

Adoption decisions of IS are not always rational

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Abstract. People are assumed to behave rationally in decisions meaning that they should receive information, form thoughts and conduct behavior consistent with the information. However, people do not always behave that way. They might avoid, block or deny the information. Even if they receive information and accept its accuracy they might behave controversially. It is important to understand this reality also in the field of IS as designing, marketing, or utilizing a system is dependent on its users. The aim of this paper is to explore the reasons why available information does not make people behave accordingly. The reasons are justified by prior research, logical reasoning and intuitive thoughts. The reasons are a basis for future empirical research.

Introduction

It is generally assumed that people tend to behave in a sensible manner. They are assumed to receive information from different sources, process the information, and then behave accordingly. The behavior or reasons for certain behavior have been in interest in the field of information systems science. Understanding why people make certain decisions is of importance when considering adopting certain technologies, designing them, marketing them, and when considering user training. The most well known explanation for these is Technology Acceptance Model (Davis 1989; Davis et al. 1989) which seeks to explain and predict adoption willingness by ease of use and usefulness. This model as well as other applications of similar types of attributes, do not take into account the complexity of human behavior. For example Theory of Reasoned Action (Ajzen 1988) assume that

processing information is followed by attitudes and subjective norm. Theory of Planned Behavior adds perceived behavioral control. These are assumed to lead to intentions and finally to behavior. In this context it is also noted that sometimes people might 'change their minds' based on new information. These are largely used as a basis when seeking to explain behavior. (see e.g. Ajzen 2001)

However, people do not always consider the available information and/or the implications of their actions. In some cases people are not even in a position of making a free choice, and a forced choice can easily create resistance in the minds of human beings. Electronic banking in Finland is a good example of this. When banks started launching their services in the internet people were not willing to change their habits and adopt the new system. This occurred only after they were forced to. Banks started to charge relatively high fees for transactions that customers were doing in the banks. In addition, some offices were closed and the amount of office personnel was reduced in banks creating huge lines in the office. It simply became cheaper and easier to conduct one's own bank transactions in the internet. The same thing is happening now with e-invoicing. People are used to receive invoices by mail on paper format and then pay them in the internet or by using other means. Transformation from paper invoices to e-invoicing would simply mean receiving the invoices directly to one's internet banking system where one could conduct the transaction simply by a click and avoid the typing errors and the time spent on that added with the advantage of not receiving so much paper mail. Even though people are explained to only gain from adopting e-invoicing, they are not willing to adopt it.

In practice, when people have information available, they do or do not consider it as well as they do or do not consider the implications of one's actions. There can be several reasons for this but regardless of the reason the observed behavior is resistance towards the new situation. Resistance towards new situations is not a bad thing; it is something that also makes humans skeptical for rushing to new, unknown, and even scary or dangerous situations. Also resistance towards new provided situations can in some case lead to more creative choices, if ambiguity and fluidity is possible in humans' actions (see e.g. Jacobs and Statler 2006). No doubt that some of the resistance can be just laziness if the new thing seems to require effort but other parts might be much more complicated. The aim of this paper is to explore the reasons *why available information does not make people behave accordingly?* This is an important question in the context of information systems science as the in-depth understanding of the matter seems to be inadequate. The state-of-the art in this niche seems to be dominance of theories that simplify and explain behavior as all humans were somewhat the same and would behave according to same logical process. To understand the adoption process more deeply it is important to understand *why* humans sometimes seem to behave randomly in their behavior and adoption choices and *how* the reasons actually impact the process. This paper brings new perspective in the topic for IS

community based on literature and no empirical evidence is ready at this point of the research project.

The paper is organized as follows. First, the dominant model for behavior process is presented with a very short overview of the factors of these models. This is followed by explaining what exactly is meant by information and behavior in this context. Then the potential reasons *why available information does not make people behave accordingly* are presented and justified by prior research and logical reasoning and some intuitively appeared thoughts. Finally, the future of this research idea is discussed followed with brief conclusions.

