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BUILDING LEGITIMACY FOR GREEN IS INNOVATIONS IN TAIWAN

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Abstract

The environmental concerns are leading to the growing interest in the adoption of Green IS. From legitimacy perspective, this paper argues that the adoption and diffusion of Green IS among organizations are modulated by pragmatic, normative, and cultural-cognitive influences in the institutional environment. The study therefore applies topology of legitimacy to develop a taxonomy to understand actors' strategies in shaping the understanding and development of Green IS. Using content analysis of news articles in Taiwan, the study contributes to a practical understanding of the complex institutional influences in forming the greener industry.

Keywords: Green IS/IT, Legitimacy, IS innovation, Content Analysis

1 INTRODUCTION

Green IS is one of the latest manifestations in the field of sustainable business practices. In 2011, the United Nations Environment Programs (UNEP) launched a new program named "Global Green New Deal". The IS discipline also began to pay more attention to the Green IS phenomenon from 2008 with the increasing numbers of publication on this particular topics (Brooks et al. 2012). In this research, we consider Green IS as an innovation. In analyzing the innovation diffusion, IT innovation research found that innovation diffusion is influenced by a variety of actors in the industry (Rao et al, 2008, Kaganeret al. ,2010; Geels & Verhees, 2011; Ou Yang & Hsu, 2011). From a similar perspective, we argue that Green IS is not only the matter of what benefit it can bring and what organizations should do to catch the trend, but also about how relevant organizations develop the shared norms, values and beliefs in the diffusion process.

In this research, our main question is "How Green IS is legitimized in Taiwan?" As discussed above, we want to understand how Green IS, as an innovation, diffuses in the industry, using an integrated view of institutional legitimacy perspective. To this end, we build on and seek to extend the framework of legitimacy to offer a fresh and insightful lens for studying these dynamics. The framework of legitimacy serves as a foundation to indicate both the ways in which legitimacy acts like a manipulable resource and the ways in which it acts like a taken-for-granted belief system (Suchman, 1995). The two aspects together facilitate and shape diffusion of innovations among organizations. By observing the formation and change of this discourse shaping organizations and legitimizing organizational actions, we can examine how closely institutional logic influences the social construction and diffusion of Green IS innovation.

The organization of the paper is as follows. Section 2 will review and discuss the existing literature in Green IS, which is followed by the introduction of theoretical framework in Section 3. We will then present our research methodology in Section 4 and the preliminary analysis of results in Section 5. We conclude with the expected contributions in Section 6.

2 LITERATURE REVIEW

Much Green IS related research has been focusing on the benefit and strategies of implementing Green IT/IS initiatives (Erek et al., 2011; Iacobelli et al., 2010; Mithas,et al., 2010). Sayeed and Gill (2009) suggested organizations leverage Green IT implementation for strategic purposes by mobilizing dynamic resources; Molla (2009) mapped a Green IT-reach-richness matrix to classify Green IT strategies and initiatives; Weiss (2009) studied the collaboration between IT and other business units at UPS to implement sustainable initiatives; and Erek et al. (2011) stated that sustainability-related innovations can create new markets and enable differentiation while an improved firm reputation can increase the demand for products and services. According to Brooks et al.'s (2012), their finding indicates that literatures between 2007 and 2010 primarily focused on the benefit and strategic approaches of implementing Green IS. These studies are rooted in the rational-actor decision models and focuses on the organization as the main unit of analysis. Most studies are predicated on the idea that adopters make independent rational decisions directed by the goals of technical efficiency, few studies address the dynamic institutional context, as well as the cultural norms, symbols, beliefs and rituals in the environment the Green IS/IT innovations are situated.

Butler and Daly (2009) is first to see Green IT/IS from an institutional perspective. They develop 8 propositions of Green IT in terms of regulative, normative and cultural-cognitive influences in the institutional environment respectively. They argue that business and organization are more likely to introduce environmental responsible programs, if Green IT is institutionalized through industry standards, at the meantime, monitored and reported by independent non-government organizations such as the press, and self-regulated industry associations. These propositions provide some insights for the underdeveloped institutional environment of Green IS/IT. However, Butler and Daly (2009)'s work lack an empirical study to verify their arguments.

