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ABSTRACT

Recently, the notion of fashion has been embraced and considered a useful paradigm of thinking to address challenges in HCI and sustainability. One of the suggested ways to learn from fashion is to make sustainability fashionable in order to increase uptake, interactivity, and proliferation of sustainability initiatives. This paper reports an exploratory study on the use of fashion-inspired ideas around the use of interactive technologies as a strategy to augment social participation in sustainability. Through an interpretive case study of an urban agriculture community in Indonesia, the paper illuminates the potential of using fashion thinking as a lens to examine techno-cultural aspects of human behavior. Implications of the study findings on the design, evaluation, and implementation of interactive systems in organizational and cultural contexts are also discussed.

Keywords

Fashion thinking, social participation, sustainability, urban agriculture, social technologies.

INTRODUCTION

Environmental sustainability has increasingly been an important area of concerns in IS community due to the transformative power of information systems in creating a sustainable society (Watson, Boudreau and Chen, 2010). While traditionally situated in a business and managerial setting, the field of HCI in MIS is also concerned with human use of information, technologies, and task in organizational and cultural contexts (Zhang, Benbasat, Carey, Davis, Galletta and Strong, 2002). This indicates an opportunity to investigate the design, evaluation, and implementation of interactive systems in a socio-cultural context that can contribute to an ecologically sustainable society.

Dourish (2010) argues interactive technologies should connect people *through* their actions in addition to connecting people *to* their actions. Thus, technologies are viewed as tools to exemplify "a broader coalition of concerned citizens, social groups, and organizations (p.7)." These ideas invoke the importance of social participation in sustainability. The increase of social participation is considered a positive attitude towards an ecologically sustainable society. In order to increase participation, both qualitatively (in interaction) and quantitatively (in numbers), a deliberate strategy involving computing systems is required. Hochheiser and Shneiderman (2010) denote that interactive technologies such as Web 2.0 applications can yield accumulative power in form of people, computation, communication, and action in the context of technology-mediated social participation. Yet, little has been understood on how such technologies are appropriated and embedded through a strategy which aims to increase social participation.

Recently, the notion of fashion has been embraced and considered a useful paradigm of thinking to address challenges in HCI and sustainability (Pan, Roedl, Thomas and Blevis, 2012). Fashion thinking is not only useful to inspire material designs, but also interaction designs of technologies both at the individual and social level. Pan and Blevis (2014) suggest two ways to incorporate fashion thinking into HCI and sustainability: "making sustainability fashionable" or "making fashion promote sustainability." They argue not all sustainability practices can be made fashionable, thus favoring the latter point of view. Nevertheless, they call for further empirical studies in understanding how the principles of fashion materialize in the design of interactive systems for sustainability.

This paper reports an exploratory study on the use of fashion-inspired ideas around the use of interactive technologies as a strategy to augment social participation in sustainability. Specifically, the paper aims to address the question on "*how does fashion thinking inspire the augmentation of social participation in an urban-based sustainability initiative through interactive technologies?*" Fashion here is understood as a positive force for change beyond the traditional meaning of urban consumptive behavior. In particular, the benefits of fashion are derived from the adoption and projection of positive self-image that connotes with fashion (Kawamura, 2004).

The reported study is situated in the context of urban agriculture community in Indonesia. Using an interpretive case study involving online and fieldwork data collection, the paper illustrates a number of themes that underline the potential of using fashion thinking as a strategy to increase participation in sustainability initiatives. It also discusses the implications of adapting fashion thinking as a lens to examine human use of technologies in organizational and cultural contexts. The remainder of the paper is structured as follows. Following the introduction, a review of related literature is presented. Next, the research methodology is described followed by preliminary results of the study. Finally, the paper concludes with discussion and implications of the study findings.

REVIEW OF RELEVANT LITERATURE

Urban Agriculture and Sustainability

Urban agriculture can be defined as practicing agriculture within city boundaries in order to cater for urban populations (Smit, Ratta and Nasr, 2001). It is considered a part of rejuvenated sustainable food practices that are emerging in various parts of the world (Blevis and Morse, 2009). The activities commonly practiced in an urban agriculture community include growing food in community gardens and backyard, sharing information on growing practices, commercialization of yields, and relaxation and friend-making (Lyle, Choi and Foth, 2013; Zhang, Brereton and Roe, 2013). The distinction between urban and rural practices of agriculture can be appointed to the integration of economic production and consumption which is evident in an urban setting. Urban agriculture practices in developing and developed countries are generally perceived as being quite different (Pearson, Pearson and Pearson, 2010). The former has been predominantly triggered by food security whereas the latter tends to be more recreational.

