Why People Resist to Internet Finance

From the Perspective of Process Virtualization Theory

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Abstract. With the advancements of information technology, internet finance as a IT-enabled virtualization of business process has gain a fast-growing marketplace. However, little is known about why there is still a widely reluctance to use internet finance. Based on process virtualization theory and user resistance literature, we postulate a research model of user's resistance to internet finance by integrating the process characteristic factors, external influence and internal influence of user. Finally, we discuss the potential contributions and limitations of the study, as well as ideas about related future research. Throughout the study, we use the process virtualization theory as a means of integrating discussion and survey approach is chosen to collect data and empirically test the model in future research. The potential theoretical contributions are mainly made to user resistance literature and internet finance implementation. Meanwhile this study provides explanations of why certain users tend to resist to internet fiancé while others not.

Keywords: User resistance · Internet finance · IT-enabled virtualization

1 Introduction

In this new era of information technology, more and more processes, previously performed through physical channels, are migrated virtually via information technology in the last decade [1, 2]. For example, financial banking processes are performed increasingly through internet channels, rather than through bank branches [2]. However, in spite of a fast-growing marketplace, internet finance as an IT-enabled virtualization of business process has encountered a reluctance to use from user community.

User resistance, which is identified by various IS research as the primary reason for IS failure [3, 4], becomes a salient problem for researchers to investigate. Although the drivers and manifestations of user resistance have been extensively studied in previous literature [5–7], those studies mainly rest on the conceptual level. Besides, while most of those studies focus on user resistance in mandatory organizational settings, few research probe into the user resistance in the context of discretionary use such as internet finance. Moreover, there is paucity of empirical study in the field of user resistance [7]. Hence this empirical study is set out to investigate our central research question:

F.F.-H. Nah and C.-H. Tan (Eds.): HCIBGO 2016, Part I, LNCS 9751, pp. 437–445, 2016.
DOI: 10.1007/978-3-319-39396-4_40

- What factors affect user's resistance to internet finance?

In order to address the research question, we build our research on process virtualization theory (PVT) and user resistance literature. By integrating the factors identified in PVT and user resistance literature, we posit that (a) process characteristics—sensory requirement, relationship requirement, synchronism requirement, identification and control requirement, and perceived risk, (b) external influence—perceived critical mass, and (c) internal influence—self-efficacy, will jointly influence user's resistance to internet finance.

The remainder of the paper is organized as follows. First, we review the existing literature on user resistance and PVT to discuss the theoretical foundation of this study. Our research model and hypotheses are then developed in the subsequent section, followed by a brief description of methodology. Finally, we discuss the potential theoretical and managerial implications of this study, as well as its limitations and directions for future research.

2 Theoretical Background

2.1 User Resistance

User resistance has received relatively little attention in literature when compared to user acceptance. In psychology research, user resistance is defined as an individual's tendency to avoid making changes [8] while in management research it has commonly been conceptualized as conduct that seeks to maintain the status quo or persistent avoidance of change [9].

In IS domain, resistance has been conceptualized as behaviors of users that intended to prevent the implementation and use of a new IS [10] or an adverse reaction to the changes associated with a new IS [3, 11]. However, as shown in Table 1, there is no consensus in the literature on how user resistance should be defined.

Recently user resistance has been conceptualized as a multidimensional construct, which contains five basic elements (i.e. manifestations of resistance, subjects of resistance, object of resistance, perceived threats, and initial conditions) [7, 17]. Generally, user resistance can be defined as behaviors occur following perceptions of changes associated with the interaction between user and IT. In this study, user resistance refers to the opposition of a user to perform a specific process virtually.

Although there has been more attention in IS domain paid to user resistance, existing studies on user resistance tend to be more conceptual. There is a dominance of case studies which only enumerate the manifestations and drivers of user resistance [7] in this area. However, the little empirical studies on user resistance [11, 18] usually investigate resistance only in mandatory organizational settings [19]. Therefore, this study is set our to explore and empirically the antecedents of user resistance of IT-enabled virtualization.

