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**Conference Paper**

## Attitudes towards telework for continuity planning in Japan

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# **The 19th ITS Biennial Conference 2012**

## **“Moving Forward with Future Technologies: Opening a Platform for All”**

18 - 21 November 2012, Thailand

### **Attitudes towards telework for continuity planning in Japan**

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# **Attitudes towards telework for continuity planning in Japan**

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## **Abstract**

This paper examines the suitability of telework for business continuity planning (BCP) in Japan by looking at how views on telework are shaped by demographic characteristics, organizational culture, and individuals' use of technology. The study surveyed regular employees with experience of the 2011 Tōhoku earthquake (n=39) and their responses were analyzed using cross-tabulation analysis. The results showed generally positive attitudes towards telework, overwhelmingly so with respect to BCP-specific telework. From the survey it was further induced that certain characteristics may be associated with a greater likelihood that an individual will want or choose to telework; these are gender, the presence of dependents, placing reduced value in the role of the workplace, exhibiting consumerization tendencies, and using social media to interact with coworkers, albeit in work-designated profiles. The ability to identify such characteristics, and consequently, find individuals with positive views towards ad hoc telework, can be constructive in increasing the adoption rate of telework for BCP projects.

**Keywords:** ICT, BCP, consumerization, social media, presenteeism, business culture

## 1. Introduction

Management theorists have been studying telework, that is, the use of Information and Communications Technology (ICT) to replace work-related travel, since the 1970s. It has been argued that telework can be used to address various workplace and societal issues. More recently the focus has shifted in its potential to help protect organizations from disruptive events such as natural or manmade disasters [1],[2]. The present paper joins this discussion with the aim to investigate the suitability of telework for disaster management in Japan. Given that the country is located in an area prone to natural disasters [3], the adoption of telework for resiliency planning may present several benefits.

The study attempts to identify the environmental and individual factors that influence employees' views on ad hoc telework for emergencies. The model employed posits that attitudes towards telework are constructed via a combination of social and organizational values and the ways in which individuals use technology. It is hypothesized that traditional work values inhibit the implementation of such projects, whereas emerging patterns in technology use counter this trend. In the interest of discussing specifically continuity and resiliency issues, this study surveyed the attitudes, values, and device and media utilization patterns of regular employees in Japan with experience of the 2011 earthquake off the Pacific coast of Tōhoku<sup>1</sup> and its aftermath.

This paper is organized as follows; after the introduction, the theoretical background of telework for resiliency planning and its potential in Japan are discussed. Next is research design, followed by results and discussion. Finally, the general implications and significance of the findings are considered in the conclusion.

## 2. Background

Business Continuity Planning (BCP) is a planning process that prepares organizations against disruptive events, particularly - but not limited to - emergencies [4]. At its core, BCP aims to reduce the time needed to return to normal operations, and does so by addressing points of vulnerability [5], including the accessibility and safety of the workplace. Telework has been proposed as a tool for BCP, as it allows for the duplication of the means of production, and enables organizations to sustain a given level of operations even in the event of widespread disruption [6].

Conventional emergency planning in Japan has received significant attention and over the years an excellent first-response system has been developed, primarily aimed at immediate disaster mitigation and facilitation of the relief efforts [3]. However, while resiliency strategies have been strongly event-focused, they have been less specific on the time frame and methods with which organizations are to return to normal operations. This is a gap that is currently being addressed, partially as a consequence of the Tōhoku earthquake.

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<sup>1</sup> Henceforth referred to as the Tōhoku earthquake

Furthermore, despite telework's potential for continuity planning, in Japan policy-wise it has been promoted principally as a solution to the country's rapidly aging population [7],[8], and ad-hoc telework was uncommon before the Tōhoku earthquake in 2011. In 2011, and to a certain extent as a result of maturing policies (such as the Telework Action Plan, [8]), telework implementation reached 19.7% of the total working population [9], a relatively low percentage given the country's BCP needs and potential telework capacity.

The barriers to successful implementation should primarily be attributed to organizational and cultural causes, since the infrastructure and tools necessary are already in place. The literature suggests that the combined effects of a business culture that tends to give primacy to group interests [10], the lack of formal job definitions and regular performance evaluations, and the fact that living spaces in Japan tend to be small and are unsuited as work spaces make telework an unattractive option overall [11]. At the same time, traditional values frame the workplace as the primary space where adult social life takes place [12], while the home is seen as the domain of the stay-at-home wife [10]. Thus, the workplace is imbued with a cultural significance that reflects socially accepted norms of adulthood and gender and work roles that telework challenges by removing the employee from the physical location of work. It is evident, therefore, that there are several cultural factors that inhibit adoption.