Besides, Fradley et al. (2012) is another work adopted an institutional approach. They use the organizing vision perspective to study Green IS development by exploring how institutional arrangements shape the nature of the collective action among heterogeneous actors. Although Fradley et al. (2012) have conducted an empirical study on organizational actors' interpretations concerning Green IT/IS development, they only focus on the diffusion of one specific Green IS, vessel management system (VMS), developed by the local regulator. Therefore, their study stressed more on the role of regulator and its interaction of other stakeholders. The Green IS/IT discourses generated from multi-level and by multi-stakeholder on a broader scope, i.e. the press and society at large, still remain unclear. We argue that the concept of organizational legitimacy provides us a suitable theoretical apparatus to fill this gap. This theoretical angle facilitates us unfolding how the institutional logic, normative and cognitive forces, socially constructs rhetorical contexts to foster the diffusion of Green IS/IT innovations, as we explained below.

3   THEORETICAL MODEL

The topology of legitimacy stems from institutional theory, describing the "appropriate" actions of an entity under a socially constructed system of norms, values, beliefs, and definitions (Suchman, 1995). Legitimacy is socially constructed, meaning that the behaviors of the legitimated entity would be affected by the shared beliefs of some social groups (also called "audience"), which belong to the superordinate system it is in. Organizations pursue legitimacy because legitimacy can win them continuity, credibility, and support (Suchman, 1995). Lacking legitimacy, the ability of organizations to pursue their goals and accumulate resources is reduced (Dowling & Pfeffer, 1975; Suchman, 1995).

Suchman (1995) has developed a well-known topology of legitimacy: pragmatic legitimacy, moral legitimacy, cognitive legitimacy. The former two are grounded in the audience's evaluation, and the last one is grounded in the audience's taken-for-grantedness cognition. The forms of legitimacy are conceptualized at a high level of abstraction, therefore can accommodate a wide range of new practices, especially for integrated idea such as Green IS innovations. Legitimation strategies, on the other hand, encircle the ground-level efforts of practice entrepreneurs and need, therefore, to reflect particulars of the legitimation domain. Different types of legitimacy need to be pursued through different cultural means to ensure success of the legitimacy management efforts, Table 1 below summarizes the different legitimation mechanisms and relative strategies.

	Pragmatic Legitimacy	Moral Legitimacy	Cognitive Legitimacy
Concept	• based on audience self-interest. • whether an organization can get the support depends on whether it hits the audience's interest.	• based on normative approval • audience judge whether an activity is "the right thing to do."	• based on the general acceptance from the culture at large. • The question "why doing so" is taken-for-granted to the audience.
Strategy	• responding to needs • advertising product (persuading constituents to value it) • building alliances • building reputation • developing legitimacy by organizing collective marketing and lobbying efforts	• producing proper outcomes • embedding new practices in established institutions • offering symbolic displays, and proselytizing.	• mimicking most prominent and secure entities in the field • codifying informal procedures into formal operations • professionalizing operations • seeking certification • establishing and promoting new standards • developing knowledge by promoting activity through third-party actors

Table 1:   Forms of legitimacy and relative strategies

As discussed above, in this paper we consider that the legitimation process of Green IS is associated with different legitimacy strategies deployed by a variety of actors within Green IS industry. The industry commonly consists of "key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products" (DiMaggio & Powell, 1983). As institutional theories (DiMaggio & Powell, 1991) stressed, many dynamics in the organizational environment stem not from technological or material imperatives, but rather from cultural norms, symbols, beliefs, and rituals. At the core of this intellectual transformation lies the concept of organizational legitimacy (Suchman, 1995). The pragmatic, normative and cognitive forces can constrain, construct, and empower organizational actors. And the actors' forces push the diffusion of Green IS innovation, such as the governments making laws, the NGOs setting industry standards, the business publications promoting ideas, and even companies mimicking each other. All these legitimacy forces enhance the stability and the comprehensibility of organizational activities, resulting in the Green IS innovation being recognized and adopt by organizations.

