Participatory design (PD) has historically started and traditionally been conducted in Scandinavian contexts, where participation is an integral part of the social value. In this paper, we report our experiences conducting PD approaches in Japan, where social value systems and understandings of participation differ from Scandinavia. The project shows how Japanese utilize PD to solve an extraordinary, disastrous tsunami situation. We exemplify how negative parameters for participation vanish and new social value is created locally and temporary when certain conditions are fulfilled. We argue that culturally distant societies can reasonably adapt PD and use the most of its essence by providing a localized micro-mechanism for consolidating the conditions.

Author Keywords
PD, public good, natural disaster

ACM Classification Keywords
H5.2 Information interfaces and presentation: User Interfaces –Theory and Methods, User-Centered Design.

INTRODUCTION
Participatory design (PD) has historically started and traditionally been conducted in Scandinavian (e.g., Greenbaum, 1991) and North American contexts (e.g., Schuler, 1993). Recent research shows there are strong correlations between socio-cultural environment and design and usability methods (e.g., Clemmensen, 2011; Winschiers, 2010). There are likely cultural bias and assumptions inherent in these methods, as well as cultural varieties involved in their adaptation and use (Iivari, 2011). In this paper, we report how an adaptation of PD in Japan was carried out without losing its essence and while remaining locally accountable.

The root of the Scandinavian PD is seen in ‘Democracy’ and ‘Equality’ at work (Ehn, 1989; Kensing, 1998), which gave a strong influence in PD practice as shown in the argument, “the sociocultural background is given due consideration” (Floyd, 1989). Such historical trajectories might pose a question in an adaptation of PD in socio-culturally different societies. In fact, comparing with PD cases reported from Scandinavia and North America, reported cases from Asia, South America and Africa are still quite limited (e.g., Puri, 2004; Winschiers, 2010).

Some Japanese researchers argue incompatibility of PD in culturally different societies such as Japan by showing that Japanese social value systems and understandings of participation are different from countries where PD has been applied. This concern has prevented practitioners from applying PD, in spite of increased needs for participatory activity in societies.

In this paper, we introduce our experiences conducting PD, the Reborn Japan Project in Japan. Based on the case, this paper attempts to argue that even a socio-culturally different society such as Japan can reasonably adapt the PD approach and use the much of its essence by providing localized micro-mechanisms for consolidating the three social conditions identified in the case, which are strongly correlated with the success of PD introduction in practice.

In the rest of the paper, first we exemplify current PD contexts to Japanese environment. Next, the PD case, the Reborn Japan project, will be introduced. We report our findings, focusing on 3 social conditions observed in the case. Finally, we discuss the adaptability of PD in Japan.

THREE ASSUMPTIONS FOR PD
In the rooted historical trajectory of PD, there are strong tendencies seen in characteristic PD cases, which are regarded as fundamental prerequisites. These could be potential challenges in conducting PD in Japan. They are (a) Equality, (b) Open discussion and (c) Commitments for the participation.

In Scandinavia, empowerment in the work place toward flat relations and equality was an original objective of PD movements (Ehn, 1989; Kensing, 1998). Although this democratization perspective has diminished in the current mainstream of PD theories and practice, its importance for equal discussion through the PD process are still valid. On the contrary, in Japan, being a hierarchical society, the distance between the top and the bottom of an organization is wide, which can be easily taken as a challenge for introducing PD to design activity. In spite of organization restructuring movements for a flat structure in the 90’s, power transfer and process reduction for flatness remain challenges in Japanese organizations.

1 Arguments are not yet available in English
2 Well-known Kaizen and the Tokyo way empower employees by providing tools for bottom up decision-making. However, these methods do not deny hierarchy.
In Scandinavia open discussion prevails in every corner of the society; at schools, offices and public spaces (Dalsgaard, 2010). On the other hand, in Japan openly expressed opinions in formal meetings are not expected because of the social norm, although they are also not prohibited. Even in an occasion for open discussion such as workshops, some feel difficulty in opening up to strangers or different ranking members in a hierarchy.

It is generally agreed that the importance of the stakeholders’ commitment to the PD process is of critical importance (Gulliksen, 1999), since PD owes participants’ self-motivation and commitment for participation. Similar to Scandinavia, where self-motivation and commitments are not necessarily a prerequisite (Dalsgaard, 2010), it is also a challenge in Japan to let stakeholders commit to the task.

