which may be relevant while branding.

As consumer tend to perceive fluently processed stimuli as more preferable and this rule applies to ABs in general, it might be assumed that fluency plays a more important and broad role in the mechanism of consumers' analysis and processing of ABs branded products. The previous research applies the concept of fluency to particular pattern concerning numbers while not attempting to investigate the role of fluency in ABs perception by the consumers. That's why a hypothesis is stated:

H2: Use of ABs in service plans options' branding lead consumers to make their judgment about the product easier (evaluate them with less effort) than use of non-ABs

This hypothesis aims at understanding the mechanism of consumer perception of ABs and looks at fluency (perceived easiness of information processing) as at the potential mediator of consumer opinion towards the product and its purchase intention. This concept applied broader might have practical contribution as well as applying it only to brand name formulation pattern, giving an insight into consumers' thoughts.

1.4.1.3 Default units effect

The information in the numerical part of the ABs are sometimes connected with the product attributes (for example AMD64 chips use 64-bit processors) and these product characteristics can be expressed in different units (especially when it comes to technical characteristics) so that the actual number used in the description might be very different.

Research on attribute framing has shown that people often infer higher quantity from larger numbers, usually with the assumption that the units used to specify this information elicit the same meanings, Lembregts and Pandelaerne (2013) in their article "Are All Units Created Equal? The Effect of Default Units on Product Evaluations," challenge this assumption and show that consumers often have preset units for attribute levels that in order to maintain balance between a preference for small numbers and the need for accuracy. As such, default units appear commonly and result in better evaluation from the side of the customer, even if such specification lowers the nominal value of the attributes [Lembregts, Pandelaerne, 2013].

1.4.2 Rules based on the verbal part of alphanumeric brand names

As letters and words represent one of the parts of the Alphanumeric brand names they have the same importance as numbers: the symbolism of the letters and their combinations also contributes into the decision-making involving interpreting the Alphanumeric brand names – for example, the letters usually help consumers identify the product type [Pavia, Costa, 1993]. The decision rules here are closely linked to the results of research on phonetic symbolism, which offers a wide range of typical consumer beliefs about the sounds, words and their link to various product categories, some of which are presented below.

Almost all existing research on phonetic symbolism uses the so called Juliet principle (it states that names have no intrinsic meaning) as the null hypothesis and asks, as an alternative, whether people associate meaning with particular sounds [Pavia, Costa, 1993]. To mention some of the research direction; one branch focuses on the aural effect of the word on the listener while other on the higher than expected incidence of consonants (as C, D, G, K, P). Sapir (1929) and Dogana (1967) reported that certain vowels and consonants "sound bigger" than others and, when used in a nonsense word, are interpreted by the majority of listeners as referring to a large object while Schloss (1981) and

Vanden Bergh, Alder, and Oliver (1987) have noted that nonsense names beginning with C, D, G, K, P, and T evidence higher recall and higher recognition.

1.4.2.1 Place in the alphabet effect

In their benchmark study, Pavia and Costa (1993) find that the letters usually help them identify the product type. Hypothesis “In a product category in which consumers are comfortable with alpha-numeric brand names and in which consumers expect speed and complexity, consumers will rate a brand name constructed from a 'Z' and a number more favorably than a brand name constructed from an 'A' and a number.” was tested using data from sets 3 and 4 for the product, "new computer drive." The ratings for Z 5 and Z 50 as brand names were more favorable than the ratings for A 5 and A 50, $p < 0.1$. The significance level for this contrast is not as high as other differences tested here. That is, consumers rated the fit higher for A 5 as a new computer drive than they did for A 50, while they rated the fit higher for Z 50 as a new computer drive than they did for Z 5. Z 50 received significantly more favorable ratings as a brand name for a computer drive than did A 50, $p < .05$.

The participants suggested that the letters used to form an alpha-numeric brand name had significant influence on the inferences that were drawn from it. Within each focus group, participants indicated that the alphabet progressed in complexity from beginning to end. The letters X and Z were believed to be indicators of high-technology, speed, and complexity, particularly when coupled with large numbers. X and Z were also generally perceived as "masculine" letters, reflecting their sharp visual appearance, their harsh spoken sound, and their placement at the hard-to-learn end of the alphabet.

1.4.3 Missing information and inference making

When ABs are used some people do not simply follow the heuristics but rather process brands more deeply to understand and infer brand–attribute correlations. [Gunasti, Ross, 2010] suggests that this fact can be connected with the concept of missing information and inference-making. In many cases promotional materials do not provide consumer with the full information about the product attribute, even the most important ones, which makes consumer make suggestions or inferences with the provided information to fill in the missing details. This typically leads to an increased uncertainty of choice and make consumers process the brands more deeply [Gunasti, Ozcan, 2015], [Gunasti, Ross, 2010].

ABs might connect the numeric part with some specific product attribute and thus give customer a clue to inference-making. As consumers do not know the exact level/description of the product attribute they are very likely to match it with their internal expectations about the offer. Such offer will lead to increased uncertainty and increased processing effort, which to certain extent make consumers perceive the option they are offered better compared to those with full information.

However, when a customer has no clue at all to inference-making he might feel lost and disoriented [Wegener et al, 2010].

All this leads to a suggestion that in the situation of the missing information ABs will be perceived better by consumers as leveraging the uncertainty and serving as an anchor to boost further inference making.

Thus the following hypothesis arise:

H3: Use of ABs in service plans options' branding lead consumers to evaluate the options more favorably (e.g., as a better product) and show stronger purchase intention (e.g., being more willing to buy the product) than use of non-ABs both under the full and missing information conditions

H4: Under the condition of the ABs use in service plans options' branding missing information in product description leads consumers to evaluate the options more favorably (e.g., as a better product) and show stronger purchase intention (e.g., being more willing to buy the product) than full information in product description

Also the question arises on the attributes that consumers make inference with, in the specific case of service plans. [Redden, Hoch, 2011] suggest that when consumers make choice between tariff plans (cell services) they use pairwise comparisons of the attributes with flat rate stated as the most important attribute defining the choice. That leads to a suggestion that price (monthly fee) not only is the most important attribute, but rather is the attribute in consumers mind defining the offer itself and might serve well for inference-making. Unlike with many other products (with no direct sales) service plans provide an opportunity to include price into the numeric part as the price is controlled by the provider who is also the seller. That's why a following hypothesis arises:

H5: Under the missing information condition consumers are more likely to associate the numeric part of the service plan AB with the price, rather than with the other product attribute

Summing it up, the research questions that arise from the literature review are the following:

- Are ABs appropriate for branding service plans?
- Are they perceived better than other branding options?
- What should be done specifically to effectively use this option for the product category?
 - Do consumers draw particular associations with the numeric part and what should be used in it?

- How does the magnitude effect works with service plans? Which magnitude of a number is perceived better by consumers?
- Can ABs leverage the effect of missing information in the product description?

2. OUTLOOK OF THE RESEARCH AND DATA COLLECTION METHODS

The following chapter introduces general research methodology by overviewing the methods used for data collection and analysis as well as the variables that are used in order to check the stated hypothesis.

It gives definitions to the main research methods that were used to investigate the issues stated: experiments using online survey to collect the data and further statistical tests to analyze it along with free association task used to trigger inference-making and reveal its patterns. Along with the definitions this part gives some specific details of the data collection process design and describes dependent variables and the way they are measured.

Based on the previous research on the topic, the literature review a conclusion could be made that the most appropriate research method based on the proposed hypothesis and research questions should be the combination of the qualitative and quantitative research methods.

To answer the proposed questions various research techniques are used such as: systematic examination of the market options, free association task with follow-up depth exploratory interview, experiments and additional survey questions. Combination of the techniques will allow exploring the major trends in consumer decision-making, and checking whether they correspond to those assumed as a result of literature review as well as quantify the findings and check their statistical significance in order to make sure the inferences of sample trends with the whole population can be made.

The use of these research methods is supported by the statistical analysis: reliability analysis is used to reduce the dimensions of the study and form the variables that are used as the measures in the studies, various tests are used to check the violation of the assumptions for t-test and ANOVA, independent sample t-test is used for the manipulation check and univariate ANOVA is used for each of the dependent variables studied to find out the between-group effect of the manipulation.

2.1 Experiments

Traditionally, experiments have been used by physical and behavioural researchers to a great extent; nevertheless, experimental research can be effectively used in many other research fields in order to analyze cause and effect relationships by using deductive approach.

Experiments are usually used in causal studies, because they typically involve manipulation with an independent variable (cause) in order to assess its impacts on dependent variables (effect). Assessing impact of changes in price levels (independent variable) on volume of sales (dependent variable) can be mentioned a basic example of experiment manipulation. Their advantage is that they allow to use the primary data but at the same time controlling the circumstances in which it is gathered and as a result getting the desired levels of both internal and external validity.