### **3. Research Design**

In order to shed some light on the process of acceptance or rejection of telework as a BCP strategy, this study investigates the effect of workplace values and electronic devices and social media on employee attitudes. These elements are particularly emphasized to account for specific cultural characteristics of the Japanese workplace and to incorporate technological changes of the past decade, not only in terms of the available technology, but also in the way individuals use this technology.

To identify the relationships between the different factors, an online survey was administered to individuals who were regular employees during the Tōhoku earthquake and had first-hand experience of crisis management and disaster mitigation processes (n=39). Responses were collected from different locations and across business sectors. The self-completion questionnaires attempted to investigate the relationship between the respondents' willingness to telework or telework experience and three indicator groups, namely demographics, perceptions of organizational culture, and technology use patterns. Demographic data included gender, age and educational background, as well as the number of dependents per respondent.

Organizational values were represented by two indices, called "presenteeism" and "uchi/soto", which were measured using Likert items. Presenteeism is defined as the act of being present at the workplace, regardless of one's physical and mental condition [13]; in the context of this study, it more generally pertained to any adverse conditions, not necessarily health related. The second

index, named “uchi/soto” (after the Japanese terms meaning inner and outer), describes a rigorous conceptual separation of the home (uchi/inner) and work (soto/outer) spheres. The term is used to reflect a range of socio-cultural values that result in rigidly assigning specific actions and roles to specific locations.

The last variable group, technology use patterns, concerned levels of consumerization, portability, and social media use. Consumerization is the trend for new information technology to appear first in the the consumer market and then spread into business organizations [14]. In this study, we have used the term to describe the use of personal IT devices for work purposes. Device portability on the other hand, is relevant as a technological innovation that greatly enables telework. Patterns of use for both consumerization and portability were established by asking respondents to approximate the frequencies with which they used different purpose devices in different locations and for different type of content. The last technology-related index related to social networking service (SNS) use patterns. In this block of questions, respondents were asked on their use of social media, whether they had separate private and work profiles, and whether they had added (“friended”) coworkers to these profiles.

From the framework outlined above, the following hypotheses were developed:

**Hypothesis 1: Demographic characteristics will have specific effects on attitudes<sup>2</sup> towards ad hoc telework.**

H1a. The presence of dependents will be associated with positive attitudes.

H1b. Gender will have no effect.

**Hypothesis 2: Organizational culture will negatively influence attitudes to telework (both regular and ad hoc).**

H2a. Individuals who place a high value on being present at the workplace despite adverse conditions (presenteeism), will have negative attitudes.

H2b. Individuals who express a strong preference for separation between the workplace and the home (uchi-soto) will have negative attitudes.

**Hypothesis 3: Certain technology use patterns will be associated with positive attitudes towards telework (both regular and ad hoc).**

H3a. Consumerization will be associated with positive attitudes.

H3b. Individuals who frequently take advantage of device portability will have positive attitudes.

H3c. Individuals who interact with coworkers via SNSs will have positive attitudes.

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<sup>2</sup>Attitude is intended to include both the willingness to telework, and the eventual decision to telework. In the discussion, these two are analyzed separately.

A generic purpose sample was selected (based on individuals who met occupation and location at the time of the Tōhoku earthquake criteria) and then a snowball<sup>3</sup> sampling method was employed. The sample presented two significant tendencies. First, it did not include the marginal age brackets of the working population (i.e.  $\leq 24$  and  $\geq 65$  years) and tended to skewer young ( $\bar{x}=38.3$  yrs). The age mode bracket of the sample nevertheless was the same as the national mode, that is, 34-45 years [16]. Respondents also clustered at higher educational levels than the national average. This tendency is probably a result of the sampling and survey methods. Using website analytics, it was determined that the response rate was 54% of those who accessed the survey, giving thus a strong indication of further response bias.

Bearing in mind these special tendencies, and the small sample size, the methods for analysis were multiple-factor cross-tabulations of close-end and numerical results, and content analysis of the open-end textual elements of the survey.

#### 4. Results

Results showed generally high willingness to telework, and overwhelmingly so (89.7%) with respect to BCP-specific telework. Telework experience of the sample, while significantly lower at 41%, was still over twice that of the general population in 2011 [9].

Of the model factors related to willingness to telework and telework experience, organizational values were associated with attitudes as predicted, with both presenteeism and uchi-soto values more relevant to those who held negative attitudes on telework overall (CT indices 133, 170). The rest of the variables presented divergent results in relation to willingness to telework versus actual experience of telework.