A CASE BACKGROUND

On the 11th of March 2011, a magnitude 9.0 earthquake, the record figure in Japanese earthquake history, hit the large part of northern Japan. The damage caused by the earthquake, succeeding tsunami and meltdown of atomic power plants was unprecedented. Some cities and villages washed away without any traces of human life, and in such areas, local administrative functions were lost in the moment of the tsunami. Many citizens suffered from anxieties both for their current situation and future expectations. In the official announce of the end of 2011, 15,843 citizens died and 3,469 citizens are still missing.

After the tsunami receded, both a humanitarian crisis and economic damages have been reported. They are, to name a few, mental issues of the survived victims, decreasing community ties, anxieties over food safety, economical issues of city reconstruction and revitalization challenges of local farming and fishing industry. Because of such an unusual crisis and numerous major challenges, during the first few months, the recovery process was not visible and it was often difficult to prioritize restoration tasks. As a result, frustration was accumulated and widely spread in the affected society.

To challenge such unarticulated social issues where no one knows what the correct and optimal solutions are, wider collective citizen’s participation has been recognized as of importance. However, how to conduct an effective process was not clear.

STRUCTURE, METHODS AND RESULTS

The Reborn Japan Project was initiated by two leading Japanese IT firms, NTT Data and Nomura Research Institute (NRI) soon after the natural disaster. The motivation for this unique cooperation is quite simple; the aspiration to contribute and change the crisis situation. In order to improve the destroyed economic capacity and damaged environment, it is obviously insufficient just to clean up and reconstruct cities in the damaged area by top-down diktats. It required a large-scale social change from collective, bottom-up initiatives. Thus, the objective of the Reborn Japan Project was set to find solutions for social and economic restoration to the crisis by applying a method which was capable of involving local and wider generation, namely PD.

Stakeholders

Stakeholders of the project were high school and university students ranging from 16 to 25 years old, local medical doctors, university professors, local politicians, Non Profit Organizations (NPOs) members, artists, and designers and private company executives. Many of them were local residents, former inhabitants, or those who have strong relations to the site. The project was intentionally designed so that the young, who were strongly motivated but had limited political and economical means to make changes in the society, would take a central role. Among them, the authors took a facilitation role as the catalyst to stimulate ideas, test feasibilities and provide useful practical suggestions for the projects from different perspectives. A total of 62 young were divided into a total of 12 groups with 5-6 members each in the first stage, and later reduced to four groups in the second stage.

The project

The project ran from 7 July to 25 August, 2011 and was structured using a recruiting period, the first and the second workshop and the post project period. The recruitment for participation was conducted through mainly online-based social networking service (SNS); Facebook, aiming at reaching to the young generation.

The first workshop was held, in Narita City, Chiba prefecture (close to Tokyo) between 8-12 August. The workshop was organized for idea generation and team idea formulation. Each group brainstormed ideas, conducted several different design methods, such as persona, scenario and summarized the idea with video. The team ideas were to analyze and evaluate in the fifth day and only four teams out of 12 were selected for continuing to the second workshop held in the crisis area. The second workshop was held in the northern crisis area, Matsushima city, during the 20-24 August. The core activity of the second stage was field investigation with ethnographical investigation, observation on situations and reality, and semi-structured interviews by involving more locals than the first workshop. For workshop spaces, big physical collective meeting places equipped with white boards, papers, post-it and projectors were prepared and eventually used 24 hours a day. In addition, an experience room was prepared, for inspiration, in which earthquake related media records and pictures taken by the Japanese Self-Defense Forces were collected and displayed. In the post project period, the stage was back to the online and self-motivated and voluntary activities in relation to the project have still continued.

Results

After the second workshop, four teams suggested team ideas: (1) a digital notice board that supports and promotes communication among residents using tablet technology, such as iPad. (2) an idea to organize and conduct ‘Food Meetings’ between consumers, producers and professional researchers on radioactive contamination discuss, (3) a social system of ‘one share mayor’ in which each individual can donate to the exact purpose of the renovation plan which was directly requested by the victims. (4) a ‘Kenafflower’ business model, which creates eco-system for re-vegetation in the crisis area with the profits of growing the kenaf plant, producing and selling.
paper crafts made from kenaf fibers (Fig. 1). Surprisingly, all ideas have continued being developed as of the beginning of 2012, and the notice board and Kenaf ideas received official support from private organizations to realize their idea in the crisis site.