Consumer behavior studies often use experiments to find out and check certain patterns in consumer decision-making. Most of the articles discussed in the literature review section also rely on this type of data collection technique.

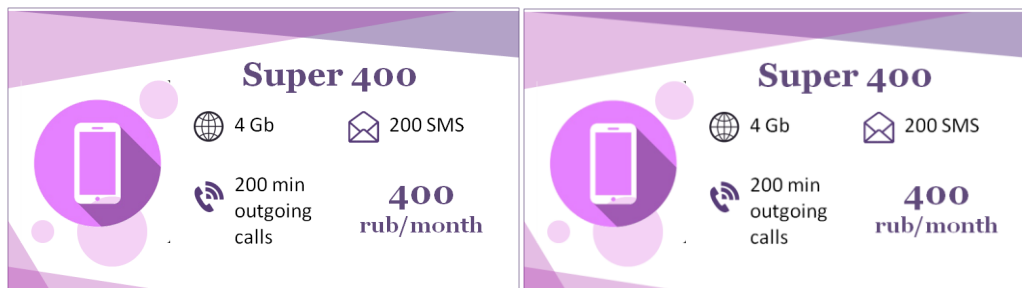
Experiments can be divided into two categories: field and laboratory. The following table (source: Saunders, Thornhill, 2007) illustrates the main differences between these alternative types of experiments:

Table 1 Difference between field and laboratory experiments

Laboratory experiments	Field experiments
Artificial – low realism	Natural – high realism
Few extraneous variables	Many extraneous variables
High control	Low control
Low cost	High cost
Short duration	Long duration
Subjects aware of participation	Subjects unaware of participation

For the purpose of the given research most appropriate would be to use laboratory experiments (paper-and-pencil experiments) as the field experiments are harder to control and design. The experiments used have a between-subject design with one or several variables used for manipulation.

The experiment is conducted in a form of an online survey as the most appropriate format for collecting data over a big sample, to keep it representative 25-50 respondents are assigned to each experiment condition. The experiment is based on using a stimuli to acquire consumer reaction that is close to reality: respondents are presented with the image representing an offer of a cell service provider stating the brand name of the option and supplemented with the table of specifications (the template is presented on the picture below).



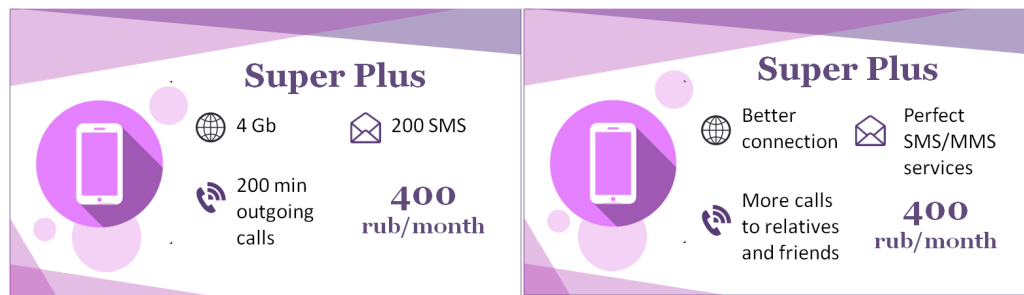


Image 4 Template of a stimuli used for the experiment

The stimuli put consumer in a situation of a real life choice of product and its evaluation, so that the question that follow in a form of a survey are answered accordingly with his personal perception of the offer, which means that the values obtained are good indication of consumer reaction in a situation of purchase decision-making. Stimuli use both existing branding layout (MTS Smart tariff plan) and the layout of a non-existing brand designed specially for the purpose of the experiment.

2.2 Surveys

Survey research is one of the most important areas of measurement in applied social research. The broad area of survey research encompasses any measurement procedures that involve asking questions of respondents. A "survey" can be anything from a short paper-and-pencil feedback form to an intensive one-on-one in-depth interview [William, Trochim, 2016]. For the purpose of this research online questionnaires would be used for pretest phase.

Also as the experiments will be performed in a laboratory format it would be appropriate for the purpose of the study to use online surveys for simulation and data collection.

The survey questions are grouped into several sections. Each of the section corresponds to one of the dependent or control variables. Some additional questions seeking the information about consumer knowledge of the market and their overall perception of cell services and choice patterns are also included.

The questions which are further used to get the measure of two main dependent variables: product attitude and purchase intentions are retrieved from [Gunasti, Ozcan, 2015] and supplemented with the sections on fluency (perceived easiness of choice), numeric literacy and attitude towards the offer itself (price, uncertainty level etc).

All of the questions have the same 7-point Likert scale to create consistency over the responses and create a possibility of combining the measures using the mean values.

2.3 Free associations task

Free association is a technique used to learn more about what participants of the study are thinking and feeling. Free association are used not only to discover the logic of thoughts but also

unconscious component that is commonly repressed or ignored. It is widely used in consumer behavior studies to find out associative links concerning particular product, brand names etc. It helps identify common patterns in thinking and decision making.

To interpret free association task results researcher might use additional follow-up interview or focus groups to get a deeper understanding of the process and underlying issues.

Free association task was performed as the way to get consumers' opinion in an unstructured way allowing participants to express their insights that go beyond the formal response to the questions and that might give a clue to further research direction. Some of the previous research on the topic also use this method [Gunasti, Ross, 2010], [Pavia, Costa, 1993] to identify trends and behavior patterns that were further used to summarize the results and turn them into more formal findings.

2.4 Statistical analysis tools

Data collected through experiments as well as from other research techniques used will be further analyzed using statistical procedures: Independent sample t-test will be used at a pre-test phase to check whether product description in supplementary information materials correspond to the properties assumed (missing/full information corresponding to a high/low degree of uncertainty), different types of analysis of variance will be used to check the effect of the manipulation in the between-subject study design, descriptive summary statistics will be used to analyse the trends and tendencies in consumer choice while factor analysis will be used to extract appropriate factors out of the multiple survey answers.

Measures acquired in the survey will be combined using mean values with reliability analysis performed as a pre-test to check whether the investigated measures may be combined or not based on the Cronbach alpha criterion.

ANOVA is a statistical method that stands for analysis of variance. ANOVA is developed by Ronald Fisher in 1918 and is the extension of the t and the z test and creates a way to test several null hypothesis at the same time. The logic is connected with how much variance the population contains. The test helps to compare the differences in the samples to find out whether there is significant statistical difference in it while still accounting for sampling error [StatisticsSolutions, 2016]. Univariate ANOVA will be performed on each of the variable to test the between-subject effect of the manipulation.

Free association task and inference-making experiment will be also tested using frequency analysis (along with chi-square statistics) to see the frequency of the inference occurrence among the sample and use these values as predictions for the whole population.

2.5 Dependent variables and their measures

The dependent variables were chosen due to the hypotheses stated and based on other theoretical works on the relevant topics. Hypotheses clearly highlight two dimensions that determine consumer decision making process: product attitude and purchase intention. They also cover fluency issue.

These three variables are used as dependent variables in the tests including ANOVA manipulation. Several variables are used to control that the sample is homogeneous (number literacy and market knowledge) which means the groups show no significant difference in means of these variables. The following table summarizes the variables.

Table 2 Variables used in the study

Variable	Questions used to collect data	Source
Product attitude	The product is good, I like the product, The product is likely to meet my expectations	[Gunasti, Ozcan, 2015], [Gunasti, Ross, 2010]
Willingness to purchase	I will buy the product, My willingness to purchase the product is high	[Gunasti, Ozcan, 2015], [Gunasti, Ross, 2010]
Fluency	It was easy to evaluate the product, Options' names helped evaluate the product, It will be easy to compare the offer to other options in the market,	[Novemsky et al, 2007]
Number literacy	I do mental calculations easily, I remember numbers easily, I connect numbers I see with associations	[bby Publications, 2013], [Novemsky et al, 2007]
Market knowledge	I know a lot about cell services	[OJSC MTS, 2010]

All of the results obtained from the survey were further analyzed using statistical methods to see if the predicted questions can be used to form one variable. The results of the reliability analysis could be found in the next section.

DATA COLLECTION AND ANALYSIS

This chapter introduces the research process and its results. It consists of the description of three different studies that supplement each other in order to check research hypotheses.

Each section contains information on the research design of each study, data collection method, general information about the sample, variables measured, data analysis procedure and brief overview of the results obtained. The description is supplemented with additional materials in the appendixes featuring exact questionnaire design and questions as well as SPSS outputs for statistical tests performed on the data giving more detailed view of the analysis.

Study 1. ABs versus non-ABs

The purpose of study 1 was to test H1 by examining how use of ABs versus non-ABs influences consumers' evaluations of service plan options and strength of purchase intentions. It was tested whether using ABs, compared to non-ABs leads consumers to evaluate options more favorably (as a better product) and show stronger purchase intention (being more willing to buy the product).

