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SYSTEM DESIGN FOR IDENTIFICATION IN VIRTUAL COMMUNITIES

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Abstract

Identification has been demonstrated as an important factor for all kinds of pro-social behavior in a collective in general and virtual communities in particular. However, most prior virtual community research takes identification as given without addressing its formation. This study draws upon social identity theory and self-categorization theory to develop a theory for virtual community identification. More particularly, the conceptualization of virtual community identity is developed and accordingly, community presentation, i.e., system design features for presenting a virtual community identity, is hypothesized to facilitate identification by setting the boundaries for inter-group comparison and highlighting the in-group homogeneity. Furthermore, system design features that prior research identified as determinants for communicating personal identities, i.e., self-presentation, deep profiling, and co-presence, are argued to also have impacts on identification directly by influencing social comparison and indirectly by making the virtual community identity attractive. The implications of these results for both theory and practice are discussed.

Keywords: Social-technical approach, human behavior, identification

1 INTRODUCTION

Identification, an important identity process reflecting influences exerted from the collective, has been demonstrated to be a critical factor in predicting pro-social behavior in general, and community participation in particular [7]. Identification means that the individual defines him/herself in terms of the membership in the group. The resulting perceptions of oneness with or belongingness of the group provide a more autonomous motivation resulting not only in a higher quality of engagement (e.g., greater persistence, effort, etc.) but also in more positive experiences such as enjoyment, sense of purpose, and well-being [63]. Numerous empirical evidence has shown that identification with an organization or a group, either physical or virtual, enhances cooperative behavior [24], commitment [35], VC participation [23], knowledge contribution [44], customer extra role behavior [1] and organizational citizenship behavior [72]. Moreover, adoption of certain social exchange forms and social norms is contingent upon the individual's identification with the group [20, 33].

Despite the importance of identification, very few studies have investigated its formation in virtual communities (VC). To date, most research on this topic has been done in the context of formal organizations, e.g., [10, 11, 24, 25] and focuses on theoretical development, providing little empirical evidence [35]. Even though a few studies have explored the notion of identification with physical communities, the basis for identification arises from the geographical proximity, e.g., [59], and/or members' relational connection [18], which may not be applicable in the contexts of VCs where strangers communicate in a distributed environment. We still lack the understanding about how identification with a VC develops in general, and the impacts of IT artifacts in particular.

Thus, this study is aimed to develop a theory for identification formation in VCs. More particularly, this study develops the conceptualization of VC identity and proposes the system design determinants for VC identification. Community presentation, i.e., system design features for presenting a virtual community identity, is hypothesized to facilitate identification by setting the boundaries for intergroup comparison and highlighting the in-group homogeneity. Furthermore, system design features that prior research identified for individuality expression and communication, i.e., self-presentation, deep

profiling, and virtual co-presence, are argued to also have impacts on identification directly by influencing social comparison, and indirectly by making the virtual community identity attractive.

Different from the traditional identification research that only emphasizes on the influences from the collective, the resulting model incorporates both the collective influence and the role of individuality. Besides the contribution to identification literature in general, the resulting model entails several implications for IS literature. Firstly, a conceptualization of IT artifacts from identity perspective is proposed to provide a more comprehensive view towards VC system design. Secondly, by examining the effects of IT artifacts on identification, an important factor for explaining individual behavior in VCs, this research also advances the theoretical underpinning of system design for VCs. In addition to the theoretical implications, the resulting model is expected to provide valuable guidelines for VC designers and managers to use IT artifacts for identification development among VC members.

The article is structured as follows. First, prior research on identification is reviewed. This is followed by the theoretical development, where the research model is discussed and propositions are developed. Finally the important implications and promising future research directions are discussed.