Willingness to telework was related to gender, consumerization, and social media use. Female respondents generally held more positive views than male respondents. Those with positive attitudes also tended to cluster towards high frequencies of consumerization, (64.7% for medium to high levels of consumerization for ad hoc telework), but consumerization did not seem to be of consequence in connection to experience. The majority of respondents (87.2%) used social media, and non-use was associated with a lack of telework experience (CT index 122). Those with positive views and experience of telework were more likely to have a closed networking profile, and to interact with coworkers through segregated (i.e. work-specific) profiles.

As to the decision to telework, a weak relationship was present between lack of dependents and lack of telework experience. Device portability emerged as a factor, particularly for respondents with Tōhoku-related experience, 63.6% of which made use of device portability every day. Finally, respondents with telework experience were highly likely to have segregated profiles (75%) and add

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<sup>3</sup> Snowball sample: A non-probability sample in which the researcher contacts a small group of people relevant to the research topic and then uses these to establish contacts with others. The technique has the problem, as in this case, that it leads to samples with strong, non-representative tendencies [15].

their coworkers to the work-associated profile (81.3%), whereas those without telework experience tended to have a single profile (73.9%) and not “friend” coworkers (56.5%).

## 5. Discussion

The generally positive attitudes towards telework, and the particularly positive views of telework when framed in the context of disaster preparedness, can be seen as resulting in part from the emergence of a more dynamic approach to contingency planning in the aftermath of the Tōhoku crisis. Drabek and McEntire [17] argued that disaster survivors tend to be exceptionally proactive in implementing ways to resolve their situation. This explanation is further supported by post-earthquake surveys conducted by the Ministry of Land, Infrastructure and Transport, which showed increased interest and deployment of telework in Japan when compared to pre-earthquake levels [9].

The study results additionally give evidence that certain tendencies may be associated with a greater likelihood that an individual will want to, or choose to, telework for BCP. These characteristics have been summarized in the table below.

Potential Teleworker Profile (willingness)	Teleworker Profile (actual experience)
Female	Tends to have dependents
Reduced value on being present at the workplace in adverse conditions	Reduced value on being present at the workplace under any conditions
Less value on the separation between work and home	Less value on the separation between work and home
Interacts with coworkers on SNSs	Interacts with coworkers on SNSs
Frequent use of own devices for work purposes	Frequent use of portability

Table 1: Summary: Teleworker Profiles

### A. Gender and dependents

The relationship between willingness to telework and gender may be attributable to the policy push to frame telework as a strategy for achieving a better work-life balance, since conventional societal roles make this balance primarily the concern of women. Qualitative responses from the participants support this theory, as flexible arrangements and caregiving were brought up as reasons to telework mostly by female respondents (66.67%).

The matter however is complicated by the fact that only the presence of dependents appeared to relate to practice. This is in part a result of reduced opportunities for women to access telework projects. For one, telework (especially for BCP) is primarily associated as a business practice with the Information Technology industry, which in Japan, as in other countries, tends to be male dominated [16]. Furthermore, women tend to be more often employed in positions that require

face-to-face interaction, thus reducing the feasibility of telework [16],[18]. The unfeasibility of telework for their own line of work was more commonly brought up by female respondents, suggesting that this analysis may hold.

In terms of policy goals, these findings suggest that targeting women for the promotion of telework, has in part been successful. However, for this promotion to translate into actual practice, it also important that employees perceive that telework is accessible to them, an issue that may not have been addressed fully in the existing policy framework.

### **B. Organizational values**

Not unexpectedly, those who valued workplace presence were against telework. In the course of normal operations, a strict adherence to being present at the workplace can be understood either as a personal value, or as a fear of social backlash. Some of the participants who wanted to, but did not telework stated that, while they did not feel the necessity to be in the office, they worried that if they did not show up at the office every day, it could cause them problems. Conversely, many of those who were against telework altogether, held a strong conviction that work belongs in the office and not in the home.

This point may appear to be trivial, but it may explain what stands in the way of implementation. To generate willingness to telework, the external barriers need to be removed first; employees who worry that choosing to telework will have consequences will not telework, even if they want to. Therefore, the solution is institutional; a clearly supportive managerial position on telework that concretely and straightforwardly sets the parameters of the possibility of telework could allay fears and create a pro-telework environment [19].

Significantly, once telework was framed in terms of emergency preparedness, respondents' positions became more acute. Those who did not feel strongly about being present at work in the first place became more desensitized to others' opinions as the perception of risk became greater. Similarly, respondents who were against telework due to internal values, associated socialization and the community with the workplace even more so in an emergency. Thus, for these respondents, not only was the workplace the primary space for adult socialization, but it was also a crucial element for reconstructing the community. This value of workplace-as-community may be an important contributing factor to the relatively low levels of BCP-related telework, and should be taken into consideration when developing such projects.

