

Technical Implementation of Micro-Donations

Henryk J. Seeger and Constantin Militaru

Abstract— Those groups that are rarely involved in charitable donations, such as the young and the less wealthy, can be easier approached through other forms of charity such as voluntarily micro-donations, such as an invoice rounding up. Scientific studies, conducted in Germany and Romania, prove this assumption: in the right circumstances and using the means that do not pose any additional inconvenience, as in case with a micro-transaction-based system, people are more willing to donate.

Right circumstances are implying that a customer does not have to conduct any additional actions to donate, may include, for example, different technical means of donation implementation in the sales process at the point of sale. This approach is widely used by such retailers as H&M or the German Kaufland. Other ways of donation collections either handle the approach in a more modern digital way or in a more classical way – by collecting the spare change, in case a customer agrees to donate. Every donation system is associated with unique advantages and disadvantages for both the customer and the company.

This paper discusses the different implementation strategies from a technical and a financial point of view on the example of DEUTSCHLAND RUNDET AUF (DRA; Germany Rounds UP). The technical implementation is discussed based on the Technology Acceptance Model (TAM).

Keywords— micro-donations, point-of-sale, user experience, technical implementation.

I. MICRO-DONATIONS – FROM GOOD INTENTIONS TO BEHAVIOR

Micro-donations describe the concept of donating minor, monetary amounts. In the course of this work, the implementation of micro-donations by rounding up in the purchase-process of consumer goods is described. The initiative DEUTSCHLAND RUNDET AUF (Germany Rounds Up) offers a system of micro-donations which is implemented in the purchase process at the point-of-sale. It gives customers the option to donate a few cents with every purchase automatically, by donating the amount of cents that are bridging the gap towards the next full-euro amount.

Economic research – as Kirchgässner (1992) points out – is usually based around the assumption that decisions matter and have an impact. This assumption builds on the implicit foundation of a multitude of economic theories that try to explain agents' decision-making process. Based on this foundation, it is usually proposed that individuals behave in a rational way and thus, in a way that benefits the individuals

themselves. A contrast to this are what Kirchgässner (1992) describes as low-cost-decisions. The researcher differentiates between two basic types of those low-cost-decisions:

“(i) decisions where the individual decision is irrelevant for the individual himself/herself and for all other individuals, but the collective decision is relevant for all individuals (Low-Cost Decision Type I) and (ii) decisions where the individual decision is irrelevant for the individual himself/herself, but is highly relevant for other individuals (Low-Cost Decisions Type II).“ (Kirchgässner, 1992, p. 306).

Those decisions do not necessarily follow the assumed rules of decision making in the field of economics. Hidden behind the "veil of insignificance" (Kliemt, 1986, p. 333), they do not seem important enough for people to be considered in a typically selfish way.

Micro-donations make use of this phenomenon: Given the fact that the amount that gets donated is usually irrelevantly small for the individual – an average of less than 50 cents per transaction is described by the initiative – the impact on the individual's well-being of financial status can be neglected.

Thereby, it can be assumed that the decision whether to donate such a small amount of money is not foremost based on an economic decision but rather on other factors. Schreiber et al (2006) argue that one of the core predictors of people's actual beneficial behavior is convenience. While the authors describe this phenomenon based on the example of blood donations, their results seem to be applicable to other areas as well: Whether people's general intention to do good gets put into action or not depends on the efforts involved with the actions.

The more convenient it is to do good, the more likely it is that people with good intentions will be to actually do good. Bridging this gap between an intention and actual behavior is addressed by scientists of different fields (Sheeran & Webb, 2016) as it is relevant not only for personal change but also for a number of areas relevant for the public: "public health, energy conservation, and educational and organizational outcomes" (Sheeran & Webb, 2016, p. 504) are among the aspects where bridging the intention-behavior gap is relevant. Intention thereby describes self-instructions regarding desired outcomes and how to perform the necessary steps to achieve these outcomes. While those intentions actually are strong predictors of actual behavior, there is still a critical gap. Sheeran (2002) deducts, based on a meta-analysis, that the correlation between intention for a behavior and actual behavior is $r = .53$. While this constitutes a strong, stable correlation, it also implies that only around 25% of actual variance in behavior is predicted by the intention – leaving room for the question, why behavior only is so marginally influenced by our intentions?