H1: Use of ABs in service plans options' branding lead consumers to evaluate the options more favorably (e.g., as a better product) and show stronger purchase intention (e.g., being more willing to buy the product) than use of non-ABs

One hundred respondents participated in a between-subjects experiment. Most of the respondents were students 18-25 years old, with 35% of the respondents being men and 65% being women. All respondents were exposed to specifications of a mobile communication tariff plan options product line of MTS Smart tariff (the existing brand) branded either with AB or non-AB, depending on the condition assigned randomly to each participant.

The brand MTS was selected as a market leader that is familiar to most of the people. It holds the leading position in Russia with a 31% market share [MTS Official website, 2017] and 91% brand awareness [MTS Annual Report, 2014].

Stimuli consisted of a picture with a brand layout design (colors, symbols etc) which included a brand name of an option and a table of specifications (Appendix 8). Both the layout and the table design and content were derived from the real promotion materials presented on the website of the service provider.

The table of specifications included full information about the number of minutes, SMS/MMS and Internet traffic as well as the monthly paid flat rate – consumers were given an actual number for each product attribute. The picture was photoshopped, so that it didn't match the real market offer exactly, but still was very close to the average offer in the market as a whole (not only the brand used

for layout). Both offers were identical, except for the brand names, which was the manipulation variable. Participants were given time to review the specifications of the tariff plans on the following product attributes: minutes of outgoing calls available, amount of Internet traffic, number of SMS/MMS available and price.

Next, participants were asked a range of questions to indicate their evaluation for product (the product is good, I like the product, the product is likely to meet my expectations; $\alpha = .883$) and purchase intentions (I will buy the product, my willingness to purchase the product is high; $\alpha = .903$). 7-point Likert scale was used for each question with the higher point corresponding to the better product attitude (ATT) evaluation and stronger willingness to purchase (WTP).

The data collected didn't contain significant outliers and met all the assumptions for ANOVA which was finally chosen to find out whether the groups formed by the brand type (AB vs non-AB) grouping factor were statistically different from each other in terms of the product attitude and willingness to purchase. Brand type was coded by introducing the dummy variable ("BRAND" variable, AB=1, non-AB=0). Both dependent variables were tested separately using univariate ANOVA. The procedure was performed in IBM SPSS Statistic Suite and the output is enclosed in the Appendix 10.

Supporting H1, participants evaluated options branded with AB more favorably than those branded with non-AB (Mean squared = 10.017, $F(100) = 6.671$, $p < .011$) and showed higher purchase intentions (Mean squared = 8.364, $F(100) = 5.067$, $p < .027$).

The results of the manipulation lead to a conclusion that using Alphanumeric Brand names for branding cell services offers boost consumers evaluation of the product which are important dimensions for a service provider because they are closely linked to the overall image of the offer and the brand as well as with the actual purchase intentions resulting in sales.

Study 2. ABs and non-ABs in the missing information condition

The purpose of study 2 was to test hypothesis by examining the role of missing information in influencing consumers' evaluations of service plan options and strength of purchase intentions.

Study 1 examined the consumers' reaction to ABs under the conditions of full information about the product attributes specifications and the well-known brand. However, literature proposes that missing information about the product specifications leads to increasing uncertainty of choice and change of the perception of the offer by the customer [Gunasti, Ross, 2010]. The market review showed that some companies use the strategy of elimination of the factual information from the promotional materials (Beeline) and replacing the numbers by more emotional statements that do not clearly specify the product attribute and thus create the effect of missing information. That's why study 2 went further and included missing information condition as well as the brand type condition.

Also the first experiment included the condition of known brand layout design – to avoid possible halo-effect [Gunasti, Ozcan, 2015] of the provider's brand the second experiment excluded that fact. The table of specifications was changed in a way that both the design and the brand name were not connected with the current market players (avoid corporate colors, etc).

This study also tests the second stated hypothesis about fluency, thus the questionnaire contain questions about the easiness of evaluation of the option.

H2: Use of ABs in service plans options' branding lead consumers to make their judgment about the product easier (evaluate them with less effort) than use of non-ABs

H3: Use of ABs in service plans options' branding lead consumers to evaluate the options more favorably (e.g., as a better product) and show stronger purchase intention (e.g., being more willing to buy the product) than use of non-ABs both under the full and missing information conditions

H4: Under the condition of the ABs use in service plans options' branding missing information in product description leads consumers to evaluate the options more favorably (e.g., as a better product) and show stronger purchase intention (e.g., being more willing to buy the product) than full information in product description

One hundred respondents participated in a between-subjects experiment. 25 participants were assigned to each scenario in a random way, so that the groups were identical in number of respondents. The sample consisted of students (18-25 years old), with 35% of the respondents being men and 65% being women. All respondents were exposed to brand name and table of specifications of a mobile communication tariff plan options branded either with AB or non-AB, and supplemented either with full information about the product attribute or information that was replaced by neutral statements that didn't give specific product details and rather served as a description of the cell services all in all, depending on the condition assigned randomly to each participant.

All four offers were identical, except of the manipulation variables. Similar to the first study conditions participants were given time to review the specifications of the tariff plans on the following product attributes: minutes of outgoing calls available, amount of Internet traffic, number of SMS/MMS available and price.

Next, participants were asked a range of questions to indicate their evaluation for product (the product is good, I like the product, the product is likely to meet my expectations; $\alpha = ,883$), the purchase intentions (I will buy the product, my willingness to purchase the product is high; $\alpha = ,903$), the fluency of evaluation: perceived easiness of decision-making (It was easy to evaluate the product, options' names helped evaluate the product, it will be easy to compare the offer to other options in the

market, $\alpha = ,761$) and number literacy (I do mental calculations easily, I remember numbers easily, I connect numbers I see with associations, $\alpha = ,835$). 7-point Likert scale was used for each question with the higher point corresponding to the better product attitude (ATT) evaluation and stronger willingness to purchase (WTP).

As the manipulation is based on the missing information and increased uncertainty in the offer, a manipulation check was performed as a pre-test to make sure that the materials that are used for the experiment really reflect the idea of the theoretical background and the messages (tables of specifications) with missing information correspond to the higher level of the uncertainty in the offer. The data was collected the same way as for the test itself – the respondents were asked to indicate their perception on the uncertainty of the offer on a 7-point Likert scale (There was low uncertainty in the offer). Each group consisted of 50 respondents. Independent sample t-test was conducted in SPSS (the output can be found in Appendix) to compare the means of the groups' sample. The results showed there is a significant difference in group sample means ($t=5,225$, $sig = ,000$), the group presented by the specifications with missing information accounted for higher uncertainty (2,48+-1,71) while the group presented with specifications with full information stated lower uncertainty level (4,48+-2,41). Analysis confirmed the assumption that missing information specifications accounted for the higher level of uncertainty.

Number literacy (NL) and market knowledge were used as control variables to check the homogeneity of the sample on these dimensions. ANOVA was performed on both measures to test the between-subject effect of the variables on the product groups. The analysis showed that the means were not significantly different across the groups (SPSS Output is presented in Appendix 11). The groups were homogenous in terms of these factors, which means they didn't interfere in the manipulation.

The data collected didn't contain significant outliers and met all the assumptions for ANOVA. Data was divided into four groups formed by the brand type (AB vs non-AB) and information (full vs missing) grouping factors as the study has a 2*2 research design presented in the table below.

Table 3 Study 2 experimental design

	AB (1)	non-AB (0)
Full information (1)	WTP1/ATT1	WTP2/ATT2
Missing information (0)	WTP3/ATT3	WTP4/ATT4

Brand type was coded by introducing the dummy variable ("BRAND" variable, AB=1, non-AB=0) information was coded by introducing the dummy variable as well ("INFO" variable, full=1, missing=0). Both dependent variables ("WTP" and "ATT") were tested separately using univariate ANOVA. The procedure was performed in IBM SPSS Statistic Suite and the output is enclosed in the

Appendix. The following tables show the descriptive statistics on dependent variables of the sample under examination.

Table 4 Sample summary for WTP dependent variable

Descriptive Statistics

Dependent Variable: WTP

BRAND	INFO	Mean	Std. Deviation	N
0	0	3,1200	1,79861	25
	1	2,3200	1,43527	25
	Total	2,7200	1,66034	50
1	0	4,8400	1,27246	25
	1	3,0000	1,62019	25
	Total	3,9200	1,71536	50
Total	0	3,9800	1,76981	50
	1	2,6600	1,55327	50
	Total	3,3200	1,78450	100

Table 5 Sample summary for Product Attitude dependent variable

Descriptive Statistics

Dependent Variable: ATT

BRAND	INFO	Mean	Std. Deviation	N
0	0	3,5864	1,43051	25
	1	2,6012	1,39755	25
	Total	3,0938	1,48544	50
1	0	4,7204	1,23830	25
	1	3,1468	1,43745	25
	Total	3,9336	1,54751	50
Total	0	4,1534	1,44270	50
	1	2,8740	1,42990	50
	Total	3,5137	1,56701	100

Supporting H3, participants evaluated options branded with AB more favorably than those branded with non-AB (Mean = 4,72 vs Mean = 3,59, $F(100) = 21.54$, $p < .00$) and showed higher purchase intentions (Mean = 4,84 vs Mean = 3,12, $F(100) = 18.27$ $p < .00$) under the missing information condition.