Urban farms have been a subject of exploration for design opportunities in HCI and sustainability. Prior studies seem to coincide that technology is rarely used in the actual growing practice (e.g. Heitlinger, Bryan-Kinns and Jefferies, 2013; Odom, 2010). Instead, technologies such as Web 2.0 applications are mostly used in the management of the community such as in the event of coordination, communication, planning, and knowledge sharing (Avram, 2013).

Fashion as a Concept

Fashion studies demonstrate that the meaning of fashion has changed throughout history according to social customs and social structure at the time (Kawamura, 2004). Early studies on fashion generally view fashion as driven by imitation and distinction between upper and lower social classes (Simmel, 1957). Recent studies, however, report a shift towards fashion as a democratized cultural practice (Crane, 1999). It is now understood as a desire to project self-image and communicate personal taste and choices of lifestyle to the public. Drawing from Pan and Blevis (2014), fashion in this paper is broadly defined as an expression of taste and beliefs that is characterized by aesthetic, symbolic, and cultural meanings. This implies understandings of fashion beyond a product line such as clothing or technological gadgets. Fashion is located in the imagination of the individuals involved which implies additional value on top of basic utility functions of a certain product or practice (Kawamura, 2004).

Fashion Thinking and Sustainable HCI

There have been a few studies integrating work between fashion thinking and sustainability in HCI. In their paper, Pan and Blevis (2014) suggest key insights that can be learned from fashion thinking and their implications to sustainable interaction design. There are six critical design issues as implicated by fashion concepts which are (i) fashion as an adaptation to changing conditions, (ii) fashion in social communication and community practices, (iii) fashion in visual appearance and build quality, (iv) fashion in form of vintage designs, (v) fashion for self-expression and personalization, and (vi) fashion as inspired by a wide range of phenomenon. The above issues deal with the implication of fashion in the design of interactive technologies. Of particular relevance to this study is the use of technology and fashion thinking in communication and community practices. They argue that fashion thinking is especially useful to shape social norms through social communication.

Fashion-making is regarded as a purposeful decision taking place collectively within a system of institutions. Using the clothing industry as an example, Kawamura (2004) explains that the process of "creating" fashion includes the role of designers, advertisers, celebrities, journalists, distributors, and consumers. Crane (1999) asserts the diffusion models of fashion can be divided between top-down and bottom-up. The top-down model implies a "trickle-down effect" from a higher to lower class which has seen a replacement by the bottom-up model that emphasizes a decentralized view of fashion innovation. She further denotes that diffusion models of fashion are useful to understand a wave of changes over time in the uptake of fashionable practices or items. In the field of management, fashion has been understood and theorized as a form of social production of culture which is based on the norms of rationality and progress (Abrahamson, 1996).

METHODOLOGY

The reported study is part of a larger doctoral project which seeks to understand the role of social technologies in the undertaking of urban-based sustainability initiatives. The project is particularly interested in examining the ways interactive systems can contribute to the resilience of the community. Fashion thinking is used as a lens to understand how technology-mediated social participation can be augmented in terms of its uptake, improved interaction, and proliferation. Thus, the fashion

object in this study is the social participation in urban agriculture as facilitated by technologies.

An interpretive case study is selected as the research method in light of gaining in-depth understanding of the phenomena from the perspectives of the subjects involved (Darke, Shanks and Broadbent, 1998). A large urban farming community group in Indonesia, namely Indonesia Berkebun (Indonesia Urban Farming), is selected as the case study. Several data collection techniques were employed including online content analysis, participant observation, semi-structured interviews, and focus groups. Online content analysis is conducted as part of virtual ethnography to shed some light on online interaction and cultural practices of the studied community. Participant observation includes weekly visit to the community farms and events such as workshops and gatherings on food-growing practices. Field notes were also prepared and used in the observation. Further, interviews were conducted in an informal setting involving leaders, founders, volunteers, and members of the community. Focus groups were also conducted to seek feedback and confront opinions from a diverse range of community members.