Usually assumed behavior process

Several theories explaining behavior assume that there are certain antecedents such as attitude, subjective norm, behavioral control, perceived usefulness and ease of use of the system in question that lead to intention towards certain behavior. Then again the intentions are assumed to lead to the actual behavior. (Ajzen 1988; Davis et al. 1989; Ajzen 1991) Behavioral control referring to perceived ease of or difficulty of performing the behavior (Ajzen 1988) is somewhat related to self-efficacy which refers to the human's perception that one can successfully execute the behavior (Bandura 1977). Behind the antecedents of intention and behavior there is information that enables people to form their view on these antecedents. For example to determine subjective norm, referring to person's perception of social pressure towards performing the behavior (Ajzen 1988), self-efficacy (Bandura 1977; Luszczynska et al. 2005) or in more detail usefulness of a system (Davis et al. 1989) one needs to acquire and internalize information on the matter, thus in one way or another learn. This information can be acquired from several different sources such as own or peers' experiences. In general thus, it is suggested that in broader level information eventually results into some sort of behavior consistent with the information. More specifically for example Theory of Reasoned Action and Theory of Planned Behavior (Ajzen 1988) hold a strong assumption that humans behave in a sensible manner which means that they take the available information into account when making decisions and implicitly or explicitly consider the implications of their actions.

Information

Typically humans are assumed to behave rationally in their decisions. They are assumed to search for and receive information and then behave accordingly. This information can be acquired from different sources, through personal experiences or external sources. For example Bandura (1977) suggests four major sources of information that impacts one's efficacy expectations: performance

accomplishments, vicarious experience, verbal persuasion, and emotional arousal. Performance accomplishments refer to one's own mastery experiences on similar situations faced before. In addition to one's own experiences people also tend to observe others. Vicarious experience means social comparison to others performance accomplishments or failures. Verbal persuasion is easy way to try to influence behaviors. However it is not as effective as prior experiences. Emotional arousal refers to that emotions in certain situations are a source of learning. Such emotions can be for example fear or stress. (Bandura 1977) Although these are introduced in the context of one's efficacy expectations, it seems reasonable to assume that other types of expectations or attitudes towards behavior can be formed by learning experiences from these sources. In making any kind of decisions information received from own or others' experiences, verbal communication, or emotions have typically some impact.

In addition, people receive information from other sources. When making decisions concerning certain behaviors, for example purchases or adopting a new system, also media, both advertisements and documentary materials or specialist articles are an important source of information. The information is not only something that humans receive constantly but they also seek for information considered relevant. When considering an important behavior choice they might put heavy efforts on trying to find all detailed information they can from several sources.

Behavior

Behavior is the actual outcome. In this context behavior can be anything. It can be making a decision to start use a new system, or it can be a decision to go to a gym, or it may be behaving in a similar way as the community one belongs to and demonstrating solidarity to the community. It is important to note that actual behavior outcome is distinct from intention or attitude as certain attitudes or intentions do not automatically lead to actual behavior, although behavior precedes attitudes and intention. Most simple explanation for conflicting intentions and actual behavior is external factors that make it impossible to engage in a behavior. (Ajzen 1988) For example one might have positive attitudes towards certain movie, have strong intentions to actually go and see the movie, but when one is about to purchase the ticket it appears that they are sold out or one falls sick and is unable to go anywhere. Thus behavior refers only to actual occurrences, not intentions.

Information does not always lead to consistent behavior

The assumption of humans taking account of available information and considering implicitly or explicitly the implications of one's actions (Ajzen 1988) clearly assumes that humans behave in some sense rationally. They are assumed to consider the available information related to the future decision and utilize that information when considering the implications of their actions. However, people do not always take the available information into account and behave accordingly, but instead they might behave on an exactly opposite manner than one would assume given the information. People might *know* that the *right* decision would be to behave according to option A, but in their minds they might block the information supporting the *right* decision. Reasons for doing that might be such as if they feel it uncomfortable, they fear that taking that action would not succeed, they hold some prior attitudes towards A scene that are contradictory with the new information, or they have been discouraged by their peers to follow A. Any of these reasons or any other circumstance might make them choose option B even though they *know* they should have chosen A. People very often follow their feeling when making decisions and do not follow the voice of reason even so that they do not even *know* or care to know or consider any options, they just pick first option that *feels* good.