2 LITERATURE REVIEW ON IDENTIFICATION

2.1 Social Identity and Self-categorization Theory

Traditionally, research on identification has been dominant with the perspective of social identity theory and self-categorization theory [9]. Following social identity theory, self-concept or "the totality of self-descriptions and self-evaluations subjectively available to an individual" [40, p24] encompasses two conceptual distinctive parts: 1) personal identities based on idiosyncratic characteristics, e.g., personality traits, and 2) social identities derived from salient group classifications [68]. Self-categorization theory is proposed by Turner [70] and his colleagues [71] as an extension of social identity theory. Self-categorization or social categorization of self is a cognitive process whereby self is assimilated to the in-group prototype and depersonalizes self-conception, i.e., self is no longer represented as 'unique individual' but as embodiments of the relevant prototype.

Once identified with a social category, the individual tends to define him- or herself in terms of the defining features of the social category which renders the self stereotypically "interchangeable" with other group members, and stereotypically distinct from outsiders. Accordingly, Ashforth and Mael [6] define identification as the "perception of oneness with or belongingness" to the social category; Dutton et al. [25] consider identification as "a cognitive connection between the definition of an organization and the definition a person applies to him- or herself." Later, Ellemers et al. [27] propose that one's social identification comprises three components: 1) a cognitive component or self-categorization, referring to a cognitive awareness of one's membership in a social group; 2) an evaluative component or group self-esteem, referring to a positive and negative value connotation attached to this group membership; and 3) an emotional component or affective commitment, referring to a sense of emotional involvement with the group. Prior research has demonstrated the construct validity for this three-dimensional conceptualization [27].

It is necessary to note that some studies consider identification as a cognitive state of self-categorization, while others define it as the process of comparison of personal attributes with organization attributes. However, it is important to differentiate identification as a cognitive state from its antecedents and effects, as the comparison processes may not be the only antecedents for the development of self-categorization [9]. Hence, in this research I use identification to refer to the cognitive state, while the term "identification process" will be used for the related identity processes. Moreover, the literature on identification formation tends to differentiate social identity salience and strength of identification [9]. Strength of identification is an enduring association between an individual's sense of self and his or her identity, whereas identity salience is the momentary activation of a particular social identity. Since the main purpose of VC design and management is to obtain the long-term commitment from individual members, a strong and enduring association is preferred. In this study, therefore, identification is restricted to the enduring cognitive state of self-categorization.

As suggested by the self-categorization theory, identification stems from a member's assessments of the fit between his or her categorizations of the organization, i.e., perceived organizational identity [25], and his or her self-categorization [35]. An organizational identity is shaped by the organization's

goals, missions, structure, practices, values and action that are central to the organization, distinctive from other organizations, and relatively enduring over time [64]. The perception of organizational identity helps individuals understand the question: "What does this organization stands for?" An organizational identity is perceived as attractive when it satisfies one or more self-definitional needs, i.e., self-continuity, self-distinctiveness, and self-enhancement [25]. Then the attractiveness of the perceived identity leads to stronger organizational identification.

2.2 Individuality in Identification Formation

Readings of social identity theory and self-categorization theory have led researchers to draw the conclusion that identification will necessarily lead to depersonalization and interchangeability of individual group members and ultimately lead to increased perceptions of cohesion. This idea is implicit in the interpersonal-intergroup continuum, which treats personal identity and social identity as polar opposites [53]. Most prior research on identification typically considers individuals and groups as representatives of antagonistic forces, that is, the expression of personal identity as being mutually exclusive with developing strong social identification, e.g., [47, 55].

Such a social deterministic view neglects the facts that the collective typically benefits from heterogeneity and individual creativity, as illustrated by the classic community where solidarity co-exists with a successful division of labor [67]. Actually, individuality and personal identity expression have been recognized as an important component in many collective actions. For instance, the explicit expression of personal identities of employees is argued to counteract the negative consequences of superordinate identities [54]. Rich evidence has been documented to support the positive roles of recognition for individuality as an important mechanism to elevate desired behaviors (e.g., participation) and create favorable social consequences for the contributor (e.g., high self-esteem) [15, 32].