![Figure 1. A kenaf eco-system concept shown visually.](image)

**FINDINGS**

The research question in this project was whether an adaptation of PD in Japan could be carried out without losing its essence and yet remain locally accountable. Our PD case supported creating clear project ideas. All the more important, the idea was strong and sustainable enough for stakeholders to commit in practice even after the project was over. Regarding this as a successful PD case, we identified three main social conditions for success; they are (1) ideal condition generated by unusual situation, (2) creation of the place, Ba, and (3) collective aspiration of contribution and change.

**Ideal condition for PD**

This PD case was conducted under an extreme and unusual situation; the peculiar social influence of large scale natural disaster. With this crisis, citizens in Japan and a whole society were mentally and economically under a crisis influence while about one third of the area was physically affected. This social condition strongly influenced the project. Firstly, the motivated young with energy and ideas participated in spite of the short recruitment period and no material rewards. Secondly, the crises accelerated flat relationship between the young and the old of the traditional social dynamics and the low (e.g., students) and the high (e.g., CEO and politicians) in organizational hierarchy by reducing the conventional social norm. Open opinions, quick decision-making and equal power distribution were observed.

**Creation of the place, ‘Ba’**

The physical collective places for discussion and inspiration were intentionally designed in the workshops. When the shared meeting rooms became open 24 hours a day, the rooms contributed to an accelerated collective aspiration by creating a unique atmosphere such as group hypnosis or collective flow experience (Csiksentmihalyi, 1990). With collected materials and visualized ideas on the walls and tables, the rooms began to play a critical role of activity hub. The meeting rooms became spaces with opportunity for share (Harrison, 1996) or Ba, a shared physical, virtual and mental space for emerging relationships (Nonaka, 1998).

**Collective aspiration for contribution and change**

Over time, individual motivation became collective aspiration for contribution to alleviate the devastating situation. This is more similar to festival enthusiasm or religious ceremony than conventional IT projects. Individual motivation to attend the project differed in the beginning; some were strategic, while others attended through intellectual curiosity. However, behind such reasons for participation, everyone also shared intolerable anxiety for the future of their country and a strong motivation for contribution and change for public good. This made a difference from the conventional workshop situation where individual motivation often stand ups.

**DISCUSSION**

Findings in the case indicate that, when some conditions are met, PD could provide benefit for creating innovative design even in socio-culturally different societies. More precisely speaking, in extreme or unprecedented situations such as an unusually destructive natural disaster such as the tsunami crisis, when Ba with less conventional social norms are formulated and developed, and collective aspiration for change among stakeholders in such Ba become dominant, the PD practice in our case became of value. Relating to our extreme case, we review three prerequisites for PD projects.

**Flat Community**

Unusual situations as a result of a devastating disaster contributed to a society as flat as ever. Aspiration for supporting recovery from the disaster broke down the stiff social norm. The challenge in our case was an unarticulated one that no one knew what the correct and optimal solutions were, thus, the solution had to be created in society collectively. For such unarticulated challenges, the senior are unable to show their superiority based on their past experiences or just seniority so that it was natural that everyone had to attend the same discussion table. Under such circumstances, the establishment of flat community could be accelerated.

The needs of participation for social issues have been recognized in Japan recently, as shown in the increase of participatory city planning and policy making cases 3. However, flattening hierarchy in such cases is reported as a major challenge and the importance of equal participation mechanism has been indicated.

In our case, the teams argued their plans openly. Although the young tended to show listening attitude to the seniors without refuting or arguing in the beginning, they presented their opinions with confidence and never hesitated to raise objections, even to questions from CEOs, since their plans were established and strengthened through iterative discussion, interviewing and observation on reality. Our case shows that PD has a power to develop a capacity to stand up for rights by producing knowledge and this is exactly what pioneers have already learnt in PD practice (Nygaard, 1975).

