

Participatory Design Competition Practice

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An increasing number of companies are trialing various external design resources to meet innovation needs, but assessing innovation in a design competition is difficult for enterprises. By studying the Thermaltake Creative Design Competition for 8 years, combining a literature review, empirical research, and interviews, the authors of this paper explore how to use design competitions as an effective resource for innovative concept exploration. The findings indicate that a company which used the participatory design methodology to manage design competitions needs to have sufficient R&D ability to assist the organisers and contestants in executing their objectives. The subject of the competition should be defined and transferred clearly to the contestants, and should be consistent with the company's innovation strategy. A design seminar is a helpful co-design process which allows the organiser and participants to work on the design together. The mutual benefit is important in participatory design competitions. This study can be a reference for enterprises wanting to use design competitions as an effective innovation design method.

Keywords: *Design competition; Design resource; Participatory Design; Design management*

1 Introduction

There are many practical cases of companies holding creative design competitions as a research platform for product innovation. The growing popularity of design competitions suggests that they are a firmly established innovation strategy (Lampel, Jha & Bhalla, 2012). There are various purposes for companies to organise design competitions, as well as different structures and governance practices. For example, most sponsors do not participate in the contestants' entire design process, but some enterprises take an active part in some phases to transfer and provide information and assistance, such as subject introduction, technical seminars, and assessment meetings.

This paper is based on participatory design theories and the study of the Creative Design Competition sponsored by the Thermaltake Technology Co. Ltd (hereafter Tt Competition and Tt Company), a serialised competition which has been held for 8 years. It is a positive case to study how to use design competitions as a platform for innovation design to achieve creative results. Through an analysis of their results and experiences of holding design competitions, we can determine effective applications of competition architecture and

governance methods, and expand the current research of design competition management to the event evaluation phase.

1.1 Thermaltake Company Product Innovation

The subject of this case study is Thermaltake and its creative design competition. Tt Company has the capability and experience of innovation research and development. Its Creative Design Centre is in charge of industry design. The Tt Company also takes an active part in cooperating with external design resources on new product design concepts and development projects. Due to the wide range of products, and in order to maintain its market competitiveness, the company promotes continuous innovative product development, which needs to be nourished with a steady stream of innovative product ideas and concepts. The company is continuously seeking new product concepts from external design resources to accelerate its innovation development and demonstrate its positive image of innovation.

1.2 Purpose of Design Competition

As a design method, a design competition is a type of “search” strategy (Banerjee & Loukaitou, 1990). With demands on product innovation concepts, some companies use design competitions to convey their innovation values, such as The James Dyson Award, while others explore potential new product ideas in design competitions and transfer winning entries into commercial products, such as Japan’s KOKUYO Design Award. Füller, Hutter, and Faullant (2011) introduced the “virtual design competition” as a new means of opening up the innovation process and enriching companies, and Lampel, Jha, and Bhalla (2012) have explored the competition phenomenon according to the development of open innovation, showing the relationship between innovation agendas and design competitions.

1.3 Participatory Design

In the design methodology described by Hanington and Martin (2012), participatory design is a complete design process involving exploration, derivation, and evaluation. Participatory design is a human-centred design approach based on collaborative design activities. Participants include designers, users, and non-designer professionals associated with design projects. Participatory design is a design method and concept. Spinuzzi (2005) proposes three basic stages in participatory design: (1) Initial exploration of work, the stage in which designers and users get to know each other; (2) Discovery processes, the stage in which designers and participants constantly exchange design ideas, stimulate each other, and identify needs and expectations; and (3) Prototyping, which provides a basis for designers and participants to repeat, joint, and explore further.

1.4 Assessment of Design Competitions

Chen (2004) divided design conception evaluation decisions into two stages: conception scanning and conception rating. Scanning is a quick and concise assessment of some feasible applications. Rating is a more careful analysis of these shortlisted ideas to choose the most successful design solution. Banerjee (1990) stated that the composition of the jury of a design competition should be diverse rather than uniform. Each jury member has his own perspective on design criticism. Therefore, the design juries should consist of multidisciplinary and unpredictable perspectives, not one “line of thought”.

2 Research Methods

The research methods for this study are divided into two phases. The first phase, a case study, includes data collection and analysis of the Tt Competition. The second phase is the

expert and participant interviews, with the relevant personnel and entrants involved in the Tt Competition.

2.1 Tt Competition Data Collection

The data collection section includes the background of Tt Company and materials from the first to the eighth Tt Competition, covering the competition introduction, objectives, theme setting, entry assessment, and competition results. The collected data were then analysed to understand the company business strategy and how the Tt Competition is executed, as well as the results of the competition. Data collection items and content refer to the following table.

Table 1 Data Collection Items and Content.

Item	Competition related
Competition objectives	1.Competition introduction 2.Competition governance methods explanation
Subject setting	1.Competition subject setting process 2.Competition subjects
Entry assessment	1.Competition judging process 2.Jury setup 3.Judging criteria 4.Quantity of competition entries
Competition outcomes	1.Creative concept application 2.Design proposal commercialisation

2.2 Interviews and Discussion

The second phase of the study comprises interviews with sponsor personnel and participants from universities. The interviews were conducted in a “semi-structured interview”. The goal of the interviews was to collect the organisers and entrants’ feedback and evaluate the competition. Interviewees are listed in Table 2.