Table 1. Definition of user resistance

Conceptualization	Definition	Citation
A behavior	Behaviors intended to prevent the implementation or use of a system or to prevent system designers from achieving their objectives	[10]
	An adverse reaction to a proposed change, which may manifest itself in a visible, overt, fashion or may be less obvious and covert	[3]
	IS Avoidance: The individual has the opportunity and even the need, but consciously circumvents using the system	[12]
Cognition	A cognitive force precluding potential behavior	[13]
A psychological state	A normal psychological reaction when a person perceives the consequences of an IT implementation as negative	[14]
An organizational disruption	A signal from a system in equilibrium that the costs of change are perceived as greater than the likely benefits	[15]
A process	A two-phase process: an initial phase that is cognitive or emotional and a second one consisting of the decision to resist	[16]

2.2 Process Virtualization Theory

We adopt the process virtualization theory (PVT) to build the theoretical foundation for investigating the causes of user resistance. PVT was proposed by Overby to explain and predict whether a process is amenable or resistant to being conducted virtually [20]. PVT analyzes the "virtualizability" of a process from the user's perspective while "virtualizability" here describes whether and to what extent a process can be carried out virtually after the traditional physical interaction between people or between people and objects has been removed" [20].

Here the process is widely defined as a set of steps to achieve certain objective [20] and transitions of processes via physical channels to virtual channels through the media of information technology are referred as IT enabled process virtualization. For example, the migration of shopping to the online shopping, the migration of education to e-learning, and the migration of financial banking to Internet finance are various forms of IT-enabled virtualization.

According to PVT, there are four main factors that will negatively influence the virtualizability of a process: (a) sensory requirement—"the need for process participants to be able to enjoy a full sensory experience of the process, other participants, and objects", (b) relationship requirement—"the need for process participants to interact with one another in a social or professional context", (c) synchronism requirement—"the degree to which the activities that make up a process need to occur quickly with

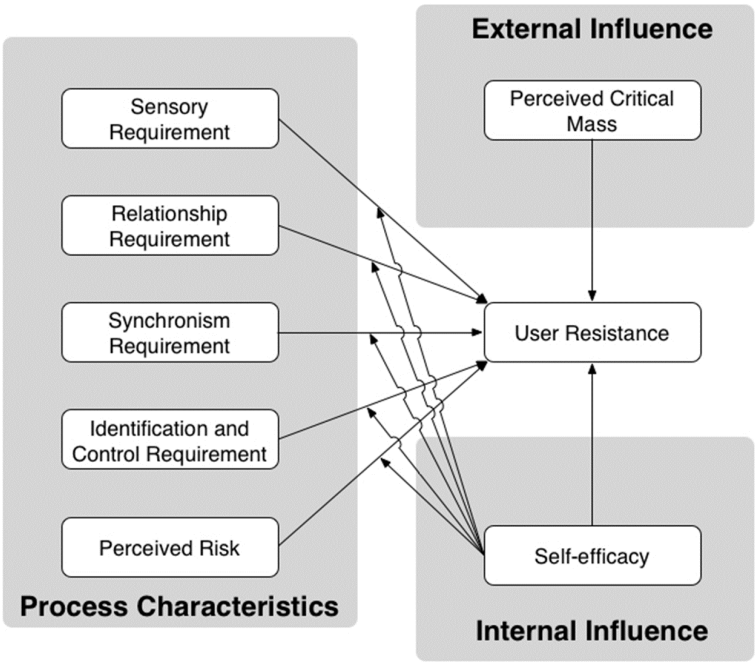

Fig. 1. Research model

minimal delay", and (d) identification and control requirement—"the degree to which the process requires unique identification of process participants and the ability to exert control over/influence their behavior" [20]. In other words, if any of these requirements increases, the process will become less amenable and more resistant to being conducted virtually.