### **C. Social space and technology**

The above analysis essentially agrees with the previous literature on telework in Japan; however, the addition of technology to the model creates a different dynamic as new technologies create de-facto telework conditions. It became apparent in the course of the study that there were two opposing forces at play. On one hand, the available technology, through increased portability and consumerization, simplifies the overlap of work and non-work spaces, making unofficial telework common. On the other hand, as technology becomes cheaper, more accessible, and more

common, consumers and organizations alike found that to retain a level of control, it was necessary to maintain a clear distinction between work and private content (rather than between devices).

Thus, both those willing to and those actually teleworking tended to place less value on rigidly separating the physical workplace from the home but were far more likely to have segregated their virtual spaces, which in terms of social interaction meant having one SNS profile for personal friends, family and acquaintances, and another for coworkers. Other forms that this separation could take were to have one profile and then give different contacts different levels of access, or, in the more strict form, to have two (or more) different profiles in separate services. This phenomenon is easily explained in that, since teleworkers are detached from the physical workplace, out of necessity they are far heavier users of communications systems, which means that they are far more likely to be familiar with the pitfalls of electronic communications and the solutions available to them.

In terms of the actual work process, teleworkers were more likely to take advantage of portability than use their own devices (i.e. consumerization). One common element that was brought up was that teleworkers had access to company-issued hardware more so than potential teleworkers. Therefore, they were more likely to comply to a more evident separation, whereas those who were willing to telework but did not officially do so, were more likely to engage in “unofficial” telework, and tended to be more casual in their device use, resorting to using the device they had better access to (i.e. their own).

For BCP policy issues, these results suggest that rather than the devices themselves, the issue at hand is the access and separation of content, which bears on matters of security and privacy. In practice, this means that it is relatively easy to create physical barriers between the work and non-work spheres by having work-assigned devices, but putting up virtual barriers requires a different level of expertise and understanding of social media, which may severely restrict telework to the more communications-savvy.

## **6. Conclusion**

To conclude this paper, telework appears to have significant potential for BCP in Japan, given the apparent employee interest in it. The results of the study give some indication of the factors that are associated with a willingness to participate in telework programs, and the factors that turn this willingness into practice. This information can be constructive, as suggested by Nilles [19], in identifying those individuals with highly positive views of telework who can put in the extra effort needed during the initial phases of implementation, and in doing so increase the overall chances of success of the project. Therefore, knowing that certain demographic characteristics and types of organizational structures are more likely to point to potential “champions”, it will be easier to find and engage those employees.

When looking at the policy setting<sup>4</sup> for telework however, it becomes apparent that the attempt to solve societal problems such as work-life imbalance through the use of telework does not address the fact that these problems and the implementation of telework alike stumble across the same socio-cultural barriers. Presenteeism, for example, is simultaneously associated with the work-life imbalance problem, and negative attitudes towards telework; thus, promoting telework as a solution to work-life imbalance is not going to succeed, since the underlying idea that gives rise to both is still present.

Furthermore, these policy initiatives do not discuss practical concerns regarding BCP-specific telework. The matter of the deterioration of the workplace as a community through telework, the lack of easy access to BCP for all interested employees, and the still evolving issue of content versus device separation are all matters that are not adequately addressed.

The contribution of this research to a certain extent lies in its potential to shed some light on the reasons why telework schemes are not easily adopted, especially on the subject of continuity-related telework, which has not been as thoroughly examined as regular telework. Furthermore, by studying subjects with emergency response experience specifically, the study expands our knowledge of emergent behaviours with regard to disaster situations. One last contribution of this study may be its attempt to broaden the existing framework for measuring attitudes towards telework to account for technological changes, particularly the blurring of the lines between personal and work space. There is little doubt that social media will soon dominate communications; having a better understanding of how users create spaces and interact in them in the virtual sphere will undoubtedly be an issue of concern.

While this study tried to elucidate the factors that come into play in the formulation of attitudes to telework, it does not hope to cover the subject exhaustively. The model used is purposely reduced, not only to focus on the idiosyncrasies of Japanese business culture, but also out of practical concerns. Sadly, this means that there may be as yet undiscovered but nevertheless significant factors that were not included in the model. Moreover, the size and tendencies of the sample limit the model's predictive ability, so that any conclusions drawn from the results should be seen as general tendencies at best, and do not necessarily imply any correlations. Consequently, further studies are needed to assess the extent to which these results apply to the general population.