Supporting H4, participants evaluated options branded with AB more favorably under the missing information condition rather than under the full information condition (Mean = 4,72 vs Mean = 3,14, $p < .03$) and showed higher purchase intentions (Mean = 4,84 vs Mean = 3,00, $p < .00$).

H2 wasn't supported by the results of ANOVA – it didn't show any significant difference in means in a 2*2 condition (p -value=0,543). However, when the analysis was performed using only one condition (AB vs non-AB) the results showed the AB branded options generally outperformed non-AB branded options at the 5% significance level (Mean Square=14,91, $F=6.162$, $sig=0,015$).

Tests of Between-Subjects Effects

Dependent Variable: EAS

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	14,915 ^a	1	14,915	6,162	,015
Intercept	1301,189	1	1301,189	537,574	,000
BRAND	14,915	1	14,915	6,162	,015
Error	237,208	98	2,420		
Total	1553,312	100			
Corrected Total	252,123	99			

a. R Squared = ,059 (Adjusted R Squared = ,050)

Image 5 ANOVA for Fluency variable

These conclusions give very important implications about the branding. Branding of the product is not only about the brand name but also about the supplementary information and for managers it is vital to know what to use in the promotional materials to get the better consumer reaction towards the product. The results of the study might be used as guidelines for creating a branding strategy that will appeal to clients using their own behavior patterns.

Study 3. Missing information and consumer inference-making in an ABs condition

The purpose of study 3 was to test hypothesis by examining the consumer inference making process under the missing information condition.

Study 3 examined the consumers’ reaction to ABs under the conditions of missing information about the product attributes. Literature proposes that price may be the attribute defining the product [redden, Hoch, 2011] and systematic investigation of the existing mobile tariff options shows that price-related approach is currently one of the most-used one when it comes to ABs in mobile tariff communication plans: all the branding of one of the market leaders is dedicated to this idea (Beeline) and these price-containing options account for almost 30% of all the brand names in the field (almost half of the ABs).

H5: Under the missing information condition consumers are more likely to associate the numeric part of the service plan AB with the price, rather than with the other product attribute

Fifty respondents participated in a between-subjects experiment. The sample consisted of students (18-25 years old), almost equally split between the genders. All respondents were exposed to brand name and table of specifications of a mobile communication tariff plan options branded with AB or non-AB, where all factual information was replaced by neutral statements that didn’t give specific product details and rather served as a description of the cell services all in all, depending on the

condition assigned randomly to each participant. The layout of the offers and the statements were identical to those used in study 2.

Similar to the previous studies conditions participants were given time to review the offer and then were asked to provide their guess about the attribute levels of the tariff plans on the following product attributes: minutes of outgoing calls available, amount of Internet traffic, number of SMS/MMS available and price.

The results were analyzed in two modes: first the means of each of the product attributes were compared using ANOVA and then frequency analysis was performed to see whether respondents connected the numeric part with price or other attribute (only for AB condition).

The first analysis showed no significant difference in group means which indicates that actually in missing information condition the brand name did not affect product attribute evaluation but rather the consumer perception of it. ABs did not lead consumers to overestimate the product specifications, which means they did not increase the possibility of the disappointment if the specifications did not match the real values.

The frequency analysis results showed that most of the consumers (around 60%) had no doubt in connecting the number in the offers name with the price (the results are presented on the diagram below). The results also showed that in other product attribute categories consumers also showed patterns towards inference-making connecting the numeric part of the AB with the number of minutes or SMS (although, Internet traffic stood out as none had a guess about its' amount that coincided with the number in the brand name). However, the % of respondents that predicted the price to be exactly the same as the number in the brand name was significantly lower, while other options dominated this pattern.

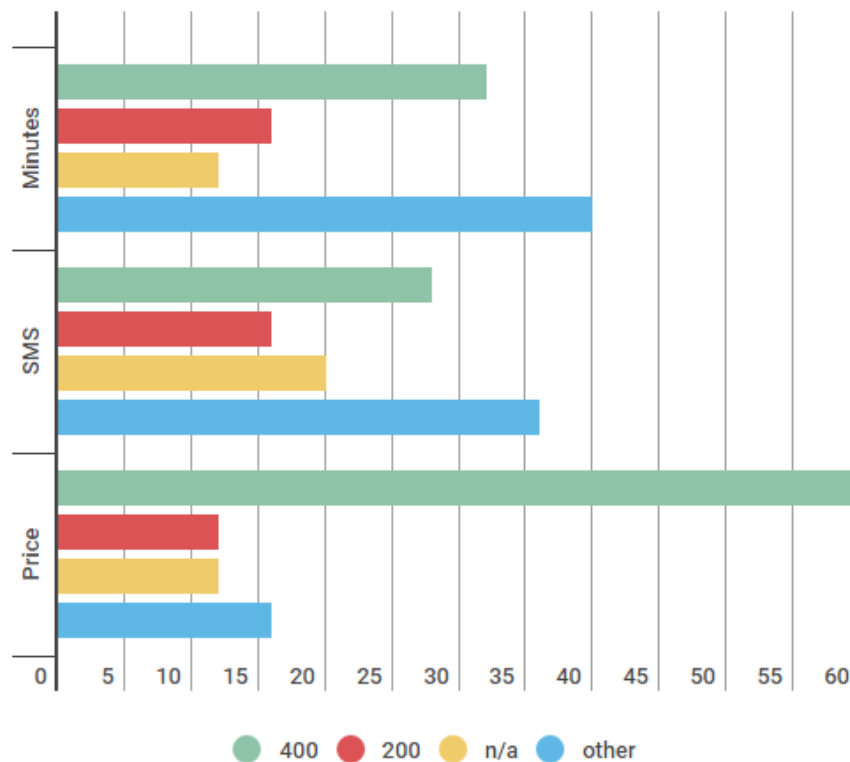


Image 6 Values retrieved for price, minutes, SMS (% of respondents)

The frequencies received for the price were further tested using chi-square statistics. The null hypothesis used in the test assumed that the respondents mentioned option which coincided with the numeric part of the AB as frequent as the other options. The final sample for the test included 26 cases (assuming 13 respondents indicated “400” option and 13 respondents opted for other number) with actual data showing 60% of the respondents having made the inference and indicating “400” as the price of the tariff plan. The null hypothesis was rejected ($\chi^2=27,83$, $p\text{-value}=0.00$) which showed that all in all more than the half of all the consumers made inference.

To check this hypothesis from the other side free association task was performed as well by 30 students of Master program (aged 21-25, GSOM SPbSU). The participants were given general information about the product (mobile communication tariff plans) and further presented with a product line of four tariff options labeled with alphanumeric brand names that used three different orders of magnitude of numbers in the numeric part (one-digit, two-digit and three-digit numbers). They were asked whether the number in the brand name seemed to have some meaning to them and what associations they have with the numeric part of the tariff option name. All the results were recorded – the frequency of each option was calculated and visualized on the graph.

All the brand names contained round numbers (or one-digit numbers) and the verbal part was derived from the real brand names existing in the market in order to exclude the possible effects of different perception of brand completeness and perceived options familiarity level [Gunasti, Ozcan, 2016] and increase internal validity. All the materials used in this task are enclosed in Appendixes.