In brief, the forms of legitimacy and legitimation strategies consist of the key building blocks in the development of the Green IS legitimation taxonomy. In the following, we will start to address the phenomenon of the operation and use of Green IS by the topology of legitimacy.

4 METHODOLOGY

4.1 Data Collection

We chose to analyze IT related news in Taiwan. We consider that the news records the activities of different actors, especially records the cultural norms, symbols, beliefs, and rituals that exist. By analysing unfolding the news, the legitimization process of Green IT innovations in Taiwan would be unfolded.

The source of data for the study was Business Next and Digitimes. They are two IT related news media in Taiwan. Business Next is the first largest brand of technology magazine in Taiwan, and also the leader of technology issue. Digitimes is the first Chinese technology industry daily newspaper, reporting news on electronics industry such as semiconductor, computer, and communications. Mastering the technology authoritative source of Taiwan and the Asia-Pacific, it is also one of the most important technology exchange platforms, having over seven million visitors monthly. We set the keywords "green", "sustainability" and "environment", or search under the tag of "green energy", to identify relevant articles. We look for news issued from 2007 through 2012, yielding a total of about 1000 unique articles.

4.2 Data Analysis

We use content analysis approach to carry out analysis of the news at three different stages: 1) pretest; 2) stage I analysis, and 3) stage II analysis. A team of two researchers conducted pre-tests before stage I and II.

In the pretest, the purpose is to refine the generic legitimation strategies and constructing a descriptive taxonomy of strategies for building legitimacy for Green IS innovations. First, our Green IT ligitimation taxonomy was drafted based on Kaganer et al. (2010)'s work. As the IT ligitimation taxonomy of Kargner et al. is focus on a specified IT system, different from the all-inclusive "Green IS", we also adopted Butler and Daly (2009)'s propositions of Green IT from an institutional perspective as a reference to revise our taxonomy. We selected 98 news articles from the database but excluded 31 irrelevant articles which are not related to Green IS. The two researchers discussed and revised the definition of each category along the pre-tests. We also calculated Cohen's Kappa value to see the level of inter-coder reliability. The taxonomy includes 8 types of pragmatic legitimacy strategy (e.g. explanation on efficiency, improvement of financial performance, and reputation benefit), 4 types of normative legitimacy strategy (e.g. congruence of Green IS with prevailing norms, and the

development of industry standards), and 5 types of cognitive legitimacy strategy (e.g. attitude of Green IS at society level, and mimic force of successful organizations).

In Stage I, we will use the Green IT legitimation taxonomy to code the entire data set of news. We expect to have a quantitative output to figure out the pattern of Green IS legitimacy process in Taiwan. Also we hope to see some other facts such as the important topics in Green IS field, and which actors are doing what.

Stage II would be more qualitative. We plan to further analyze the content of the news and study the interaction of the actors, to increase the richness of the legitimization process. In this way, we will have a more comprehensive and in-depth view of the legitimacy of Green IS innovation in Taiwan.