A preliminary stage of data collection has been completed which includes online content analysis of the community's Twitter-facilitated interaction, four 30-60 minute interviews with leaders, three full-day sessions of observation, and one 45-minute focus group. Interview and focus group were recorded and transcribed before analyzed using NVivo, a standard software for qualitative data analysis. In analyzing the data, thematic analysis was used to discover central themes of the data. The initial coding was developed and refined using open coding techniques and the resulting codes were grouped into themes as presented in the paper's findings. The emerging themes serve as a basis for further axial and theoretical coding (Strauss and Corbin, 1990) that will lead to building a model to explain the studied phenomena. A rule-guided qualitative content analysis was used in interpreting meaning from Twitter data.

THE CASE STUDY

Indonesia Berkebun (Indonesia Urban Farming) is a community group that promotes, encourages, conducts, and supports urban agriculture practices across cities in Indonesia. It was originally started as a social movement in October 2010 and initiated by a handful of people with diverse backgrounds ranging from urban planners to housewives. The primary motive of its foundation is to contribute to solving problems of sustainability in three areas; economic, educational, and ecological. Through urban agriculture, it aims to build food resilience by making food supply to urban dwellers healthier and more reliable at an affordable cost. It also aims to promote environmentally sustainable behaviors through educating urban residents on sustainable food systems.

Founded in Jakarta, the capital city of Indonesia, it has now established itself as a large community group with networked presence in 30 cities and 8 universities. Indonesia Berkebun (IB) can be regarded as an interest-driven voluntary association with strong links to geographical locations. Community members are connected both through online and offline interactions. They regularly hold events such as community gardening, workshops, exhibitions, and food markets in addition to home-farming which are run independently across cities. The distinct feature of this community group is its sheer use of social media for communication. The community has set up one official Twitter account and one Facebook page for every city that is part of its community networks.

PRELIMINARY FINDINGS

In analyzing the data, the focus of thematic analysis was on the fashion process (Kawamura, 2004) and construction of social norms through social communication using interactive technologies (Pan and Blevis, 2014). The resulting findings are described below.

Fashion Process

The inception of IB was marked by a citizen social movement that largely used Twitter for communication and coordination between founders and early adopters. A handful of founders with backgrounds ranging from architects to activists consciously setup a community-based movement which promoted urban farming out of desire to improve cities' ecological conditions. Interestingly, the brainstorming and promotion of the social movement had utilized online social networks based on Twitter, including propagation of content by local Twitter celebrities ("celeb-twit"). These celebrities' accounts had a massive number of followers and helped expand the community membership through retweet mechanisms. The above highlights the presence and role of fashion actors in a system of institutions. The founders in this case acted as designers of urban farming as a fashion object while the fashion consumers were the adopters of urban agriculture practice. Prior to the founding of the community, urban farming was not as highly celebrated in Indonesia. This indicates the expression of value in urban farming which found its wave through a fashion process.

Fashion-Making through Social Communication

Identities and desired identities

As a community, IB strongly shows a distinct identity as a cohesive, purposeful, and dedicated group that aims to promote a sustainable society through urban agriculture. It deliberately takes a championing role in promoting urban agriculture. Despite not the first, it currently is the largest and most popular urban agriculture community in the country. Initially scoped for Jakarta only, the community renamed itself with a country affiliation which made it resonate with a broader community base. "*I think we are now among the top 5 sustained community movements in*

the country which were founded using social media. We have used Twitter a lot … The agriculture minister has invited us once to his home to discuss [the prospects] with us (P2, interview)."

Additionally, the unified identity (and desired identities) of the community is also materialized into symbols, messages, and actions. It has been consistent in asserting a fashion statement on urban farming as the new urban lifestyle. The message is also projected consistently through communication in all social media platforms. This indicates a conscious decision to motivate the wider public to participate in the community through expression of beliefs and identities using technologies.

Visual representation in communication

Based on the online content analysis of Twitter data (Ardianto, Aarons and Burstein, 2014), images were the most dominant content in the communication. Of the 1170 tweets analysed, 67.69% of them includes images. These range from crops and innovative farming practices to event posters and group pictures. They were deliberately shared through Twitter to indulge fellow urban farmers and online enthusiasts with the joy of participating in urban agriculture. The use of Twitter, and not social networking sites specifically for photographs such as Instagram or Pinterest, for broadcasting images is a conscious decision. Twitter offers simpler interfaces and requires a relatively low effort to participate. The high number of Twitter users in Indonesia is also a factor in this case.