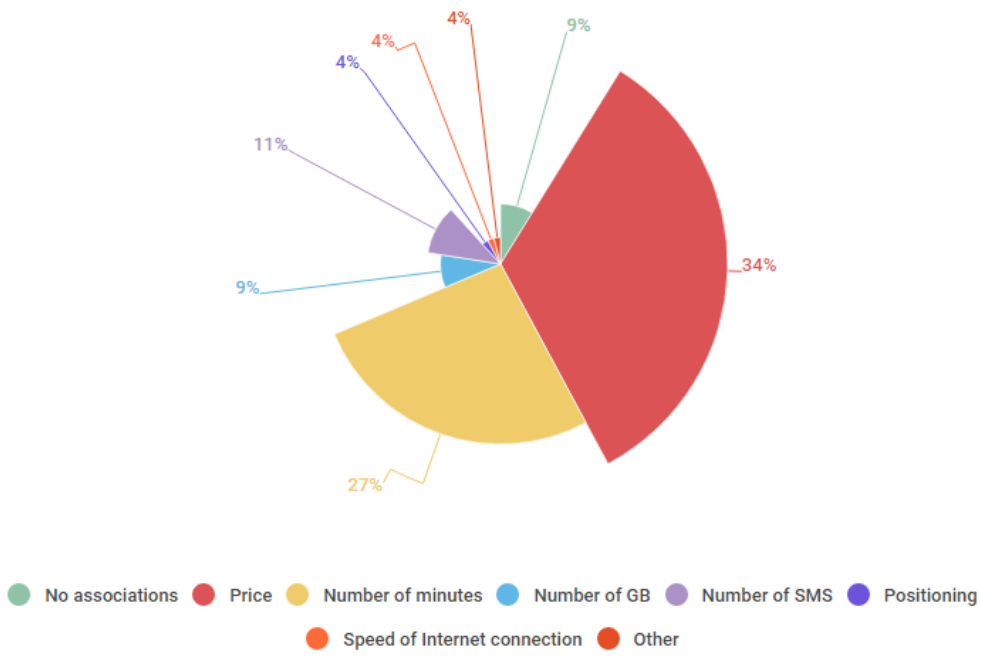


Image 7 Associations for the numeric part with three-digit number

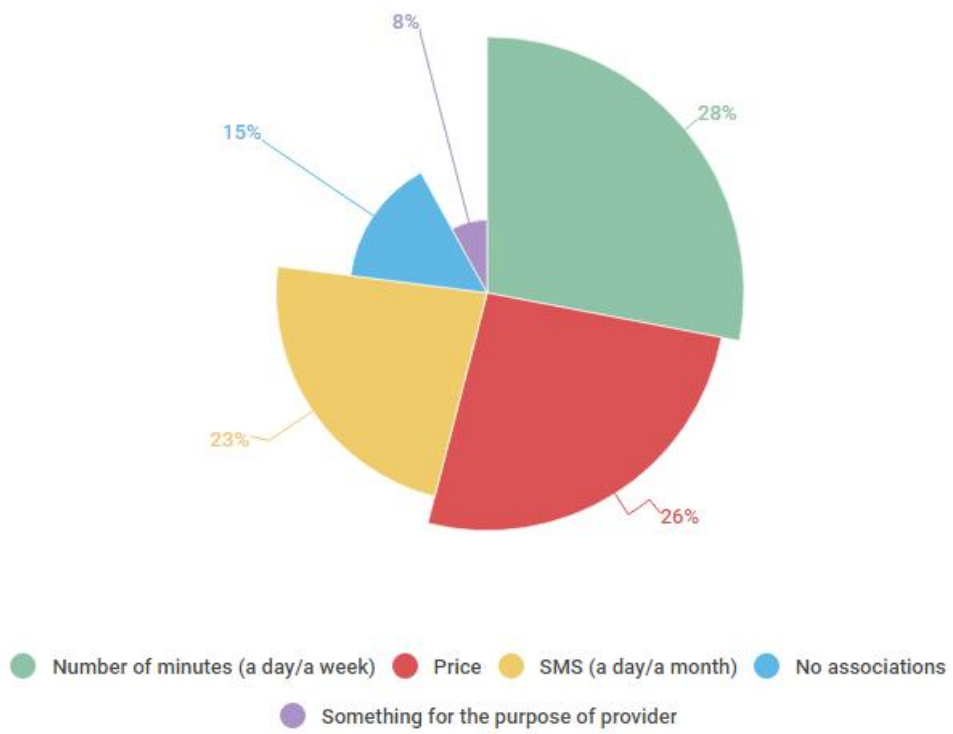


Image 8 Associations for the numeric part with two-digit number

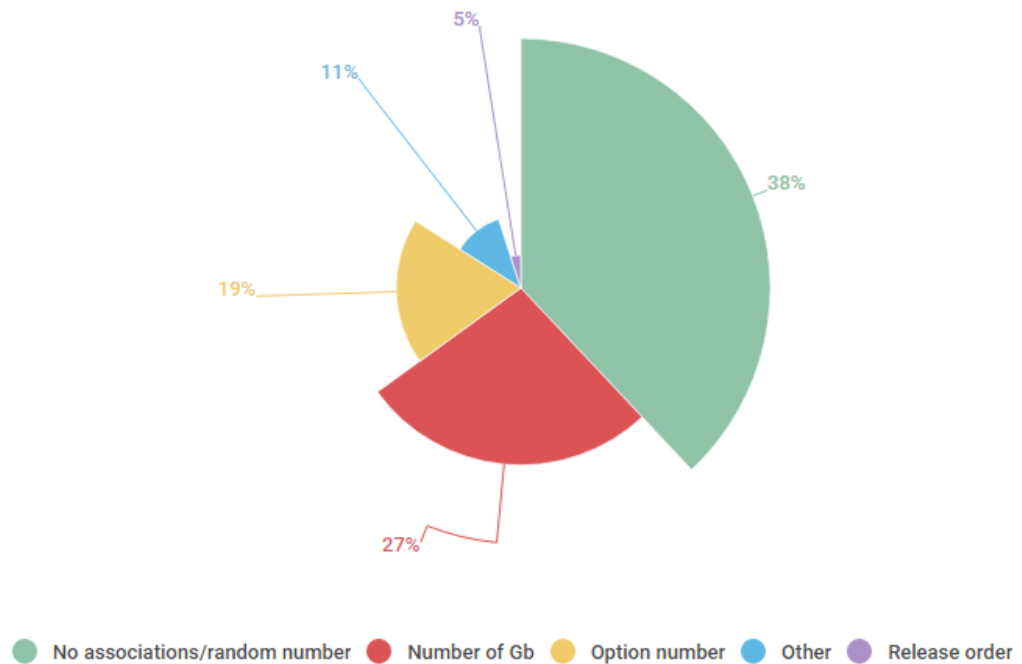


Image 9 Associations for the numeric part with one-digit number

The statistics shows that price is the most preferred association that comes to people when they see a three-digit number and the second most-preferred option when the two-digit number is involved in analysis, which points out that price is the association that most commonly comes to clients minds and with which the customers feel comfortable. Additional investigation showed that 70% of the customers feel that price is the most important product attribute when it comes to the choice of the most appropriate tariff plan option.

There is one more important finding: surprisingly, number of people that couldn't draw any associations from the numeric part or thought it was something insignificant and didn't pay attention to it increased dramatically from 9% to 15% when the magnitude was decreased by one-digit and went up to 38% when the number in the numeric part was a one-digit one. Although Internet traffic was the second most important aspect for option choice one-digit number that could be possibly associated with its amount didn't draw any of the associations among the consumers.

To further investigate these effects and the reasons behind them 5 in-depth follow-up interviews were conducted with random respondents from the initial sample. They were asked open questions of how they felt about the task and what did they think about the associations, whether it was easy or difficult to draw them or not. The main finding of the interviews was that there was much in common in how the process went for most people – they easily got associations when presented with AB containing three-digit numeric part they almost immediately got the feeling that it has some meaning.

One of the participants summarized:

“The numerical part of this magnitude is immediately associated with something complicated. For some reason, you involuntarily try to memorize the numbers. There is an idea that the higher the number, the steeper the rate/ includes more sms, mms/ the Internet/ is more profitable and advanced. And generally all these features ascend as the price increases, so an assumption that these numbers might be the price seems very logical”

Two-digit numbers involved the same kind of logic – people generally just made additional assumptions that as the number is smaller it should be connected with the shorter time period (ex. week, day).

One-digit numbers, however, caused confusion and were not perceived well as most of the people couldn't draw associations with the product attribute easily and the missing numbers in the options' numeration seemed to be misleading and irrational (while with the other magnitudes tested this effect didn't occur). Additionally they noticed that when the number was random and they couldn't connect it somehow with the product it caused irritation and that's why they preferred deciding it as being unimportant and not worth taking into consideration.

One of the interviewed consumers commented this condition:

“Here I can't put any sense into numbers, so I would like to read the tariff plan terms and conditions very much. The numbers with omissions (1, 3, 8, 14), unlike the usual 1, 2, 3, are confusing.”

Several people also admitted that under this circumstance they felt they need to look at the option detailed description to form an attitude towards it, while within the three-digit number circumstance they had an intuitive feeling about each tariff plan just after looking, which might serve as a support to the assumption that price-related magnitude of the number in the numeric part of AB is the one that boosts decision-making and forms a heuristic.

Additionally, systematic investigation of the existing mobile tariff options shows that price-related approach is currently one of the most-used one when it comes to ABs in mobile tariff communication plans: all the branding of one of the market leaders is dedicated to this idea (Beeline) and these price-containing options account for almost 30% of all the brand names in the field (almost half of the ABs).