Although PVT provides great insights for understanding the phenomenon of IT-enabled virtualization, there is paucity of empirically research following this stream. Only Overby and Konsynski [1], and Balci [2] provide quantitative evidence of PVT. Hence we will bring fresh insights for PVT by adopting and empirically validating it in the context of IT-enabled virtualization.

3 Research Model

Based on PVT and literature on user resistance, we propose the research model of user resistance to internet finance as depicted in Fig. 1.

3.1 Sensory Requirement

In this study, sensory requirement is defined as the degree to which users need to enjoy a full sensory experience of internet finance. Sensory experiences not only include tasting, seeing, hearing, smelling, and touching other process participants or objects, it

also includes the overall sensation that participants feel when engaging in a process (e.g., excitement, vulnerability) [20]. In IT-enabled virtualization, sensory requirement become salient as the lack of physical interaction usually makes it hard for users to establish a sensory connection to other people, objects, and the process. Although the advancements of IT have facilitated the sensory virtualizations of internet finance to some extent, there are still some virtualizations cannot meet user's requirement of sensory connections. For example, users will gain the sense of accomplishment when they complete their financial business in traditional physical setting, e.g. bank branch. Such sensation associated with conducting the act in person is difficult to replicate in the IT-enabled virtualization. Thus, if users need to enjoy a high level of sensory experience that internet finance may fail to provide, they will tent to resist to internet finance. Therefore we propose:

- H1. Sensory requirement will positively influence user's resistance to internet finance.

3.2 Relationship Requirement

Relationship requirement here is defined as the degree to which users need to interact with one another in a social or professional context when conducting business through internet finance. Interaction in a social or professional context is suggested to trigger knowledge acquisition, trust, and friendship development [20]. Previous literature indicated that the communication cues, such as gestures and posture, in physical interaction will help express the interpersonal attentiveness and thus facilitate the relationship development [21]. Accordingly, the lack of those communication cues in internet finance will make it difficult for users to fulfill their relationship requirement. For example, due to the complexity of internet finance, users will be more reassured to confirm the details of financial product through interaction with bank clerks rather than peruse the terms and conditions of the product by themselves. Besides, if users want to build a long-term relationship with financial providers, they will find it harder to build it virtually in internet finance. Similar to users with high sensory requirement, users with high requirement of relationship will tend to resist internet finance. Hence, we propose:

- H2. Relationship requirement will positively influence user's resistance to internet finance.

3.3 Synchronism Requirement

In this study, synchronism requirement refers to the degree to which users need internet finance to occur quickly with minimum delay. While synchronism is naturally associated with financial business in physical settings, there is usually some extent of delay in internet finance. For example, users are often asked to submit their transaction request first and wait for the review process and final approval when they conduct financial businesses through internet finance. If user needs certain process to be conducted in a synchronous manner as in traditional physical settings, internet finance will likely be resisted. Hence we propose:

- H3. Synchronism requirement will positively influence user's resistance to internet finance.

3.4 Identification and Control Requirement

In this study, identification and control requirement is defined as the degree to which internet finance requires unique identification of participants and the ability to exert control/influence over their behavior. Previous literature argued that it is important to know the identity of the other party when developing a relationship [20]. However, since users cannot physically inspect others to confirm their identity in IT-enabled virtualization, many virtualized processes failed to satisfy the identification and control requirement [20]. In internet finance, it is difficult to detect who is engaging in the process and even possible for other people to hide their identity. For example, users that prefer purchasing financial products from experienced professionals cannot identify who is actually handling their business when using internet finance. For this reason, users with high requirement of identification and control tend to resist to the virtualization. Therefore, we propose:

- H4. Identification and control requirement will positively influence user's resistance to internet finance.