As mentioned, generally theories explaining behavior assume that the behavior process starts from receiving information and ends with somewhat consistent behavior. Between information and behavior there are assumed to be processes of forming attitudes, perceiving subjective norm, behavioral control or self-efficacy, leading to intentions. (Bandura 1977; Ajzen 1988; Davis et al. 1989) However, if people block the right information and pick what feels good, as explained in previous paragraph, the behavior does not seem to an outside observer to follow any logical pattern. Paradoxically to logical pattern, others (see for example Festinger 1957; Freud 1961; Batson 1975) have been able to demonstrate that information does not always lead to behavior that would logically follow the process. In some cases people do not behave in a manner consistent with the information, attitudes, or their intention (limitation for intention's predictive power see e.g. Wood et al. 2005; Limayem et al. 2007) even though external factors would enable the behavior. There could be at least six possible explanations for this.

Possible explanations why information does not always lead to consistent behavior

First, for example cognitive dissonance theory (Festinger 1957) suggests that even when people receive information inconsistent with their prior attitudes, they do not

necessarily change their attitudes but instead they might rationalize their prior attitudes to themselves even stronger and show stronger commitment to their attitudes than before receiving the disconfirming information (Festinger 1957; Batson 1975). If one is committed in some way to certain behavior and information creates controversy between what one wants to do and what the information suggests one should do, it leads to unwanted controversial feeling. Rationalizing to oneself why he/she can continue the behavior regardless the new information is a way to avoid the frustration created by the controversy. (Festinger 1957; Batson 1975)

Second, information received from an untrustworthy source might be a reason for it having no impact. For example if a lawyer states a diagnosis of one's illness it can be overlooked because he/she is not a doctor, even though the lawyer would be able to explain how the symptoms lead to certain diagnosis and would be correct.

Third, people tend to be quite selective when receiving and considering information. If one already holds strong beliefs towards something he/she might be very selective when picking new information. One might pay attention only to that type of information that supports their prior attitudes.

Fourth, one could assume that people do not want to engage in a behavior if one is certain that he/she would fail in that. Clearly none of us would intentionally want to collect experiences of failure. Thus Bandura's (1977) concept of self efficacy might be an important factor that discourages or supports humans when considering certain behavior. Self efficacy is simply subjectively perceived probability that one is able to execute certain course of action. It could be task-specific or general self efficacy referring to *a broad and stable sense of personal competence to deal effectively with variety of stressful situations* (Luszczynska et al. 2005, p. 81). Close to this is Ajzen's (1988) concept of perceived behavioral control. It refers to perceived ease of or difficulty of performing the behavior (Ajzen 1988) and is thus slightly different from self efficacy which seems to refer to perceived capability to perform the behavior rather than its ease or difficulty. Even if one feels that he/she is capable of performing the behavior but it is extremely difficult one might decide to skip it whereas if it was perceived easy one could have decided otherwise. On the other hand it is possible that if one feels being capable of performing a difficult behavior he/she might still decide to perform it as accomplishing a difficult task might create higher satisfaction than an easy one. However, it could be logically assumed that regardless of perceiving a task difficult or easy one would most likely skip it if it is not perceived very likely to accomplish successfully. These are concept that could also be seen as a continuum: the probability of succeeding is naturally very high with easy tasks and the probability of failing increases along with increased difficulty.

Fifth, one might procrastinate which means voluntarily delaying intended behavior regardless of expecting to be worse off for the delaying (Steel 2007).

One might have intention to engage in certain behavior and one might actually execute the intention but the reason why others cannot observe the actual behavior is procrastination. Reason for postponing the behavior can be such as if the behavior is felt unpleasant but necessary. A simple example of this could be the transition from analogical TVs to digital ones in Finland. Consumers have not been able to choose whether they want to start using digital TVs as analogical transmissions were finished. Thus it was well known that if one wanted to continue watching TV one needed to acquire proper device to be able to receive the digital transmissions making it clear that the decision of acquiring proper device was already made. Even then huge masses of people postponed the actual behavior, acquiring the device, until the analogical transmissions were finished.