DISCUSSION AND MANAGERIAL IMPLICATIONS

The results obtained generally support all the hypotheses stated in the research paper, contributing to the understanding of service plan branding as well as concrete use of ABs for this purpose. The study relies on the primary data representing consumers' opinion which means it can be trusted with some limitations that should be heard in mind.

The results of the research conducted have a practical value for business.

The experiments clearly showed that branding is a tool that can help service plan providers boost consumers' attitude towards the product and contribute to their willingness to buy the product.

Right choice of branding is a managerial dilemma which is even more complicated for the service plans' providers as the nature of service plans assume they exist in a form of a product line with multiple tariff options per one provider. Multiple options which hold multiple combinations of services inside one plan might confuse the consumers and make the choice more difficult as the models of consumer choice suggested in the literature such as calculation of a real price for consumption unit or even pair wise comparison of all the attributes of the offers presented are complicated and include a lot of logic behind the process. Making the choice easier (increasing the fluency of choice) and changing the decision making from rational thorough comparison to a process involving shortcuts (heuristics) might be a desirable option for service providers.

Previous research showed that alphanumeric brand names are associated with sophisticated product (technical or complex) and studied many different decision-making shortcuts – this body of research is applicable to developing a branding strategy. The results of the study above indicates that alphanumeric brand names are appropriate choice for branding service plans and if applied help the provider to form a more favorable attitude towards the product and push their willingness to choose the offer. As a consequence this implies that the managers have a wider perspective of the consumer behavior and the patterns that may be used by their clients. Better understanding of consumers typically contribute a lot to the business in general which means the research holds practical value for a wide range service plan providers (such as Internet providers, insurance packages providers, transportation providers, post-purchase service providers).

Moreover, the study suggests a few ready benchmark solutions for branding. It goes beyond the brand name and covers the topic of the supporting information about the offer (such as product description and specifications, information about the product attribute). By investigating the role of the missing information in forming consumer preferences the study suggests that combination of the ABs with missing information might be a more desirable option for a provider if it wants to increase consumers' willingness to purchase and form a more positive attitude towards the service plan option. As it can be seen from the real market example (cell services study discussed in the study previously) some of the companies already follow this strategy (Beeline uses ABs and typically replace the factual

information about the product attributes with neutral information messages creating the effect of missing information in their promotion campaigns). The research confirms that such a strategy has a ground in consumer behavior and generalizes it so that the other companies might follow and adapt their branding accordingly creating a unique but yet effective campaigns taking into consideration the underlying effect of the manipulation investigated.

The fluency issue leaves a field for further study, as the research clearly showed it has some role in forming consumer preference (as it influences the perception of the evaluation process), however, the relationship with missing information condition might be more complex and thus not creating any difference between groups in a direct manner.

Additionally, an important implication for practitioners comes from the third part of the research (study 3 section) where the inference-making process is investigated. Inference-making is an important issue connected with ABs implementation into branding a real-life product. It is very important to understand which inferences a customer makes from the information presented. If the corporate decision-maker relies on the product description with missing information about the product attribute and the client at the same time faces a number in the brand name of the offer suggested to him it is highly possible that people will try to connect the number with a missing attribute. As there are plenty of them it is hard to predict with which of them they will draw connections, and the wrong inference might spoil the consumer's perception of the product as all of the attributes have different magnitude and importance it is extremely hard to decide which number to use in the numeric part of the alphanumeric brand name.

The research conducted gives a clue of both what the customers expect to see in the numeric part of the AB (through free associations task) and what inferences they draw from the numeric part when all the information on the product attributes is missing. The main conclusion is that the price is the attribute that is linked to the numeric part of the AB by the majority of the consumers, while the number magnitude that does not allow to do so causes confusion and is not perceived well. This implication is greatly applicable to service plan branding as the provider defines the price and sells the service directly without the intermediaries (unlike with the products like digital cameras or cars that are also branded with ABs quiet often) and at the same time many consumers still rate price the highest priority for them and assume that it defines other attributes to the great extent.

Although an important trend should be mentioned as a limitation of the research conducted which might turn the conclusion reached into a temporary one. As can be seen from the study consumers draw inferences with what seems logically the defining attribute of the product to them, however, service plans are different (even though they have many common features) and the defining attribute may differ accordingly to the product category (for example for insurance plans, traffic plans, etc). That's why when applying this finding it is important that the provider think carefully about what

is the most attribute for the customer in his product area. Also the defining attribute might change over time. The comments received with the responses to the question about the importance of the attributes mentioned imply that Internet traffic is getting increasingly more important to clients when they choose cell services. Over the years market dynamics can drive the market to the point when consumers will perceive the option with the number of the one or two-digit magnitude (corresponding to the possible amount of the Internet traffic) more favorably than with price-related magnitude. An obstacle for this at the very moment is also a default unit effect [Lembregts, Pandelaerne, 2013] – the attribute that has a default unit of measurement has much more chances to be used for inference-making and will be understood by consumers in the same way. The default units for the Internet traffic are not clearly defined yet (Mb or Gb or other units), and that might prevent consumers from creating a truly strong link with the attribute. This is a potential area of future research.

The limitations of the research also include the sample design. The sample summary statistics shows clearly that it covers only one age group (under 26 years old). On the one hand this age group coincides with the segment of the most active and progressive cell services users, however, the patterns of behavior found can be not fully applicable to other age group due to the different level of number literacy, different preferences etc. That should be taken into consideration as well as the fact that although cell services are typical examples of service plans other product categories may differ from it and imply additional consumer patterns that should be also taken into account. While overall comparative effectiveness of ABs choice for branding in terms of product attitude and willingness to purchase the product seems to be applicable fully to all service plans' categories the conclusions about inferences should be used for other product categories with caution.

Overall the research provides both theoretical implications into consumer behavior patterns concerning service plans and their branding and practical implications as the conclusion may be used as guidelines for branding real offers.

CONCLUSION

This research paper was dedicated to the use of alphanumeric brand names (ABs) for branding service plans. . The initial issue that marked the importance of studying service plans' branding raises from the problem of multiple service plan options with unique mix of the product attributes staying the same across all the product line and lack of sufficient research base about branding service plans (while the study focus of the literature is procing). From the other side ABs are claimed to be appropriate for sophisticated products with many attributes (technical, complex) and are well-studied in terms of some patterns of consumer behavior (default units effect, the bigger the better, etc), also missing so.e impotant effects (such as fluency and missing information).

The assumption is made that ABs and service plans fits together and become the key issue of the work. Further literature study reveals research gap concerning use if ABs in the missing information condition, mentioned in some works as a potential area for study [Gunasti, Ross, 2010], but do not check it properly on a specific example as well as the topic of inference-making happens not to cover specific product and industry-related issues (research mentions cosumer inference making with ABs [Gunasti, Ross, 2010], [Pavia, Costa , 1993] etc

The conclusion of the study is that all the research hypothesis stated were justified.

First of all, alphanumeric brand names proved to be an appropriate branding option for service plans in general showing higher effectiveness in terms of forming a more positive attitude towards the product and boosting consumers' willingness to purchase the offer. Consumers evaluated the options branded with ABs more favorably both in the full and missing information conditions. This means that all else being equal use of ABs in the branding strategy applied to service plans can shift the consumers' perception of the product towards a more positive one and gives more freedom to the service plan providers as well as potentially boost the sales volume as it is directly dependent on the willingness to purchase dimension. As the stimuli used in the experiments are close to the real-life promotional materials change to the use of AB is not hard and provides advantages for the providers.

Secondly, as proposed applying missing information condition amplify this effect even more as the numeric part of the brand name serves as an anchor for inference-making, which helps consumer to fill in the missing data with his own expectations that are close to his own demands. As missing information about the product attributes increases uncertainty of choice the customer start filling unsure about the product that's why the anchoring role of the numeric part plays very important role for the estimation of the product attributes that consumers' make in their mind giving them ground for inference-making.

Thirdly, the conclusion from the last part of the research is that consumers not only use the shortcuts when they go through a decision-making process associated with ABs but also make

inferences about product attributes based on the information they retrieve from the brand name (especially from the numeric part of the AB).

When consumers face missing information they use the existing one to make predictions. As the study suggests those predictions in general do not vary across the groups which leads to a conclusion that those predictions themselves do not influence consumer evaluation but rather their perception of these product attributes retrieved. That's why the risk of the disappointment of the consumer in case the product does not match their expectations associated with the use of the missing information is not increased with the use of AB that holds a clue for making this predictions in the brand name itself, on the contrary, if the consumer understands the link between the numeric part and the product this resolves the confusion he might have about the offer and increase his confidence.

Other important conclusion is that consumers tend to associate the numeric part of the brand name with the price and as the study showed perceive the use of price in the brand name logical and can both easily assume that the number represents the price and the other way round retrieve the price from the brand name when not presented by the information about it but rather only with the offers brand name and vague description (missing information condition).