5   EARLY RESULTS OF PRETEST

In the pretest of 67 Green IS related news articles, we have 40.30% pragmatic legitimacy, 22.39% normative legitimacy and 37.31% cognitive legitimacy, as indicated in Figure 1. Looking at the subject areas, "data center" has 7 news talk about it, showing up mostly in cognitive legitimacy form (1 in pragmatic, 1 in normative, 5 in cognitive). The second most frequent-appear subjects are "Green building" and "digital home" (or "smart grid"), 3 news each, mostly appear in pragmatic legitimacy form. Other subjects includes many forums/seminars and policies, all kinds of energy-saving products, charging device, LED light, smart car (and its charging) system, Green supply chain, etc. These will be discussed further in the complete paper as sub-themes in stage II analysis. Also, about the actors, the NGO, GreenPeace, appears a lot (3 out of 5) in strategy "Monitor", and usually show up with an industry report, indicating that it plays an important role in monitoring the society. This discovery is coherence with Butler and Daly's (2009) work. Some other frequent-appear actors are organizations of UN and some professional agencies. Taiwanese government do not appear that much, hinting that the regulatory forces are relatively low in Taiwan, compared with Butler and Daly's (2009) description on Green legislation of other countries in the world. We will try to calculate specific statistical numbers in the final work.
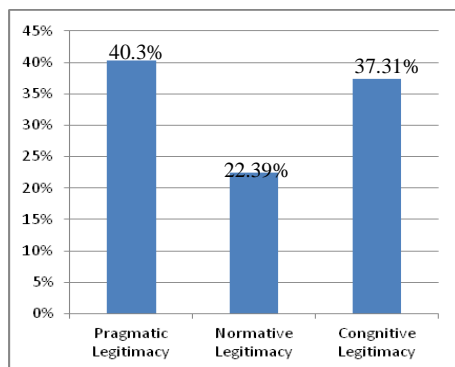

Figure 1: Pre-test result of legitimizing strategies adopted in Taiwan

Subjects	Frequency
Industrial standards, business publications, consultancy bodies of Green IS/IT	17
A variety of Green IS	12
Green Economics	11
Data center	7
Green/digital/smart building	6

Table 2: 5 most frequent appeared subjects in Green IS/IT news in Taiwan—A pre-test result

6   EXPECTED CONTRIBUTION

This paper aims to shed light on the legitimization process of green IS innovation in the context of Taiwan. By incorporating an integrated view of strategic and institutional perspectives, we hope to extend our understanding that green movement is not alone concerning with the adoption of green IS, rather it is about the relationship between humans, their environment, and the forces of specific institutional context that the green IT embedded. To the best of our knowledge, this study might be one of the first empirical research to investigate the phenomenon of green IS through a lens of

legimacy. We hope our study will make a number of important contributions to both theory and practice, especially in the infancy of green IS.

Theoretically, we propose the taxonomy of Green IS legitimization strategies by conceptualizing and operationalizing green IS discourses. We extend the framework of the IT legitimation taxonomy (Kaganer et al., 2010) by grounding the ideas related to green IS in the broader literature as well as the terminologies emerging from our dataset. This taxonomy helps the future researchers observe Green IS phenomenon systematically and allow the observation replicable (Lee, 1989). As Suchman (1995) suggests, the understanding of legitimacy might benefit greatly from empirical research using various legitimacy management strategies across social locations and through time. Based on common ground of legitimization strategies allow us to compare technical and institutional constraints in different environments, and to understand how these constraints favour each organization making sense of different legitimacy management strategies. The taxonomy we propose provides a useful tool for a cumulating body of knowledge of green IS strategies worldwide.

Another important and original contribution lies in the innovation of our methodology. We introduce a mixed method approach by incorporating content analysis method with case study in the stage I and stage II of our study. This cross-validation between studies not only produce richer and more reliable results, but also facilitates a better balance of the methodological rigor and relevance to practices that have been long discussed in IS field (Benbasat and Zmud, 1999). Our approach also echo the call for combing qualitative and quantitative methods in IS reserach (Kaplan & Duchon, 1998; Mingers, 2003).

Practically, our analysis can also provide insights into the practice of Green IS legitimization strategies and adoption of the green technologies. The Green IS legitimation taxonomy provide guidelines of communication strategies for both firms and policy makers, as well as watchdog groups, such as Greenpeace organization making sense and promoting the idea of Green IS. Together, the discourses of Green IS innovation from different stakeholders may serve as a rhetorical context that is conductive to a synergy of the social/global concern and the business opportunity for a more sustainable world.

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