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A relevant factor in this seems to be moral norms – if the intended behavior is in alignment with moral norms, chances are higher that the intentions get put into action (Godin, Conner & Sheeran, 2005).

II. MODELS EXPLAINING HUMAN BEHAVIOR

Explaining and predicting human behavior is one of the core agendas of social sciences. Different approaches have been proposed within those fields, out of which some will be presented within this chapter.

Fishbein's model is based on the idea that features associated with the adjustment object are evaluated by an individual. His expectation value model has a great recognition in attitude research (Cohen, Fishbein & Ahtola, 1972). The total setting is calculated from the sum of the evaluated object features. Each summand contains two components. The first is the probability that the object has a certain characteristic (cognitive). The second component is the evaluation of this feature (affective) (Towler & Shepherd, 1992). The setting for an object is better the more desirable features the object has.

Sheppard, Hartwick, and Warshaw (1988) cite Fishbein's and Ajzen's Theory of Reasoned Action not only as one of the most intensively studied, but also most effective models for predicting consumer behavior. The authors cite the caveat that the theory — like many others — does not aim to predict the behavior itself, but rather the attitudes associated with it. Despite this limitation, they still conclude that the model is exceptionally good at being able to predict the behavior. Sheppard, Hartwick and Warshaw (1988) also confirmed the strong predictive validity of the model as part of their meta-analyses. In particular, they emphasized that the model can deliver accurate predictions even if it is used outside the framework defined by Fishbein and Ajzen - which was the case in half of the studies examined in the meta-analysis. The breadth of possible fields of application found in this study shows the generalizability of the results. Among the studies were those for the purchase of a car, for the selection of a coffee brand or for viewing a French film (Sheppard et al., 1988).

Ajzen himself (1985) expanded the Theory of Reasoned Action and set up the Theory of Planned Behavior. The factor by which Ajzen extended the original theory is that of behavioral control, which should be the bridge between attitude and behavior. Madden, Ellen, and Ajzen (1992) concluded in

their study on the validity of the two models that this extension actually contributes to increasing the predictive power of the model. They examined a variety of different decision scenarios. Behavioral control is raised in this model by questions, for example, to determine how difficult it would be for individuals to put their attitude into action or how much control they would have over their behavior (Madden et al., 1992).

Rosenberg's model for predicting attitudes towards an object or concept assumes that these settings depend on two central predictors. These pre-diodes are, on the one hand, the perceived usefulness of the object/concept to achieve goals or states estimated by the individual, and, on the other, the importance of these goals or states (Rosenberg, 1956). Rosenberg assumes that individuals have cognitive structures that assess the likelihood of this usefulness. Relevant is thus not primarily the actual utility, but the one perceived by the individual. In the Rosenberg model (1956), the setting object is defined as a product sum. This follows from the perceived utility of the object of attitudes to achieve a particular goal and its value.

The Rosenberg model itself was primarily concerned with social, cultural or political problems. On the basis of Rosenberg's considerations, however, his model also became the basis for models that referred to the attitude toward or acceptance of products and technologies.

Many of these considerations are based on the Technology Acceptance Model (Davis, 1985), which is widely used in practice and science, and which describes the interplay of perceived utility, intended use, and social-cognitive processes. While it has been partially expanded (Venkatesh & Davis, 2000), the model is considered to be trend-setting in this young discipline, which is derived from sub-disciplines of psychology. Technology acceptance models such as Davis's (1985) can be partly attributed to older psychological models that also deal with people's decision-making. Prominent examples of this are, for example, the partially successive models Theory of Reasoned Action (Fishbein & Ajzen, 1975) and Theory of Planned Behavior (Ajzen, 1985), which are partly understood as sociological explanations for phenomena of game theory (Luce and Raiffa, 2012).