Table 2 : Interviewees and their Positions.

Department	Position
Board of Directors	CEO
Project Team	Project Director
Creative Design Centre	Design Manager
Creative Design Centre	Senior Designer
Business Department	Marketing Manager
Business Department	Product Manager
Lunghwa University of Science and Technology	Winner from the entrants
Datong University	Winner from the entrants
Taiwan University of Science and Technology	Winner from the entrants

The interviews were accompanied by a questionnaire, including closed- and open-ended questions to state personal opinions. The content of the questionnaire is listed in Tables 3 and 4.

Table 3 : Questionnaire of Expert Interviews.

Questionnaire of expert interview		
A. Performance of design competition		
A-1	What are the objectives of the competition?	Public benefit Brand promotion User comprehension New concepts Other
A-2	Have the objectives been achieved?	Public benefit Brand promotion User comprehension New concepts Other
A-3	What is your advice on how to improve the performance?	
B. Participatory design competition		
B-1	What are the purposes of applying the participatory design method in the competitions?	In line with the company's innovation strategy Increase feasibility of the proposal(s) Transfer user experience Increase participants' willingness Other
B-2	The achievements of the objectives?	In line with the company's innovation strategy Increase feasibility of the proposal(s) Transfer user experience Increase participants' willingness Other
B-5	Do you have advice for the process of participatory design competition?	
C. Competition assessment		
C-1	The appropriateness of the competition judging process.	
C-2	The appropriateness of the jury setup.	
C-3	The judging criteria.	Design concept Product market Feasibility Other
C-4	Do the winners meet the expectations?	
C-5	What is your suggestion for the assessment?	

Table 4 : Questionnaire of Entrant Interviews.

1. Design subject of the competition		
1.1	The channels to understand the design subject	<input type="checkbox"/> Presentation by organiser
		<input type="checkbox"/> Information collection
		<input type="checkbox"/> Using experience
		<input type="checkbox"/> Case study
		<input type="checkbox"/> Other
1.2	Help from the subject instruction event	<input type="checkbox"/> Subject definition
		<input type="checkbox"/> User information
		<input type="checkbox"/> Design specifications
		<input type="checkbox"/> Market information
		<input type="checkbox"/> Other
1.3	Suggestions for the competition preparation phase.	
2. Enterprise participation in design competition		
2.1	Design methods	<input type="checkbox"/> Joint idea
		<input type="checkbox"/> Brainstorming
		<input type="checkbox"/> Product imagery
		<input type="checkbox"/> Scenario-oriented
		<input type="checkbox"/> Other
2.2	Assistance from the enterprise to design concept	<input type="checkbox"/> Proposal discussion
		<input type="checkbox"/> Workshop
		<input type="checkbox"/> Case study
		<input type="checkbox"/> User experience
		<input type="checkbox"/> Other
2.3	Assistance from the seminar	<input type="checkbox"/> Industrial design
		<input type="checkbox"/> Engineering design
		<input type="checkbox"/> Market positioning
		<input type="checkbox"/> User experience
		<input type="checkbox"/> Other
2.4	Suggestions to the organisers for the design concept phase.	
3. Design competition results		
3.1	The benefit of design competition participation	<input type="checkbox"/> Practice
		<input type="checkbox"/> Winner record
		<input type="checkbox"/> Market information
		<input type="checkbox"/> Using experience
		<input type="checkbox"/> Other
3.2	The reasons to participate in the design competition	<input type="checkbox"/> Competition reward
		<input type="checkbox"/> Competition subject
		<input type="checkbox"/> Competition organising
		<input type="checkbox"/> Course arrangement
		<input type="checkbox"/> Other
3.3	Suggestions on how to improve the design competition	

3 Tt Competition Data Analysis

3.1 Thermaltake Creative Design Competition Introduction

The initial purpose to hold the competition was for both public benefit and to enhance the company's brand image. The company also hoped to increase communication between industry and academia. As a public benefit of the design competition, the company provided design students with a platform to demonstrate their creativity and help them to understand industry practice through these competition activities.

3.2 Participatory Design in the Tt Competition

The participatory design of the Tt Competition includes three stages: subject introduction, entry assessment, and technical seminars.

Subject Introduction: At the start of the competition, the organiser holds a presentation of the competition subject in each participating university. The presenters include the design supervisor, project manager and users.

Entry Assessment: The Tt Competition judging process includes two stages: preliminary assessment and final assessment. The jury set-up for the preliminary assessment includes the company's internal professionals, such as the design manager, senior product designers, product manager, and R&D engineers, who are committed according to their professional backgrounds and positions within the company.

Technical Seminars: After the preliminary assessment, Tt Company arranges for all the shortlisted winners to visit its headquarters and participate in the technical seminars, in which Tt senior designers and engineers communicate with the participants and provide suggestions on improving their entries.

