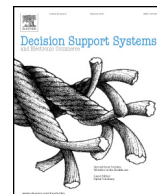




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The blocking effect of preconceived bias

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"But I think the one thing that sets apart our stores and Apple, is fundamentally two types of people in the world, in my view. There are believers and there are skeptics. Apple is filled with believers." – Ron Johnson (Apple, Inc. Sr. VP of Retail Operations), 2004.

ABSTRACT

Research has shown that preexisting individual biases about a product can have negative effects on future purchase behavior or use. While extensively studied in marketing, the role of informational blocking with regard to decision making about information technologies has not been investigated. This research explores the interplay of biases as a form of information blocking and explores these *biased-blocking* effects in the context of technology. Results show that while different types of experience have a significant effect on the decision to use a technology product, this effect is completely blocked by the preconceived bias of the individual about the technology.

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1. Introduction

Why are Apple Stores so successful? There are a number of reasons for their success, but clearly Ron Johnson's supposition is that the experiences that these environments offer for potential and existing customers represent an important part of the equation. In many ways, the Apple Store experience is designed to prime a customer to develop a favorable attitude about not only the software and technology in the store, but the environment and brand associated with the product. In other words, the store experience is designed to "bias" the customer in favor of the Apple brand and products. This type of bias in individual preference is also seen in non-tangible technology goods including experience goods such as Internet browsers (Internet Explorer versus Firefox) or even in credence goods (such as iPad repair shops, auto mechanics, or diet plans) [1]. This is important because whether we are discussing a choice between two different brands of cell phones, operating systems, or ERP systems, decision makers will carry into the decision-making process preexisting knowledge and biases that influence their attitudes and purchasing behaviors. As a result, products that have similar or even superior features might be ignored because the existing biases preclude the decision maker from evaluating all of

the products equally. Of course, this begs the question of why some individuals will reflexively count out a particular software product and, perhaps more importantly, what the nature of biases and experiences are that influence an individual to block out the full evaluation of other alternatives. For software and technology vendors, brand-related biases are significant and, as suggested by the Apple Store experience, an important question is whether and how biases can be overcome through usage experience or persuasion.

Bias [2] and blocking [3] have each been examined to account for the phenomenon of cognitively configuring or reshaping information about products, and hence attitudes pertaining to products or services [4,5]. Specifically, research on bias has shown that if consumers are presented with a product brand along with quality information (positive or negative) regarding that brand, later introduction of attributes pertaining to the product itself are altered by the earlier brand quality information [5]. We argue that individual actions based on these biases are one type of *blocking*, which occurs when the subject actually blocks subsequent information based on a bias in favor of (or against) the product.¹ With regard to information systems adoption decisions, this *biased-blocking* may affect the level of acceptance of a particular alternative

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¹ Other reasons for blocking subsequent information may be that an individual feels overwhelmed (information overload), does not pay attention to subsequent information, or just does not care. Regardless of the reason, we postulate that bias is just one reason blocking may occur and is therefore just one type of blocking.

by certain individuals. Biased-blocking may also help to explain why certain individuals accept a particular technology based solely on the technology brand. Information systems acceptance has classically been seen as a rational process [6,7], with later studies exploring other determinants outside of the rational domain [8,9], but no studies have explored the influence of biased-blocking in this decision-making process. As a result, a better understanding of the relationship between biases, the blocking process, and resultant behavioral intentions would provide managers and technology marketers with information to assist in designing, building, and deploying information technologies.

Previous research in technology consumption/adoption has investigated some of these non-traditional processes that affect information systems adoption. Yang and Yoo found “considerable influence” of affective attitude on usage intention and called for more attention to the construct [10]. More recently Djamasbi et al. found that positive mood is a significant predictor of technology acceptance [11], while Luo found that positive affective attitude also significantly impacted behavioral intent [12]. Clearly, this work on affect indicates that there are other factors in play beyond the traditional acceptance model, and marketing literature leads us to believe that information bias and information blocking may also have a significant impact on our understanding of technology adopters' decision mechanisms. Since bias is often linked to brand perceptions, we also further extend the IS brand literature [13,14] by investigating this information bias as it pertains to brand and its impact on technology usage intentions.