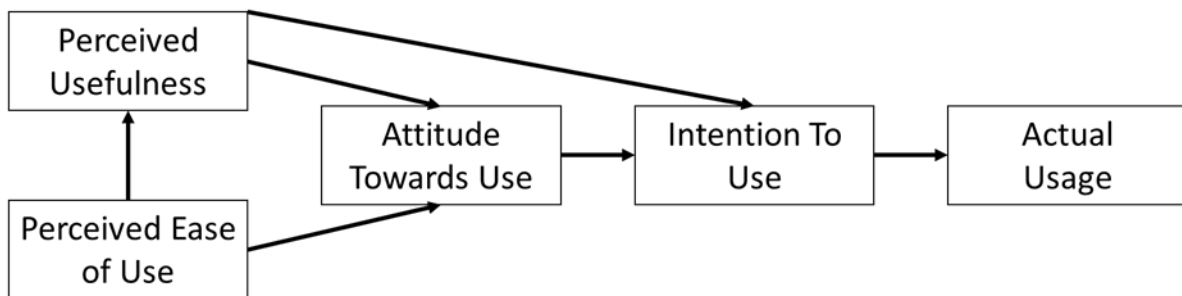


Fig. 1 - Technology Acceptance Model (own illustration, inspired by Königstorfer, 2008)

The aim of the technology acceptance model shown in Figure 1 is the prediction of user and consumer behavior on the basis of two central product or service variables: the perceived usefulness as well as the perceived ease of use (Königstorfer, 2008). From this, the attitude, the intention to use and the actual usage behavior are finally predicted in stages. Studies in the field of mobile commerce have shown that about 40 percent of the variance in terms of behavioral intentions could be explained (Venkatesh & Davis, 2000). This high predictive validity is blamed by researchers for the technology acceptance model (TAM) as one of the most viable models of acceptance research in both science and practice.

III. USING THE TECHNOLOGY ACCEPTANCE MODEL TO EXPLAIN MICRO-DONATIONS AND THEIR IMPLEMENTATION

Chapter 2 argued the benefits of the TAM in explaining human behavior in regards to the acceptance of new technologies. While one could argue that micro-donations are as far as their goal goes, they are not so much a technological but societal innovation. This cannot be argued for the implementation which is conducted by technical means — either with an analogue or a digital solution.

Micro-donations are becoming more sophisticated in Europe, especially in retailers like Kaufland, H&M, and Rossmann. Kaufland, a supermarket chain, is integrating the collection of micro-donations in different ways in the payment process in Poland and Germany. Romania does not have this integration yet.



Fig. 2 - Kaufland Poland (own illustration)

As shown in the picture from a store in Poland, one way of collecting small donations is at the cash register area in that country. Here, the customer has the opportunity to donate coins directly after their purchase. This simple process of touching and then donating the coins creates a haptic experience. Plus,

the direct visibility of seeing the collected coins through a transparent box rewards the donor with a psychological sense of achievement. The consequent disadvantage is that the effort to pick up the money, count it, and deposit is very expensive. For this reason, 100 percent of the donated coins can never benefit the projects.

On the other hand, the second variant, which has been used in Germany for a few years, is rounding up. During the payment process, the customer has the opportunity to round-up the final amount to the next full ten cents. So a purchase for 14.57 EUR would grow to 14.60 EUR and the three-cent difference will go towards a social project. It is not possible to round-up to higher amounts. This final amount is then paid in full, so that the micro-donation becomes part of the bill. Considering high cash handling costs for the merchant and rather annoying coins in the customer's wallet, it is a win-win situation for all sides — in the end, of course, also for the donation recipient. This type of donation allows for the full distribution of micro-donations, since the entire process is processed digitally and billing takes place in the inventory management system. All round-ups will be digitally collected and remitted together to the donor recipient monthly.

But the lack of touching and feeling the coins can be a disadvantage because the customer can easily forget or be unaware during the payment process that he does not donate. In this situation, however, there is no turning back because the process is complete and rounding-up is also impossible post-purchase. To prevent this negative experience, the customer must be made aware of the possibility of rounding-up at the right time. The ideal time is in the few seconds between the announcement of the sum to be paid and the approval of the completion of the payment. Here, the possibility of donating must be integrated into the payment process in such a way that forgetting is impossible. Alternatively, the customer can be asked directly if he wants to donate the leftover coins. The risk exists at this point that the potential donor could have questions about the nature of the gift or organization. In an industry where time is money, discussions at the cash register are not wanted.

The TAM proposes that the main predictors of people's attitude towards technologies are their ease of use and their usefulness. While the perceived usefulness of micro-donations will depend on a person's attitude towards donations and the donation cause, the perceived ease of use will strongly depend on the technical implementation. The ease of use furthermore needs to be discussed from two different points of view — on the one hand, it has to be easy for the customer to use. In order to do that, as few hurdles as possible have to be in the way. On the other hand, the system also needs to be able to be managed by the vendor. Given that the implementation of micro-donations is usually seen as part of a charity or the corporate social responsibility activity of a company, most vendors will be more likely to implement it, if it does not interfere with their business. According to a study done by the aforementioned DRA the necessary implementation steps are as follows.