RT @MksrBerkebun: Much life :) "@User711: morning time is indeed the greatest time to get to tune with twitpic from contributors of @idberkebun @mksrberkebun" (tweet by @IDBerkebun, 29/05/14)

Complementarity of communication media

IB has heavily used social media to communicate with and reach out to broader community base. But its popularity is also contributed by the role of traditional media such as television, radio, and prints. In building a successful image of an in-fashion urban agriculture community, IB has benefited from continuing support and exposure from traditional media. One interviewee noted that despite the community's high penetration in social media, she learned about the community firstly from the television when there was a coverage on a community event. "*Contrary to some who learned about Indonesia Berkebun from social media, I first knew [the community] from television. I was sold by the idea of growing farms in urban spaces. I [then] looked for information about them online (P4, interview).*"

Diffusion of cultural beliefs and practices

Fashion is an act of public communication and expression of values and lifestyle choices. IB has consciously involved in diffusing its cultural beliefs and practices through its community networks across the country. Despite being run independently, the community networks in various cities in Indonesia adopt the same cultural practices resembling social cohesion as part of a larger community group. These practices include weekly gathering in local community gardens, celebration of harvesting events, and similar approach in encouraging participation through sharing stories and images on Twitter.

Don't forget to share stories & photos on web @IDberkebun www[dot]indonesiaberkebun[dot]org or link: http://t.co/m4EiDCvbwZ ok! :D (tweet by @IDBerkebun, 28/05/14)

Moreover, IB has used culturally-salient ways to engage with its community base. Occasionally, the administrators of IB official Twitter account, @IDBerkebun, use local, non-national language in their posting on Twitter to socialize with members and followers from other cities who have their own culture and traditions. These can be understood as a way to communicate with members without keeping a distance between them.

DISCUSSION AND IMPLICATIONS

The above findings show how fashion was embodied in concerted efforts to increase participation in urban agriculture. Specifically, fashion process was evident through the role of various fashion actors including designers, celebrities, and consumers who helped shape the beliefs and expression of urban farming as a positive attitude. Social technologies in this case acted as a medium to amplify, project, and diffuse the aesthetic, symbolic, and cultural meanings of urban agriculture to the public. Social norms on practicing urban agriculture were built through consistent communication using social media on issues such as identity, visual content in communication, complementarity of communication media, and diffusion of cultural beliefs. It is important to note that the fashion object lies not in the technology or cultural practice alone, but in the entanglement of both of them that together creates a perceived value of 'newness' and positive self-image. This is particularly supported by the fact that neither of urban agriculture or social technologies were new at the time, but the incarnation of both of them was.

The relevance of fashion thinking in augmenting social participation in an urban-based sustainability initiative has at least two potential implications. First, fashion thinking can be used as a lens to examine human behavior and the use of technology, but we need to better understand how the fashion process unfolds in a context where technology and cultural practice both constitute the object of fashion. In management studies, Abrahamson (1996) postulates that fashion process occurs through a linear stage of creation, selection, processing, and dissemination. In this theory, the fashion object is management techniques and the adoption of such management fashions is founded under the norms of rationality and progress. This significantly differs from adoption of fashion that is characterized by techno-cultural practice. Thus, we need

to incorporate theories of fashion that address both the rational and cultural aspects of human behavior. Second, if we are to apply fashion as a strategy to increase social participation, we need to understand the lifecycle nature of fashion and how interventions can be designed and introduced at an appropriate time to bring about the goals of fashion as strategy. It is also imperative to clarify whether the goal of fashion-making is an increase in the participation level or the sustainment of techno-cultural ideology behind the participation.

In summary, the present study has shown the potential of using fashion thinking as a lens to examine techno-cultural aspects of human behavior. However, more conceptualization is needed to effectively apply fashion thinking in the domain of HCI/MIS particularly in the design, evaluation, and implementation of interactive systems in an organizational context. While drawing from a case study on urban agriculture, the insights from this study can be used to instigate a broader application of fashion thinking in a managerial and organizational context.

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