Only recently, some researchers start to reconcile the tension between individuality expression and identification development. For instance, Postmes et al. [57] argue that group identity can be constructed from the bottom up and ultimately inferred from expressions of individuality, which is

labeled as “inductive identification” in contrast to “deduced identification” resulting from depersonalization. Some researchers explain the positive role of individuality in identification from group culture perspective. When the group culture is characterized with individualistic (e.g., VCs), individuality expression is actually an indication for being “stereotype” [37]. Moreover, social identity theorists suggest that identification with a social group is mainly derived from the group’s ability to fulfill its members’ needs. As need to balance belong with and the need to be different are two basic needs for individuals in a group [42], individuality expression is an integral part in deriving identification.

3 THEORETICAL DEVELOPMENT

Prior research suggests two sources for identification formation, i.e., collective identity and individuality. In the context of VCs, both of them are enabled through IT artifacts. Therefore, we categorize IT artifacts in VCs into two groups, i.e., IT artifacts used for expressing the collective identity and those for expressing individuality. Accordingly, two categories of antecedents for VC identification are identified, as indicated in Figure 1. The first category, i.e., attractiveness and community presentation, are derived from the traditional view of social identity theories emphasizing the influences from the collective. While community presentation highlights the comparative fit by setting the boundary of a VC; attractiveness of perceived VC identity indicates the normative fit resulting from the comparison between a member’s self-concept and his/her perceived VC identity. Also community presentation increases the salience of VC identity, making identification more likely. The second category of antecedents includes IT artifacts facilitating individuality expression, i.e., virtual co-presence, self-presentation and deep profiling [49]. According to the recent research on the effect of individuality in identification, they are postulated to have positive direct effects on identification as well. In addition to the direct effect, they may also affect identification by making VC identity more attractive. The following discussion will provide the conceptualization of VC identity and develop propositions for identification formation in VCs. To make the research model complete, we also add the link between identification and VC participation. Due to the large variety of

VCs and inconsistent conceptualization of VC, an overview of VCs and the target category of VCs in this research will be presented first.

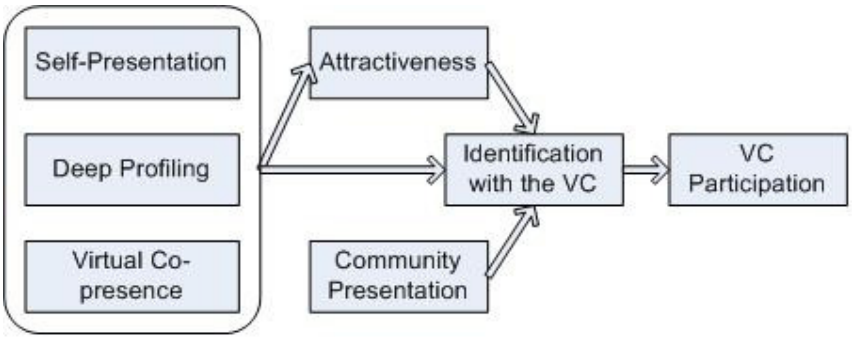

Figure 1: Research Model

3.1 VC Identification

Similar to organizational identification, this study defines VC identification as one's conception of self in terms of the defining features of the VC that renders the self depersonalized, i.e., stereotypically "interchangeable" with other group members, and stereotypically distinct from outsiders (cf., [7]). More particularly, this study focuses mainly on the emotional aspect of identification, i.e., the emotional significance that the members attach to their membership in that community [72]. Such an emotional identification, also characterized as affective commitment [2], has been shown to most clearly "supply the motivational force" leading to action or the "readiness to engage in or disengage from interaction", [9, p563].

The prior research has documented much evidence that identification with an organizations or a group, either physical or virtual, enhances cooperative behavior [24], commitment [35], VC participation [23], knowledge contribution [44], customer extra role behavior [1] and organizational citizenship behavior [72]. Thus, consistent with the prior research, it is hypothesized that:

Proposition 1: the member with strong identification with a VC will be more likely to participate in VC discussion.

According to Postmes et al. [57], identification can be either deduced from the collective identity or constructed from social interaction among members. In the prior section, the existence of VC

identities was demonstrated from which individual members can derive identification. Meanwhile, in the context VC where people enjoy more freedom of speech and individuality is usually advocated as a part of VC culture, identification may also be developed and constructed through rich expression of personal identities or individuality. For both paths, IT artifacts play a central role in presenting and communicating identities, and supporting social spaces. Thus, built upon the prior research on identification and human-computer interaction, two categories of factors for VC identification are proposed with an emphasis on the effects of IT artifacts.