Sixth, one tends to deny information that is in some way painful to accept. Denial is one defense mechanism. 'Defense' in here refers to psychological definition that it is 'protection of ego against instinctual demands' (Freud 1961, p. 46). Eventually the meaning of defense is to secure one's ego from feeling 'pain'. This 'pain' can arise within an individual or from an outside world. There are several types of defenses (see e.g. Andrews et al. 1989; Andrews et al. 1993). Humans can seek to defend themselves against this 'pain' for example by denying the actual state of world. (Freud 1961) If one is strongly committed to certain type of behavior or attitude towards the behavior, receiving contradictory information might be viewed painful as it would rationally require behavior change. If one strongly holds on the mental commitment, and the new information can not be rationalized in a way that supports the existing views one might deny the new information and in that way allow ignoring it. A simple example of denial could be if one receives information that one's spouse has been unfaithful, it might be so devastating information that one denies its accuracy, accuses others of lying, and totally ignores the information pretending it never happened. Denial could be typical behavior for people who for some reason do not have strong self esteem or do not respect oneself enough to be able to cope with painful situations.

Possible moderators for inconsistent behavior

The reasons explaining why information does not automatically lead to consistent behavior are clearly dependent on situation, context, and also the person in question. People are all different, and it cannot be stated that these would apply similarly to all. These presented reasons however demonstrate different forms of resistance people have towards new unexpected situations. It is not completely unreasonable to claim that everyone have at some point of their lives demonstrated some type of resisting behavior described earlier. The frequency or contexts of these behaviors might be explained to some degree or at least impacted by individual's personality, sentiment at the particular moment, culture one belongs to, or the community one is committed to.

Personality is a complex factor, since one could argue that everyone has a unique personality and no two persons are the same. There are different ways to categorize humans according to their personalities, although there seems to be a consistency at least at some level of five personality factors. Digman (1990) discusses the five-factor model having extraversion/introversion, friendliness/hostility, consciousness, neuroticism/emotional stability, and intellect as the factors. There is also a personality test standardized in Finland (Hämäläinen et al. 1994) that contains five factors close to the previous ones: neuroticism, extraversion, openness, agreeableness, and conscientiousness. As one can see, these factors are quite broad and categorizing people according to these factors to find explanation to the degree of inconsistency between received information and behavior would seem quite harsh and even misleading. It is found that the broad attitudinal or personality traits measures correlate poorly with single behavior or behavior tendency but aggregating over behaviors and situations the predictive power is higher (Ajzen 1988). However this aggregation loses the situational or personal issues that would determine the actual behavior in a given particular situation. Each situation and person is unique and a broad examination of factors does not capture that. However some variables within these broad factors might have some explanatory power such as impulsiveness. Thus it could make sense to unfold the variables of the personality factors.

In addition to more general personality attributes it is possible that one's sentiment at a given moment might impact the strength of resisting consistent behavior between information and behavior. Same person having a given personality might act differently different times depending on the mood. For example depressed person does not intuitively drawn seem to be interested in trying everything new and exciting.

It is clear that people belonging to different national cultures differ in several ways. For example the classical presentation of national cultural dimensions by Hofstede demonstrated that cultures differ in terms of power distance, individualism, masculinity, and uncertainty avoidance. (see for example Hofstede 1984a; Hofstede 1984b) Later on Hofstede added fifth dimension called long-term orientation. The values and proper behavior models within the culture might impact the way how individuals process the information they receive.

In addition to national cultures, people might belong to different types of communities. These can be such as work communities, religious communities, or communities formed around some free time activities. Regardless of the type of community, if people are committed to the particular community, the subculture within the community might in some way form individual community members' values and behavior.

Discussion

Understanding why information and final behavior are not always consistent is important in the field of information systems science, as all in the field is somewhat related to people using – or not using – the systems. It is not enough to understand why people adopt some systems but also why they do not.

E-invoicing is a good example of a system that people do not want to start using although others are trying to convince the consumers that they will only gain from that. Clearly sharing information on the advantages and easiness is not enough to persuade consumers that it would be worth all the effort. Having a system that clearly encourages resistance among the consumers is an interesting context to study the reasons behind resisting behavior. The aim of this paper has been to explore the reasons *why available information does not make people behave accordingly*. Having discussed possible explanations the aim is then to proceed to investigate the subject in an empirical setting to unfold which of the discussed reasons actually do have impact and how.

Conclusions

In general humans are assumed to behave somewhat rationally by behaving according to the information they receive from multiple sources. It is shown in literature that there are occurrences when this does not happen. Humans might behave irrationally for several reasons which are not considered when making the decision but are rather part of the unconsciousness. These reasons clearly impact also the IS field although these have not been traditionally the topics of most interest in the field. Increasing understanding why humans resist strongly some behavior, some systems, will provide valuable information for all players in the field.

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