3.5 Perceived Risk

Perceived risk refers to the degree of risk associated with the IT-enabled virtualization perceived by users. It has long been established that perceived risk is a prominent barrier to the acceptance and diffusion of new IS. Gerrard and colleagues [22] found that the most frequently mentioned reason of why certain users resist internet finance is the risk associated with the service. Compared to physical processes, users may even perceive that they will face more uncertainties if they conduct financial businesses virtually through internet finance [23]. Specifically, users often perceive high level of risk associated with the performance of adopting new IS [24] and expect a negative outcome of using it [25], which eventually lead to resistance. Hence we consider perceived risk as a prominent factor that will positively affect user resistance to internet finance and propose:

- H5. Perceived risk will positively influence user's resistance to internet finance.

3.6 Perceived Critical Mass

As the external influence of user, perceived critical mass in this study is defined as the degree to which a user believes that most of his or her peers/friends/relatives are using internet finance. Unlike subjective norm. perceived critical mass indicate the observed aggregate behaviors in user's personal network, rather than only focus on the expectation from user's important others [26]. It is proposed that the larger the proportion of individuals in one's personal network that are engaged in certain innovation behavior, the more likely the individual will act the same behavior [27]. In other word, under social

pressure associated by perceived critical mass, users will tend to alleviate their resistance towards IT-enabled virtualization. Therefore, we propose:

- H6. Perceived critical mass will negatively influence user's resistance to internet finance.

3.7 Self-efficacy

As an internal influence, self-efficacy here is defined as an individual's confidence in his or her own ability to adapt to internet finance (i.e., ways of perform tasks with internet finance). User's self-efficacy is considered as a crucial internal factor that can enhance feelings of control [11] since whether difficulties of internet finance will be viewed as challenges to be mastered or threats to be avoided depending highly on it [28]. Users with a high level of self-efficacy are likely to have stronger capability to deal with the problems and difficulties of internet finance despite their various requirements. However, users with a low level of self-efficacy feel discouraged and may be more inclined to resist the virtualization because of their requirements of internet finance. Moreover, perceived risks will also be more manageable for users with high self-efficacy. Thus we propose both direct and indirect influence of self-efficacy on user resistance to internet finance:

- H7a. Self-efficacy will negatively influence user's resistance to internet finance.
- H7b. Self-efficacy will weaken the influence of sensory requirement on user's resistance to internet finance.
- H7c. Self-efficacy will weaken the influence of relationship requirement on user's resistance to internet finance.
- H7d. Self-efficacy will weaken the influence of synchronism requirement on user's resistance to internet finance.
- H7e. Self-efficacy will weaken the influence of identification and control requirement on user's resistance to internet finance.
- H7f. Self-efficacy will weaken the influence of perceived risk on user's resistance to internet finance.

4 Methodology

4.1 Research Design

To analyze the above research model, survey approach is chosen to collect data and empirically test the model. We will gather our data by asking informants who are familiar with conduct financial businesses, either through physical channels or internet finance, to complete the questionnaires. Measurement of all the constructs in our research model will be adopted and adapted from existing validated scales [1, 2, 26, 29].

4.2 Data Analysis

Partial least squares (PLS) is selected to evaluate the proposed model and hypotheses. It is suitable for assessing theories in the early development stages [30] and is appropriate for small to medium sample sizes [31].

5 Potential Contribution and Future Work

Based on process virtualization theory and user resistance literature, this study serves as an initial attempt to investigate the factors that influence user resistance to internet finance. The potential theoretical contributions of this study are mainly made to user resistance literature. As seldom studies investigate user resistance at individual level in discretionary settings, we apply process virtualization theory framework to an internet finance setting and introduce perceived risk as additional process characteristic, perceived critical mass as external influence and self-efficacy as internal influence of user.

This study has potential practical implications as well. It provides explanations of why users resist to internet finance in spite of all the advantages it provides. It could be used to derive recommendations for overcoming some implement problems of internet finance services.

However, this study has some limitations. It presents a relatively simplified picture of the complex phenomenon of user resistance. In future research, we can take the service quality into account to develop further understanding. Moreover, we can go beyond internet finance and probe into the influences of those factors on other IT-enabled virtualization.

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