Factors for Deduced Identification

Deduced identification reflects social influences from the collective. How members evaluate a VC identity [25] and how the VC identity is presented to make it salient for the basis of self-categorization [11] are two important factors to make this process occur.

Organizational identification literature suggests that an ongoing identity comparison process influences member attitudes toward the organization [35], whereby members assess the degree to which their perceptions of the organizational identity are congruent with their self-identities [25]. Perceived organizational identity conceptualized as an individual-level construct refers to the beliefs of a particular individual organizational member and serves as a powerful influence on the degree to which the member identifies with the organization [24 25]. While perceived organizational identity may be highly correlated with organizational identity --- an organizational-level construct --- the two constructs are conceptually distinct. Moreover, due to the fact that it is always difficult to perfectly socialize members to a collective view, what are perceived by particular members as central, distinct and enduring attributes may not be consistent with what managers want to convey. A perceived organizational identity is viewed as attractive when it fulfills the needs for self-continuity, self-distinctiveness, and self-enhancement, and the attractiveness of this image leads to strong organizational identification [24].

In the context of VCs, the communication of VC identities is less controllable than that in an organization due to the informal organization and voluntary participation. Members have full flexibility in choosing topics, discussion boards, and partners for interaction. Consequently, imperfect

socialization may be more salient and members may vary significantly in the evaluation of VC identities. Despite the differences, members join VCs to fulfill similar needs, e.g., understanding and deepening salient aspects of one's self through social interaction [23], and seeking self-esteem [8]. As with perceived organizational identity, members assess the attractiveness of the perceived VC identity by how well this image helps maintain the continuity of self-concepts, provides distinctiveness, and enhances self-esteem. To the extent that the perception of VC identities is correspondent with the members' goals and values, i.e., attractiveness of perceived VC identities increases, they are more likely to develop identification with the VC.

Proposition 2: The attractiveness of the member's perceived VC identity is positively associated with the member's strength of VC identification.

Individuals self-categorize on the basis of any of available social identities, which is rather a spontaneous and often unconscious process. According to social identity theories, identity salience, or the extent to which specific identity information dominates a person's working memory, is a key determinant of identification [41]. It is argued that when features of social context serve to make a given social identity salient, the associated process of self-stereotyping has the capacity to consensualize beliefs within a given in-group by 1) enhancing the perceived homogeneity of that in-group; 2) generating associated expectations of agreement with other group members on issues relevant to the shared identity; and 3) producing pressure to actively reach consensus in dealing with those issues through mutual influence [39, 52, 67, 69]. In particular, when a VC identity is salient, it is likely to increase members' tendency to focus and elaborate on the VC identity over the other competing identities. Therefore, the likelihood of their identification with the VC is higher.

Identity salience is most often elicited by external factors [34]. Prior research has investigated various contextual factors, e.g., group symbols [19], priming [22], visible differences in dress or physical arrangement of members [36], visual images and words [3] and direct intergroup contact [62]. In the context of VCs, however, these contextual factors are mainly integrated into the design of VC websites. VC designers and managers have to rely on IT artifacts to establish the VC as a viable and meaningful social category in members' minds.

In this research, Community Presentation is proposed to denote VC design features that present constituents of VC identities, which include logos and symbols, the statement of purposes, membership policies, community initiatives and promotion, presentation of management teams, interaction states of the VC, demographic features (e.g., size, active members, postings and etc.), unique interface design, and unique functionality design. All these features make VC boundaries visible and help members answer the question, "What does this VC stand for?" Community presentation, therefore, reflects the efforts of VC designers and managers to establish the VC identities as stable, significant and a salient target for identification. To the extent that more constituents of VC identities are conferred on the VC, the VC becomes a more salient target for identification, and this is especially relevant in VCs that are purely online where perceived legitimacy is often lowest [31]. Thus, it is hypothesized that:

Proposition 3: When community presentation includes more constituents of VC identities, members are more likely to identify with the VC.