To sum up, the branding strategy associated with the use of the alpha numeric brand names can be further clarified and narrowed down. The main findings are that ABs can be used as an effective branding option for service plans especially in case that:

- The AB is supported by the product description that is based on the missing information about the exact product specifications
- The numeric part of the AB uses the number associated with a three-digit magnitude associated with price as this causes less confusion and decreases the uncertainty of the decision-making process to an acceptable level
- The AB uses price as the numeric part across all the product line

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APENDIX 1. Summary of market options used in cell services on the Russian market

Mobile operator	Current options			Previously used		
	ABs options	Non-ABs options	Product lines	ABs options	Non-ABs options	Product lines
MTS	MTS Connect-4	Guest, Per-second, Super MTS, Smart, Smart mini, Smart Nonstop, Smart Withoutlimits, Smart+, Smart Top, ULTRA	Smart, Super, ULTRA	Super zero, Super First, MTS Connect-2, MTS Connect-3, Profi 500 VIP, Profi 50, Traveller 300, Mobile.ZERO, Business 400, Business 600, Maxi Plus "All you need 890", Jeans 007	Maxi Active, Maxi Super, Maxi Ultra, Business without borders, Business-universal, Jeans Classic, We, Optima Day, Optima+, Optima Universal, etc	Maxi, Maxi plus, Maxi ULTRA, RED, Smart, ULTRA, VIP, Business, Mobile, Profi, Super, Optima
Beeline	Co-munication 2Gb, Co-munication 5 Gb, All for 300, All for 500, All for 800, All for 1000, All for 1200, All for 1500, All for 1800 All in one for 301, All in one for 501, All in one for 801, All in one for 1201, Zero doubts	Second, Welcome everybody, Internet forever, WELCOME (for tourists), #Allallowed, Really All	All (mobile services only), All in one (mobile+home Internet+TV), Co-munication			
Megafon	Switch to zero, All inclusive XS, All inclusive S, All inclusive M, All inclusive L, All inclusive VIP	Warm welcome, All is simple, Megafon -online,	All inclusive			
Tele2		Black, Very Black, The most Black, Super Black, Unlimitedly Black, Orange, Internet for devices	Black			

APENDIX 2. Study 2 questionnaire

Please read the instructions and study the presented materials carefully.

If you have any questions or are interested in obtaining the results of the study, please contact me via e-mail shibanovaxenia@gmail.com

Please, select any number to proceed

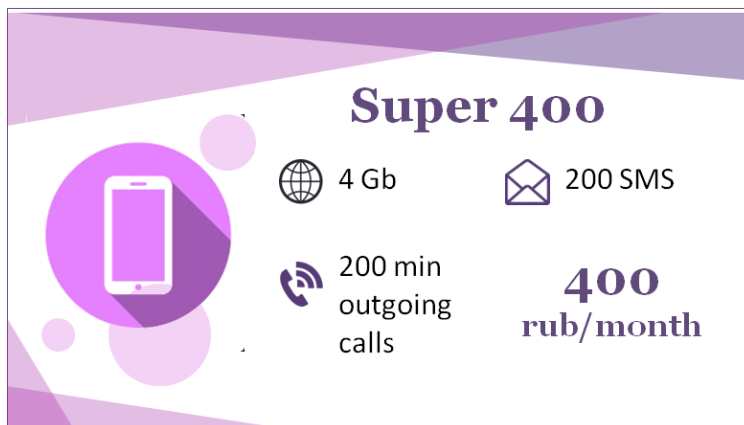
- 1
- 2
- 3
- 4

Section 1

Imagine, you are interested in acquiring a new cell service tariff and you have no budget constraints. You come across this offer from a reputable Russian brand. The tariff offers fixed amount of outgoing calls (in minutes), SMS/MMS and Internet traffic.

Please, spend some time to familiarize with the offer and answer the following questions based on this information.

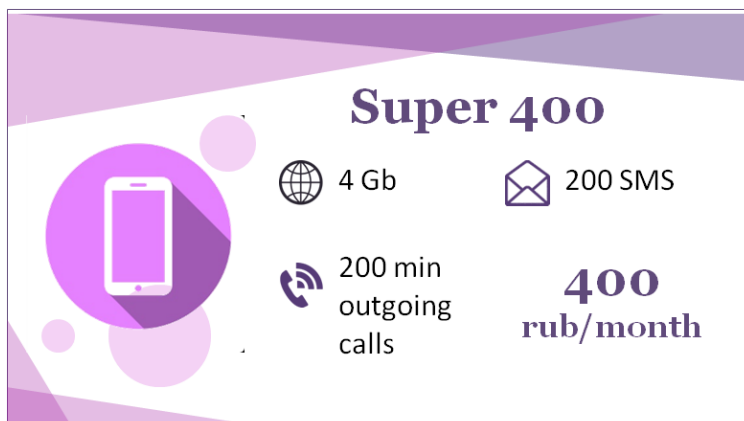
1. (*Respondents, who chose 1 in the previous question, are directed here)



The infographic displays the 'Super 400' tariff plan. It features a smartphone icon on the left. The plan includes 4 Gb of data (represented by a globe icon), 200 SMS (represented by an envelope icon), and 200 minutes of outgoing calls (represented by a phone handset icon). The price is listed as 400 rub/month.

Feature	Value
Data	4 Gb
SMS	200 SMS
Outgoing calls	200 min
Price	400 rub/month

2.



This infographic is identical to the one above, showing the 'Super 400' tariff plan with 4 Gb of data, 200 SMS, 200 minutes of outgoing calls, and a price of 400 rub/month.

Feature	Value
Data	4 Gb
SMS	200 SMS
Outgoing calls	200 min
Price	400 rub/month

3.

Super Plus

4 Gb

200 min outgoing calls

200 SMS

400 rub/month

4.

Super Plus

Better connection

More calls to relatives and friends

Perfect SMS/MMS services

400 rub/month

Section 2

Please, answer these questions by circling the appropriate number on the scale

1. How likely will you choose to buy the offer presented?

Very unlikely

1 2 3 4 5 6 7

Very likely

My willingness to purchase is low

1 2 3 4 5 6 7

My willingness to purchase is high

2.

This product is not good

1 2 3 4 5 6 7

This product is good

I don't like this product

1 2 3 4 5 6 7

I like the product

The product wouldn't be satisfactory

1 2 3 4 5 6 7

The product would be satisfactory

3. Was it easy to evaluate the offer?

It was easy to evaluate the offer

1 2 3 4 5

It was difficult to evaluate the offer

6 7

Options names helped evaluate the product

1 2 3 4 5

Options names didn't help evaluate the

6 7

There was high uncertainty in the offer

1 2 3 4 5

There was low uncertainty in the offer

6 7

4.

Price was high

1 2 3 4 5

Price was low

6 7

6.

I do mental calculations with effort

1 2 3 4 5 6 7

I do mental calculations easily

I am not good at remembering numbers

1 2 3 4 5 6 7

I am good at remembering numbers

I don't connect numbers I see with associations

1 2 3 4 5 6 7

I connect numbers I see with associations

7.

I know very little about cell services

1 2 3 4 5 6 7

I know a lot about cell services

APENDIX 3. Study 1 questionnaire

Section 1

Please, carefully study all instructions and graphic materials.

If you are interested in the results or you want to leave feedback, you can contact me at the address indicated at the end of the survey.

Section 2

In this section you will be asked to study the mobile operator's offer and answer some simple questions regarding it.

All presented tariffs are batch, that is, they include a certain number of minutes of outgoing calls, SMS / MMS, as well as fixed Internet traffic.

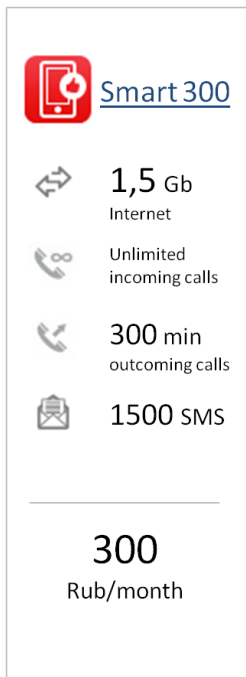
Please select any number to start

- 1
- 2

Section 3. Information materials

Here is the description of r tariff option that from a well-known Russian provider. Please study it carefully.

1. *Respondents who chose 1 in the previous question are directed here

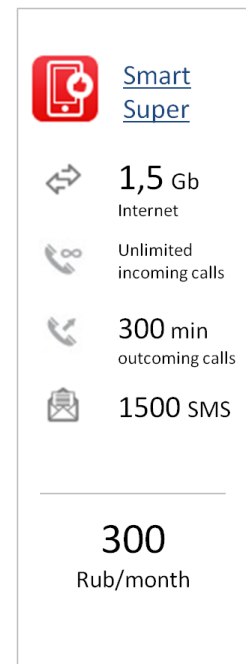


Smart 300

- 1,5 Gb Internet
- Unlimited incoming calls
- 300 min outgoing calls
- 1500 SMS

300
Rub/month

or



Smart Super

- 1,5 Gb Internet
- Unlimited incoming calls
- 300 min outgoing calls
- 1500 SMS

300
Rub/month

2.