**Environment for open discussion**

As challenges in Japan for open discussion, we discussed the social norm embedded in society and hesitations to open up to strangers. In our case, a couple of implicit but intentional structures have been introduced in the case. For example, the workshops were designed as an excursion style with two sessions of five days, totaling ten days, rather a half or one-day workshop. In addition,
the workshops were held in the shared meeting room, where all stakeholders were physically situated during a whole period. This setting created a unique environment Ba for flatness among stakeholders, and a foundation for open discussion. **Self-motivation and commitments** In our case, each individual was extremely motivated and committed to the project, in spite of what would be seen as negative conditions under normal social circumstances, such as no rewards and unarticulated social issues. Self-motivation was shown, firstly because of the unusual natural disaster situation. As already mentioned, the emergency situation united people, motivated them to act and compelled them to commit themselves to activities. At the same time, organizers also supported to keep their commitments and self-motivation alive and active by, for example, intentionally created a physical collective activity place, Ba. Participants could observe peers' activities, taking a side-glance when they became less motivated or they were about to give up. As shown, the intentional project structure also contributed greatly to sustaining motivation and turning their motivation from aspiration. Among all, it was clear that the devastating disaster situation took a critical role for PD adaptation in our case by breaking conventional social norms that prevail in Japanese society. However, intentional workshop structure, design and provision of its mechanism for participation also contributed largely to the conduct of PD as well. All in all, our project could make the greatest use of PD by achieving flat participation, an environment for open discussion and self-motivation one way or the other. Our case indicates localized micro-mechanisms are critical for introducing PD in culturally distant societies, no matter whether it is intentional or not. However, it is still arguable to what degree these mechanisms can be intentionally created and prepared in more conventional situations. This work has several limitations. The exemplified case is only one and with extreme characteristics. Although the case made it possible to highlight these characteristics precisely because of its distinctiveness, at the same time, scalability of the findings needs to be tested under more conventional settings. There are a range of implications for future research. Designing a feasible localized micro-mechanism to promote participation without relying on unintentional conditions such as natural disaster would be one. A holistic understanding and establishment of key conditions based on a few cases held in Japan or Asia could be beneficial as well. **ACKNOWLEDGMENTS** We thank all stakeholders of this project, the reborn Japan, especially the two companies; NTT Data and NRI. We also thank for contributing pictures to visual artist, Testsu-ro. We also thank reviewers for comments to earlier versions and Finn Kensing for a fruitful discussion. **REFERENCES** Clemmensen, T., Templates for Cross – Cultural Specific Usability Testing, International Journal of Human-Computer Interaction, 2011. Csikszentmihalyi, M., Flow: The Psychology of Optimal Experience. New York: Harper and Row, 1990. Dalsgaard, P., Challenges of Participation in Large-Scale Public Project, Proc. PDC 2010, 21-30, 2010. Ehn, P., Work-Oriented Design of Computer Artifacts, Lawrence Erlbaum, Hillsdale, 1989. Floyd, C., Mehl, W., Reisin, F., Schimdt, G., and Wolf, G, Out of Scandinavia: Alternative Approaches to Software Design and System Development, Human Computer Interaction, Vol. 4, 253-350, 1989. Gulliksen, J., Lantz, A. and Boivie, I., User centered Design – Problems and Possibilities – A summary of the 1998 PDC & CSCW workshop, SIG CHI Bulletin, Vol. 31, No. 2, 1999. Greenbaum, J. and Kyng, M. (eds) Design at Work: Cooperative Design of Computer Systems. Lawrence Erlbaum Associates, 1991. Harrison, S. and Dourish, P., Re-place-ing space: the roles of place and space in collaborative systems. Proc. Computer supported cooperative work 1996, 67-76, 1996. ivari, J. and ivari, N., The relationship between organizational culture and the deployment of agile methods. Information and Software Technology 53, 5 509-520, 2011. Kensing, F. and Blomberg, J., PD: issues and concerns, Computer Supported Cooperative Work, Vol. 7, 167–185. Kluwer Academic Publishers, 1998. Nonaka, I. and Konno N., The Concept of ‘Ba’ – Building a foundation for knowledge creation, California Management Review, Vol. 40, No. 3, 40-54, 1998. Nygaard, K and Bergo, O.T., The trade unions, new users of research, Personnel Review, Vol.4, 2, 1975. Puri, S. K., Byrne, E., Nhampossa, J. L. and Quraishi, Z. B., Contextuality of participation in IS design: a developing country perspective. Proc PDC 2004, 42-52, 2004. Schuler, D. and Namioka, A., PD: Principles and practices, Erlbaum, 1993. Winschiers, H., Bidwell, N. J. and Blake, E., Being Participated – A Community Approach, Proc. PDC 2010, 1-10, 2010.