In the final assessment phase, the objects to be judged are the prototypes of the entries. The jury set-up for the final assessment combines internal and external experts. Before the final judging, the organiser explains the value setting of the competition and the judging criteria to the jury. The final judging is conducted through participants' presentations and work demonstrations. The final statistical average scores of the jury decide the winners.

3.3 Winners of the Competition

Since the first Tt Competition, the company has launched two products which were developed from the concepts of the winners. If an entry is selected to be commercialised, its entrant will be invited as an intern to participate in the whole process of the design development and the commercialisation work. In order to respect the rights of the inventors, participants whose works are selected for commoditisation will be awarded a prize.

4 Interview Data Analysis

4.1 Competition Subjects

In regard to the subjects of the competition, the expert interview data suggest that the subjects should be the product category in which the company is successful, and the subjects should meet market demands. They believe that, with narrowly-focused subjects, the quality of the design proposals submitted by the contestants is more in line with sponsor expectations. With broader innovation agendas, although the proposals are diverse, the entries lack design rationality and market demand due to the participants' limited understanding of products and industries. With narrowly-focused subjects, it is easy to compare and assess the innovativeness of the entries, and jury members' perspectives are more uniform.

4.2 Competition Participation

Through the design competition briefing session, contestants can understand the competition theme, market positioning, and user experience. However, design students lack understanding of technology and the market trends. Therefore, finalists will be invited to the technical seminars coordinated by the organisers to get advice from professionals. The professionals include senior designers, engineers, and marketing professionals.

4.3 The Competition Achievements

The product manager says that, although there are many innovative entries in the competitions, they lack alignment with the consumer market. The Tt Company CEO suggests that participants should make a preliminary analysis of their entries' market and user behaviours, and the entries that are submitted should comply with the company's existing product lines which have a precise marketing positioning to lower market risk. From the design students' side, obtaining suggestions on product design practices in the concept exploration phase is not only helpful for concept development, but also for design development by improving feasibility with advice from professionals.

5 Discussion

5.1 Participation in Design Competition Subject and Effect

With the competition development, participatory design methodology is increasingly applied in its process. This change has shaped the competition subjects from a broader new concept design to a narrowly-focused product design based on the company's innovative development strategies. With the subjects becoming more narrowly focused since the fourth competition, the participants are poised for in-depth exploration of user experience and behaviours. For example, there were three new concepts from the users' point of view in the fourth competition, one of which was a woman's perspective, which enlightened the company to evaluate the market demand of this customer group. These creativities are more likely to be feasible based on the company's existing product lines and are more likely to accelerate the company's new product development.

5.2 Participation in Design Competition Governance and Effect

The methodology of the participatory design of the Tt Competition corresponds to Spinuzzi's (2005) three basic stages: (1) Initial exploration of work; (2) Discovery processes; and (3) Prototyping. Tt Company holds brief sessions at the beginning of the competition to introduce the design subjects, its marketing position, and the collected user experience, to let contest participants know as much as possible about the proposed users.

Differing from a general design competition, as a collaboration-orientated competition, the design proposal development phase starts from the technical seminars, not after the winners are revealed, which is also beneficial to the company in terms of design proposal feasibility. On the other hand, these technical seminars have another important value for entrants. They benefit from education and professional development, and even have a chance to develop the entries into products. With mixed-good benefits, the promotion of a participatory design competition can be sustained, and it can increase the willingness of external resources to participate.

5.3 Participation in Design Competition Outcome and Value

In general, the internal new product development is based on the company's existing and familiar product lines, which have enough market research and technology support, but the creative concepts raised in the competition may be a totally new field for the company, which requires cost in regard to market research and investment evaluation.

As a participatory design project, the design competition is part of the research phase. Completed with the development phase, this innovation resource can be transferred to valuable innovation output. For the participating students, the complete and multi-faceted expert advice helps them to understand the role of the designer in the design project, how to cooperate with the relevant personnel to complete a creative design, and how to implement an innovative design from the corporate practice perspective.

6 Conclusion

In summary, participatory design competitions bring benefits to organisers and participants. The findings in the case study are highlighted as follows.

1. The theme of the design competition should be consistent with the company's innovative development strategy, and should be in an area in which the enterprise specialises. The narrow-focused subject, by providing a specific creative direction, tends to explore potential innovative proposals within the scope of a given topic. The participants' innovative proposals can have a high reference value for the company.

2. The technical seminars provide participants with industrial and technical support, which reflects collaboration and mixed-goods benefits for public and private entities. Through the design competition, Tt Company benefits from brand promotion and external design resources, while the design students benefit from design practice and education. However, in order to not interfere with the design concepts, it is suggested that the design seminars be held after the initial entries are reviewed.

3. The design proposal in the final assessment combines the entrant's original concept and the suggestions from experts, making it more mature and feasible than the initial review. The prototype provided in this stage is a necessary object to judge the final works, which makes the design concept complete and practiced, and promotes organisers, jury and participants to communicate, joint and explore further.

In general, the Tt Creative Design Competition is a positive example of integrating internal and external resources, with mutual benefits, which ensures that the competition continues to develop. The results of this study indicate that it is worthwhile to carry out further in-depth analysis of design competitions adopting the participatory method.

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