The purpose of our research is to examine the relationship between bias and blocking in the context of information technology adoption decisions. To examine these issues, we first propose a theoretical framework incorporating the concepts of bias and blocking. The review leading to this model will provide a basis for understanding not only the bias and blocking processes individually, but it will also provide a conceptual framework for linking these two constructs into a process we call *biased-blocking*. In doing so, we discuss situational conditions that enable biased-blocking to occur as well as define the valence direction of the effects. Additionally, we examine this phenomenon under varying informational assessment scenarios that are defined by the type of exposure that the subject is given to the technology. To evaluate these questions, we use an experimental study to examine how bias and blocking work together (i.e. biased-blocking) to influence intention decisions when subjects are presented with a novel product through either a “hands on” or vicarious-only exposure to the product. The paper concludes with a discussion of the findings, implications for theory and practice, and suggestions for future research.

2. Background

Much of what we know about the processes of bias and blocking in relation to product adoption decision-making comes from research in marketing. For example, researchers have explored how both of these processes affect satisfaction within consumer behavior (see [15] for an extensive review of this literature). This literature is relevant to the study of adoption of information systems because the consumer decision-making process for a variety of products parallels that of the processes used to select and acquire various information systems.² Nevertheless, the processes by which bias and blocking should influence the acceptance of software also include unique factors relative to how these processes have been shown to operate in marketing. For example, users are often exposed to new software technologies early in development through alpha and beta testing. While a physical product vendor

² It should be noted that the focus of this research is on *individual* technology adoption and the impact of bias and blocking thereon. The biasing effect on technology use at the organizational level is not in the realm of this research as this process could include an individual or group that is making decisions for the entire organization (i.e. email software, ERP system, etc.). Bias and blocking could also have an effect here, but this group-based organization effect may involve vastly different mechanisms as compared to the effect on individual decision-making.

might pre-release prototypes of products or demonstration videos on a crowd funding site, it is unlikely that the scale of distribution or use will be as large as it would be for software because of the higher replication and distribution costs for physical products. For example, eight months before its release, over one million people had downloaded the Windows 10 Technical Preview, which suggests that many people had exposure to the software prior to the release of the final product.³ Given this, our research is designed to explore the impact of both bias and blocking on attitudes and decisions made by potential technology adopters.

To develop our framework, we review the literature from marketing as well as from information systems to develop a theoretical model detailing the role of bias and blocking on intention decisions with regard to information technologies. In our model (see Fig. 1), four major constructs or events are represented. First, *biases*, which come from external information sources such as advertising, word-of-mouth, or other sources of information about the specific product [4]. These types of biases contribute to product evaluation, as the subject's biases affect how they will interpret the product's characteristics.

Second, the decision maker *experiences* the product that is the current focus of his or her evaluation. In practice, if the product is new to the decision maker, he or she will often be given an opportunity to learn about the product through direct experience. This experience can be obtained either through hands-on use of the product or by observing others engaged in use [16]. In the context of information systems evaluations, these two modes of experience are commonly used in retail venues where, for example, an Apple Store sales representative might explain and demonstrate use of the technology and follow this with an invitation to “test drive” information technology and software.

The third component in the model is the potential *blocking* of secondary product information.⁴ This occurs when extant information that the decision maker holds about the product causes him or her to block secondary information about the product [5]. Our model suggests that a decision maker's final product intentions are dependent on how the bias and blocking processes operate to determine the final evaluative information used in their decision-making. As outlined below, theory suggests that the manner by which these factors are brought together will have varied effects on whether and how the decision maker evaluates each in his or her consideration of the product.

Finally, the user will make a decision whether or not they would use the product. While the marketing literature typically looks at buying behavior, use intention has been extensively used as a dependent variable in the IS literature. If the blocking effect holds, then the preliminary bias will mask the effects of experience such that bias will provide the sole influence on use intention.

2.1. Bias

Bias refers to the tendency for individuals to perceive information that is consistent with personal attitudes as more valid than information that is inconsistent with personal attitudes [2,4]. Bias has been shown to affect individual attitudes, with those holding stronger attitudes toward a particular product tending to resist attitude change [17–19]. When individuals adhere to an existing, strongly held bias, they tend to resist persuasive efforts such as marketing promotions and other informational campaigns [4]. This relationship between bias and attitude change is important to understand for marketing purposes because individuals who hold a strong attitude about a brand or product type may be harder to convince to adopt or use a different product [4].

³ <http://winsupersite.com/windows-10/over-1-million-people-have-downloaded-windows-technical-preview>

⁴ Secondary product information refers to product-related information available to the subject after formation of their initial impressions. This is discussed more thoroughly in the “Blocking” section below.

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