Individuality Expression and Identification

Apart from community presentation highlighting intergroup differences and intragroup homogeneity, IT artifacts are also designed for individuation with emphasis on inter-personal difference and diversity. Ma [49] has identified four categories of VC features, i.e., virtual co-presence, persistent labeling, self-presentation, and deep profiling, which are argued to enhance accountability and perspective taking and consequently facilitate identity confirmation. Although some theories following the antagonistic view, that is, the expression of personal identity is mutually exclusive with developing strong social identification, might argue for negative effects of such features on identification, e.g., [47, 55]. The deterministic nature of this relationship has been questioned recently by findings from different research paradigms ([65]; see [66] for an overview). As reviewed, several theories have been proposed to reconcile individuality in group formation and identification, e.g., [16, 38, 57] and suggest that group formation is facilitated to the extent that it is compatible with the expression of individuality. Thus, the same VC features initially identified as facilitating individual

identity expression and confirmation may also have positive impacts on identification, an important indicator for group formation.

Virtual Co-presence refers to artifacts that provide a sense of being together with other people in a shared virtual environment (e.g., the 'who is online' feature). By making individuality expression observed and perceived, virtual co-presence is considered as a prerequisite for identity communication [49]. However, there is not only one implication for such features. According to the social presence theory, the development of a sense of presence implies mutual awareness, psychological involvement, and mutual understanding and is correlated with the feelings of immediacy and intimacy [13]. High social presence makes it more likely to build social relationships among members due to its capability to reduce discomfort, as well as increasing predictability and raising the level of affection toward others (cf. [73]) and increasing the possibility to develop attachment to the online community members. In addition, it is a well-known fact that the observation of in-group member actions gives rise to spontaneous inference of norms or conventions [5, 30, 56]. Features supporting the sense of presence make it easier for members to imitate each others' actions, to engage in peer pressure and to create, notice and conform to social conventions [28], thus reinforcing social identification. Accordingly, it is hypothesized that:

Proposition 4a: Usage of virtual co-presence features will be positively related to members' identification with the VC.

Self-presentation includes features used to convey personal identities. Features in this category include visual presentations, unique IDs, personal profiles, avatars, signature files and weblogs. Using self-presentation features makes members feel independent as they have a great control over what to present and how to present it. It also enables members to differentiate themselves from others. With various self-presentation features for individuation expression, VCs provide an attractive venue to balance the need to belong with the need to be different. Individuals empowered to express their personal identities will be more likely to develop strong identification [38]. In addition, self-presentation features make otherwise anonymous participants more recognizable, enhancing the likelihood of developing attachment and mutual obligation [14], which are affective components of

identification [23]. Finally, individuality-expression-enabled-self-presentation features may also facilitate inductive identification to occur [57]. Thus, it is hypothesized that:

Proposition 4b: Usage of self-presentation features will be positively related to members' identification with the VC.

Deep Profiling designates features that help to infer profiles of specific members from historical records. Member profiles can be built through both referential and inferential techniques. Some online communities provide search functions for retrieving the historical activity records of a particular member or of a particular discussion subject. More sophisticated designs incorporate content hit counters, ratings of contributions and participants (usually done by administrators) and peer evaluations [45], as well as displaying the value of contribution [60], oversight or review of the contribution [21]. Self-presentation can be considered as referential profiling, while deep profiling constitutes inferential profiling. Similar to self-presentation, deep profiling is another arena for individuality expression. By making activities and interaction history visible and accessible to others, deep profiling individuates each member as a unique member. Moreover, recognition of members' contribution has been demonstrated as a main factor for community commitment [43]. Accordingly, it is hypothesized that:

Proposition 4c: Usage of deep profiling features will be positively related to members' identification with the VC.