Section 4. Product Attitude

Please indicate your attitude about the product on the scales below

This product is not good

1 2 3 4 5

I don't like this product

1 2 3 4 5

The product wouldn't be satisfactory

1 2 3 4 5

This product is good

6 7

I like the product

6 7

The product would be satisfactory

6 7

Section 6. Purchase Intention

Please indicate your purchase intentions on the scales below

I wouldn't buy this product

1 2 3 4 5

I'd buy this product

6 7

My willingness to purchase the product is low

1 2 3 4 5

My willingness to purchase the product is

high

6 7

Section 7. Easiness of choice

Please indicate the easiness of choice between this option and other in the market among the options on the scale below

It will be hard to compare this option to other

1 2 3 4 5

It will be easy to compare this option to other

6 7

Option name helps to compare it to other

1 2 3 4 5 6

Option name doesn't help to compare it to other

7

APPENDIX 4. Study 3 questions

Please read the instructions and study the presented materials carefully.

If you have any questions or are interested in obtaining the results of the study, please contact me via e-mail shibanovaxenia@gmail.com

Imagine, you are interested in acquiring a new cell service tariff and you have no budget constraints. You come across this offer from a reputable Russian brand. The tariff offers fixed amount of outgoing calls (in minutes), SMS/MMS and Internet traffic.

Please, spend some time to familiarize with the offer and answer the following questions based on this information.

Information about the offer

1.



2.



1. Please, make a guess about the amount of outgoing calls, SMS/MMS, Internet traffic available monthly with this cell service tariff and its price

Minutes of outgoing calls

Number of SMS/MMS

Amount of Internet traffic (in Gb)

Price (monthly payment)

APPENDIX 5. Reliability analysis for Study 1

Reliability Statistics

Cronbach's Alpha	N of Items
,903	2

Image 10 Reliability analysis for WTP questions

Reliability Statistics

Cronbach's Alpha	N of Items
,883	3

Image 11 Reliability analysis for ATT questions

APPENDIX 6. SPSS output – ANOVA for Study 1

Descriptive Statistics

Dependent Variable: WTP

BRAND	Mean	Std. Deviation	N
0	3,73	1,458	50
1	4,31	1,099	50
Total	4,03	1,310	100

Tests of Between-Subjects Effects

Dependent Variable: WTP

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	8,354 ^a	1	8,354	5,067	,027	,049
Intercept	1612,194	1	1612,194	977,958	,000	,909
BRAND	8,354	1	8,354	5,067	,027	,049
Error	161,556	98	1,649			
Total	1794,000	100				
Corrected Total	169,910	99				

a. R Squared = ,049 (Adjusted R Squared = ,039)

Descriptive Statistics

Dependent Variable: ATT

BRAND	Mean	Std. Deviation	N
0	4,06	1,265	50
1	4,70	1,187	50
Total	4,39	1,260	100

Tests of Between-Subjects Effects

Dependent Variable: ATT

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	10,017 ^a	1	10,017	6,671	,011	,064
Intercept	1916,534	1	1916,534	1276,304	,000	,929
BRAND	10,017	1	10,017	6,671	,011	,064
Error	147,160	98	1,502			
Total	2087,900	100				
Corrected Total	157,176	99				

a. R Squared = ,064 (Adjusted R Squared = ,054)

APPENDIX 7. SPSS output – manipulation check Independent T-test for Study 2

Group Statistics

	INFO	N	Mean	Std. Deviation	Std. Error Mean
UNCERT	1	50	4,4800	2,10189	,29725
	0	50	2,4800	1,70521	,24115

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
UNCERT	Equal variances assumed	2,737	,101	5,225	98	,000	2,00000	,38277	1,24040	2,75960
	Equal variances not assumed			5,225	94,005	,000	2,00000	,38277	1,24000	2,76000

APPENDIX 8. Reliability analysis for Study 2

Reliability Statistics

Cronbach's Alpha	N of Items
,951	2

Image 12 Reliability analysis for willingness to purchase (WTP)

Reliability Statistics

Cronbach's Alpha	N of Items
,910	3

Image 13 Reliability analysis for product attitude (ATT)

Reliability Statistics

Cronbach's Alpha	N of Items
,761	3

Image 14 Reliability analysis for easiness of evaluation (EAS)

Reliability Statistics

Cronbach's Alpha	N of Items
,835	3

Image 15 Reliability analysis for numeric literacy (NL)

APPENDIX 9. SPSS output – ANOVA (WTP) for Study 2

Tests of Between-Subjects Effects

Dependent Variable: WTP

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	86,320 ^a	3	28,773	12,065	,000	,274
Intercept	1102,240	1	1102,240	462,196	,000	,828
BRAND	36,000	1	36,000	15,096	,000	,136
INFO	43,560	1	43,560	18,266	,000	,160
BRAND * INFO	26,760	1	26,760	12,035	,046	,109
Error	228,940	96	2,385			
Total	1417,500	100				
Corrected Total	315,260	99				

a. R Squared = ,274 (Adjusted R Squared = ,251)

Pairwise Comparisons

Dependent Variable: WTP

(I) BRAND	(J) BRAND	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
0	1	-1,200 [*]	,309	,000	-1,813	-,587
1	0	1,200 [*]	,309	,000	,587	1,813

Based on estimated marginal means

*. The mean difference is significant at the ,05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Pairwise Comparisons

Dependent Variable: WTP

(I) INFO	(J) INFO	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
0	1	1,320 [*]	,309	,000	,707	1,933
1	0	-1,320 [*]	,309	,000	-1,933	-,707

Based on estimated marginal means

*. The mean difference is significant at the ,05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

3. BRAND * INFO

Dependent Variable: WTP

BRAND	INFO	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
0	0	3,120	,309	2,507	3,733
	1	2,320	,309	1,707	2,933
1	0	4,840	,309	4,227	5,453
	1	3,000	,309	2,387	3,613

APPENDIX 10. SPSS output – ANOVA (ATT) for Study 2

Tests of Between-Subjects Effects

Dependent Variable: ATT

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	60,717 ^a	3	20,239	10,653	,000	,250
Intercept	1234,609	1	1234,609	649,868	,000	,871
BRAND	17,632	1	17,632	9,281	,003	,088
INFO	40,922	1	40,922	21,540	,000	,183
BRAND * INFO	12,164	1	12,164	9,139	,029	,082
Error	182,379	96	1,900			
Total	1477,705	100				
Corrected Total	243,096	99				

a. R Squared = ,250 (Adjusted R Squared = ,226)

Pairwise Comparisons

Dependent Variable: ATT

(I) BRAND	(J) BRAND	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
0	1	-,840 [*]	,276	,003	-1,387	-,293
1	0	,840 [*]	,276	,003	,293	1,387

Based on estimated marginal means

*. The mean difference is significant at the ,05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Pairwise Comparisons

Dependent Variable: ATT

(I) INFO	(J) INFO	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
0	1	1,279 [*]	,276	,000	,732	1,827
1	0	-1,279 [*]	,276	,000	-1,827	-,732

Based on estimated marginal means

*. The mean difference is significant at the ,05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

3. BRAND * INFO

Dependent Variable: ATT

BRAND	INFO	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
0	0	3,586	,276	3,039	4,134
	1	2,601	,276	2,054	3,148
1	0	4,720	,276	4,173	5,268
	1	3,147	,276	2,600	3,694

APPENDIX 11. ANOVA of number literacy and market knowledge variable for Study 2

Tests of Between-Subjects Effects

Dependent Variable: NL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	11,118 ^a	3	3,706	2,799	,054
Intercept	2473,272	1	2473,272	1868,254	,000
BRAND	3,740	1	3,740	2,825	,096
INFO	5,770	1	5,770	4,358	,059
BRAND * INFO	1,608	1	1,608	1,215	,273
Error	127,089	96	1,324		
Total	2611,478	100			
Corrected Total	138,207	99			

a. R Squared = ,080 (Adjusted R Squared = ,052)

Tests of Between-Subjects Effects

Dependent Variable: MK

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2,480 ^a	3	,827	,284	,837
Intercept	1936,000	1	1936,000	664,911	,000
BRAND	,160	1	,160	,055	,815
INFO	1,960	1	1,960	,673	,414
BRAND * INFO	,360	1	,360	,124	,726
Error	279,520	96	2,912		
Total	2218,000	100			
Corrected Total	282,000	99			

a. R Squared = ,009 (Adjusted R Squared = -,022)