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<sup>4</sup> Such as the Telework Action Plan of 2007 and the Long Term Strategic Plan Innovation 25 of 2007

## Works Cited

- [1] Roitz, J. and Jackson, E. "AT&T adds business continuity to the long list of telework's advantages." *Journal of Organizational Excellence*, 25 (2006): 3–12, last accessed June 28, 2012, doi: 10.1002/joe.20085
- [2] U.S. Department of Homeland Security, Federal Emergency Management Agency. Federal Continuity Directive 1 (FCD 1): Federal Executive Branch National Continuity Program and Requirements. November 6, 2007, last accessed June 28, 2012, <http://www.fema.gov/about/org/ncp/coop/planning.shtm#4>
- [3] OECD (Organisation for Economic Co-operation and Development). 2009. *Japan: large-scale floods and earthquakes*. Paris: OECD.
- [4] Elliott, D. Swarts, E. And Herbane B. 2010. *Businesses Continuity Management: A Crisis Management Approach*. New York, NY: Routledge. Print.[5] (McEntire 2012)
- [6] Gill, T. J. "Workplace continuity: how risk and technology will affect facilities strategy", in *Journal of Facilities Management*, 4 (2006): 2 , pp.110 - 125 last accessed June 30 2012, doi: [10.1108/14725960610651205](https://doi.org/10.1108/14725960610651205)
- [7] Ministry of Internal Affairs and Communications. 17 July 2009. "MIC Communications News Vol.20 No.7." *MIC Communications News Vol.20 No.7*. [http://www.soumu.go.jp/main\\_sosiki/joho\\_tsusin/eng/Releases/NewsLetter/Vol20/vol20\\_07/vol20\\_07.html](http://www.soumu.go.jp/main_sosiki/joho_tsusin/eng/Releases/NewsLetter/Vol20/vol20_07/vol20_07.html).
- [8] Cabinet Office. 2007. *Innovation 25: Creating the Future, Challenging Unlimited Possibilities*. [http://www.kantei.go.jp/foreign/innovation/interimbody\\_e.html](http://www.kantei.go.jp/foreign/innovation/interimbody_e.html) (last accessed June 30, 2012).
- [9] Ministry of Land, Infrastructure and Transport. [Summary of survey results of Survey of FY 2011 of teleworking population]. 2011. [http://www.mlit.go.jp/report/press/toshi02\\_hh\\_000019.html](http://www.mlit.go.jp/report/press/toshi02_hh_000019.html) in Japanese
- [10] Mokhtarian, P. and Sato K. "A Comparison of the Policy, Social, and Cultural Contexts for Telecommuting in Japan and the United States", *Social Science Review*, 12 (1994): 4, pp. 641-658
- [11] Illegems, V. and Alain Verbeke, A.2003. *Moving Towards the Virtual Workplace: Managerial and Societal Perspectives on Telework*. Cheltenham, UK: Edward Elgar Pub. Print.
- [12] Roberson J. E. "Becoming Shakaijin: Working-Class Reproduction in Japan." *Ethnology*, 34 (1995): 4, pp. 293-313, last accessed June 30, 2012, Article Stable URL: <http://www.jstor.org/stable/3773943>
- [13] Yamashita M, and Arakida M. [Concept analysis of presenteeism and its possible applications in Japanese occupational health]. *Sangyo Eiseigaku Zasshi*, 48(2006):6, pp. 201-13. in Japanese
- [14] Moschella D., Neal D., Opperman P., and Taylor J. "The 'Consumerization' of Information Technology" *Leading Edge Forum*. 2004, <http://lef.csc.com/projects/70>, last accessed June 30 2012
- [15] Bryman, A. *Social research methods*. 3rd ed. Oxford: Oxford University Press, 2008.
- [16] Ministry of Internal Affairs and Communications. "Statistics Bureau Home Page/Japan Statistical Yearbook." The Statistics Bureau and the Director-General for Policy Planning. <http://www.stat.go.jp/english/data/nenkan/index.htm> (accessed June 30, 2012).
- [17] Drabek, T. E. and McEntire, D. A. "Emergent phenomena and the sociology of disaster: lessons, trends and opportunities from the research literature", in *Disaster Prevention and Management*, 12 (2003): 2, pp.97 - 112, last accessed March 25, 2012, doi: [10.1108/09653560310474214](https://doi.org/10.1108/09653560310474214).
- [18] Hendry, J. *Understanding Japanese society*. 2nd ed. London: Routledge, 1995. print.
- [19] JALA Associates (Los Angeles, Calif. ) and California. Dept. of General Services. 1990. *The State of California telecommuting pilot project: final report. Executive summary*. Dept. of General Services, 3.