A. *Process-side adjustments for implementation of micro-donations*

The one-time adjustment of the cash register system requires only limited effort. The existing functions of the system are usually undisturbed by the customization. According to the current status, there are two basic options for implementation:

1. The illustration of the "Round-Up" as a separate "article" (often already possible in concessionaire business or similar sub-functions within their own systems or simple investment and separation of their own product group). Rounding up is like adding a "virtual" item at the end of the checkout process. The receipt remains unaffected.

2. The expansion of the summation process at the cash register (rounding up "at the end" of the buying process). The process flow would be as follows:

- Cash the goods
- Determination of the subtotal
- Calculation of the rounding amount (via algorithm, see below)
- Completing the coupon
- Selection of means of payment and receipt printing.

B. *Effects on sales processes and point of sale*

The process of rounding up is voluntarily initiated by the customer, who has been informed by advertising materials, campaigns and PR. In addition, the cashier may verbally indicate the possibility of rounding up. Thus, effects on the sales process are hardly to be expected, as the cashier only carries out the verbally-voiced customer request "Please round up!" with a one-time system confirmation by a simple keystroke at the cash register.

Accordingly, the training effort also remains within a manageable framework and can be implemented efficiently and in a resource-saving manner via the regular branch information and training courses.

C. *POS system changeover: Description of the target situation*

The aim of the technical and process-related conversion of POS systems at the point of sale is that the customer can round up the receipt value for the next full 10 cent amount and thus donate it. The maximum donation height / rounding is therefore 10 cents.

D. *Calculation of the donation amount:*

1. The calculation is made before general means of payment (cash, card, vouchers) and after any discounts (the actual invoice amount of the customer, if it had not been rounded up).

2. The donations from rounding up are not subject to sales tax for the companies taking part in the distribution because the company has not provided any services to the consumer.

3. The participating company collects donations from roundups in its own name and for its own account. The recording takes place as operating income. At the same time, accounting companies record an expense by terminating a liability towards the foundation GmbH. Income taxes therefore do not arise on the amounts received.

4. It is therefore usually a revenue that must be listed separately in the statistics and reports (billing journal, daily reports, etc.).

E. *POS system conversion (example: extension of the summation process)*

The decision to round up and donate is voluntary for every customer. It will only be rounded up if the customer verbally expresses this with the words "Aufrunden bitte!". For a smooth and time-saving process, it is therefore necessary to create a corresponding adjustment in the cashier process. A new button function "rounding up" should be implemented, which allows the cashier to trigger the process accordingly (trigger). It is important that the donation amount is calculated before the means of payment (cash, card, vouchers), but after any discounts.

Cancellation: In the case of a same-day cancellation, the donation can also be canceled.

Return handling: In case of a return, the donation should not be refunded (exchange or cancellation right is not valid). If a refund is desired as part of the customer service, it may be borne by the retailer itself. The recommendation and common implementation practice is: refund for full returns, no refund for partial returns.

Reports: integration with the internal reports is up to the partner. Experience shows that integration requires little effort.

F. *Implementation with regards of TAM*

The aforementioned aspects of implementation clearly show a focus on the "ease of use" aspect of the TAM. The implementation strategy thereby informs vendors about the necessary steps for installing the round-up system needed for the micro-transactions. By offering such a simple-to-use system, it can be installed easily at different points-of-sale. The ease of use in regards to the implementation also translates into actual use during the sales process. Making it easy for customers to decide for a micro-donation seems to be the key to success with this system. As Kirchgässner (1992) argues, decisions concerning neglectable amounts — such as micro-donations — will not depend as strongly on rational decisions as bigger donations. This is where the ease of use or the convenience, as Schreiber et al (2006) put it, comes into play: When applying the assumptions of the Technology Acceptance Model (Davies, 1985) to a donation-system the parallels between the assumptions of (Schreiber et al, 2006) and the TAM become clear: In order to bridge the gap between intention and action, as many hurdles as possible have to be removed for the customer in order to allow him to do good. While the scientific literature knows a multitude of other approaches towards bridging this gap — such as, most prominently probably, nudging — in the case of micro-donations it seems clear, that the ease of use needs to be perfected, in order to maximize results.