According to social identity theorists, identification with a social group is mainly derived from the group's ability to fulfill its members' needs [40]. Individuality expression and facilitation of social interaction are actually advocated as value propositions for most VCs [23], suggesting the ability to individuate members, in itself, a marker of shared identity or common in-group membership [50]. Based on a field survey of websites, Eighmey and McCord [26] conclude that efficiently executed design features can facilitate participants to fulfill various needs. For example, features enabling virtual co-presence cater to the needs for social interaction. Self-presentation and deep profiling features fulfill the needs for self-disclosure. Some of the self-presentation features, e.g., emoticons and avatars, also make the virtual interaction more enjoyable. The consonance between individuality

expression features and individual needs makes VC identities more attractive for members. Thus, it is also hypothesized that:

Proposition 5a: Usage of virtual co-presence features will be positively related to members' perceived attractiveness of VC identity.

Proposition 5b: Usage of self-presentation features will be positively related to members' perceived attractiveness of VC identity.

Proposition 5c: Usage of deep profiling features will be positively related to members' perceived attractiveness of VC identity.

4 CONCLUSION AND IMPLICATIONS

Although identification has been demonstrated as a significant determinant of participation, most prior research on VCs takes it for granted without investigating its formation. An important theoretical development in this research is the conceptualization of VC identity and the elucidation of the system design determinants for VC identification. Community presentation, i.e., system design features for presenting a virtual community identity, is hypothesized to facilitate identification by setting the boundaries for intergroup comparison and highlighting the in-group homogeneity. Furthermore, system design features that prior research identified for individuality expression, i.e., self-presentation, deep profiling, and virtual co-presence, are argued to also have impacts on identification directly by influencing social comparison and indirectly by making the virtual community identity attractive.

This study entails several important theoretical implications. First, this study represents the first attempt to explore the identification formation in VCs in general and the effects of IT artifacts in particular. Identification has been studied in many contexts, e.g., groups, organizations, communities, and more particularly VCs. Extant evidence shows identification as an important intervention for collective action. However, most prior research in organizational identification has focused on theoretical development, which has received little empirical testing. In the context of communities,

studies on identification have just started and many controversies still remain in several fundamental areas, such as the existence of community identities. In the IS field where VCs have received much interest, most prior studies take identification or theories developed in organizational contexts as given without exploring the specificity brought by IT artifacts. This study advances the theoretical work on identification by conceptualizing VC identities and developing a research model to explain identification formation in VCs; more particularly, the role of the system design for this process has been explored.

Different from the most prior studies on identification formation, this study accounts for influences from both the collective and the individuality, rather than emphasizes on the collective influences only. Currently, conflicting theories exist regarding the effects of individuality in identification and some moderators were suggested in the context of small groups. Based on several recent theoretical developments and VC characteristics (e.g., individualistic, informal and etc.), this study proposes a positive effect of individuality expression on identification. But we believe that the tension between individuality and identification in VCs is worth much inquiry and both empirical and theoretical research is needed along this direction.

Moreover, this study extends the conceptualization of IT artifacts in VC contexts from the perspective of identity communication. Currently, we have witnessed an obvious trend of integration in many kinds of information system design, suggesting typologies of IT artifacts need to be developed to provide a complete understanding of system design. Using "personal vs. collective identities" as a framework, the new conceptualization articulates the various IT artifacts in VCs used for presenting and communicating VC identities and personal identities.

The new construct proposed in this study, community presentation, also has important theoretical implications. Most prior VC research takes an individual member's perspective emphasizing the member-sustained aspect of VC sustaining, neglecting the management aspect. In practice, however, VC designers and managers are actively involved in launching, sustaining, promoting and even commercializing VCs. Their efforts are reflected through the system design and should be considered

as integral in understanding VC-related phenomenon. This study represents the initial effort to conceptualize the system design from the management perspective.

The propositions developed in this paper also provide valuable practical guidance for VC design and management. First our model suggests multiple IT artifacts that VC designers and managers can employ to enhance identification among VC members. In addition, by elaborating the theoretical underpinning of the effects of system design, the model can also guide the development of new features. However, we have to acknowledge that as a theoretical work, this model requires further empirical testing in real VC settings to confirm its validity and predictability.

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