IV. DISCUSSION & RECOMMENDATIONS

Most people do consider themselves to be following a moral compass and possess a clear understanding of what is right

(Eisenberg, 2000). This is true for most aspects of life: As Prochaska and Velicer (1997) argue, making changes to one's behavior is a complicated process. Even if the first step — acknowledging that a situation or behavior should be changed — and the intention to continue this path is taken, many hurdles need to be overcome.

Both for an initial action and for the continuation of behavioral change, energy is needed. Prochaska and Velicer (1997) point out that sustaining a positive change might be even harder than initiating it, as the initiation of positive behavior can go along with emotional rewards and a feeling of success. This is not the case with sustaining positive behavior — as the behavior becomes more normal, the feeling of succeeding vanishes, while temptation to go back to the old (often easier) behavior stays. Therefore, it is necessary to not only set incentives for sustaining positive behavior but also to minimize

the energy necessary for doing so. The less complicated, exhausting or hard it is perceived to be to do good, the more likely people will be to do so.

For micro-donations, given by rounding-up sales prices for a few cents per purchase, those hurdles seem to be mostly of convenience-related nature: Kirchgässner (1992) describes that for such marginal decisions, the economic aspect of the decision is not very relevant for most people. This puts a focus on the ease of use, as it is also described by the Technology Acceptance Model. In order to maximize the outcome of such a system, the consumer should feel as little resistance and trouble as possible. For the individual, the amounts donated usually should not result in a significant financial loss. The potential for gain on a society label seems enormous, though. This is illustrated by figure 3 which summarizes the donation potential on the German market.

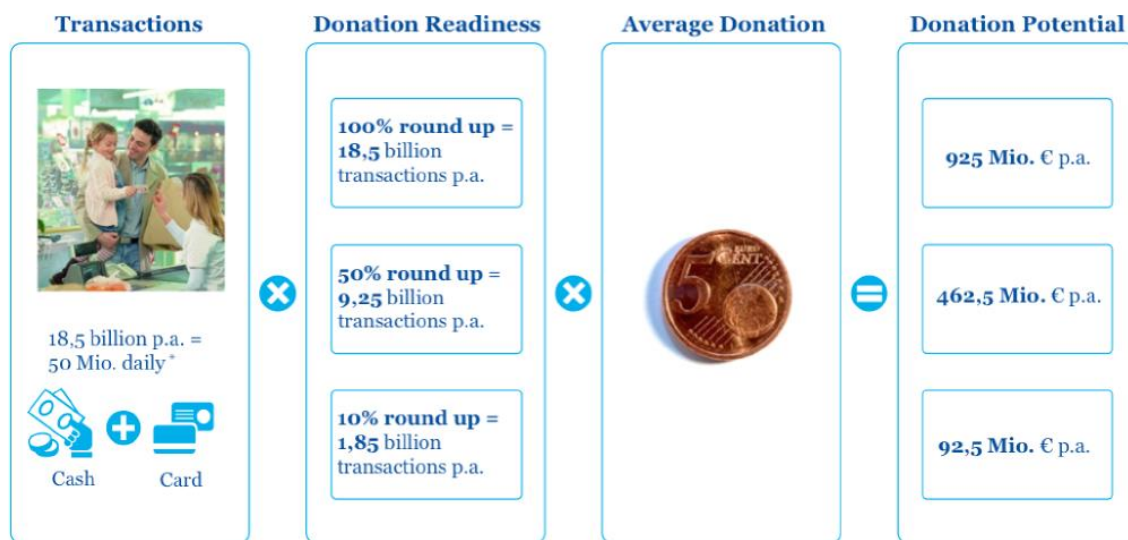


Fig. 3 - Donation potential (own illustration)

Even with an average donation of only five cents and a donation readiness of 10%, the yearly donation potential sits at 92.5 million Euro. The authors, supported by a survey conducted by them, argue that most people (including those who usually do not donate — the young and the less wealthy) would be willing to regularly donate sums of this size. That implies that the potential only needs to be monetarized by means of comfortable, convenient implementations of micro-donation systems at as many points-of-sale as possible.

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