Applying and Validating a New Creativity Method: CityInnoCards

Jill-Valerie Tamanini[1,†,*], Jasmin Gorlt[1,†]

[1] *Fraunhofer IESE, Fraunhofer-Platz 1, 67663 Kaiserslautern, Germany*

Abstract

The InnoCards card game is an ideation tool for problem-solving. Its assembly of card types invites participants to employ a blend of the force-fit principle and best practices of user experience design within a topic in a playful, yet structured environment. This allows forming solution ideas in scenarios, each addressing a predefined problem and thereby forcing mental provocation. InnoCards is introduced as a new tool for diverse thinking, ensuring a broader spectrum of scenarios and stakeholder inclusion. During the workshop session, the participants are invited to be part of a trial run, answering the question of whether CityInnoCards (InnoCards adapted to the city and urban area context) can help in generating particularly novel solutions to a predefined problem within the city area. The participants are introduced to the cards' principal rules by a short presentation and are asked to evaluate the solution ideas and the card game itself.

Keywords

Creativity, Innovation, Product Design, User-Centered Design, Smart City, Workshop

1. Introduction

Including stakeholders during projects by allowing them to co-design services rather than designing them for them is especially helpful in projects with cities and municipalities [1, 2]. Early stakeholder engagement is also crucial for user-centered product development and (software) solution buy-in. However, during workshops, we have noticed stakeholders tend to cling to their initial ideas, leading to standard, vague solution ideas (from an expert viewpoint) and to overlooked use cases and potential user groups. Unsatisfied with the status quo, we pinpointed those problems and investigated potential measures to fix them. We designed the card game "InnoCards" for imagining novel solution ideas in a playful manner, using the force-fit principle [3] combined with condensed best practices from user experience design and rural area design [1, 2, 4]. The current deck, called "CityInnoCards", is designed for urban contexts. We distinguish between InnoCards as the concept and specific InnoCard decks for different contexts. By combining different card types, players generate novel solution ideas for specific

* Corresponding author.
† These authors contributed equally.
✉ jill-valerie.tamanini@iese.fraunhofer.de (J. Tamanini); jasmin.gorlt@iese.fraunhofer.de (J. Gorlt)
🆔 0009-0005-2464-6249 (J. Tamanini); 0009-0000-9362-5955 (J. Gorlt)

use cases, allowing them to break away from their usual thought patterns through mental provocation and incorporating domain-relevant stakeholders to create a user-centered service.

2. Cards and Gameplay

The card deck contains six different card types (see Table 1) displaying text and descriptive icons. Each card type represents an area of interest [1]. The combination of the drawn cards is utilized in creating novel ideas for a previously specified problem. The problem should be clearly stated in a specific manner (e.g., how to reduce the usage of cars in cities) to result in fitting ideas. In the current gameplay, four players have one and a half hours to create five initial and five iterated ideas each. Cards are drawn from a deck randomly, according to a predefined pattern and quantity (see Table 1). One round consists of creating an idea, challenging the idea through a chosen conflict card, and iterating it. The conflict card is not drawn but selected to make it particularly challenging. After the game is finished, we propose evaluating the ideas or parts of them for their usefulness for the targeted problem.

Table 1: Card types, their intention, examples, as well as the number drawn.

Card type	Intention	Examples	#
Topic	The clever combination of topic areas may result in solution ideas that enhance the original service.	Shopping & Local Supply, Event & Tourism, Mobility & Logistics	1
Scenario	The scenario cards create a concrete image in our minds by placing players into a place and a circumstance.	In social media/when it rains At the office/by candlelight At the town hall/stressed out	2
Stakeholder	Who is involved in the solution? How can the target group either assist or be assisted in overcoming a problem?	Start-ups Gen α (teenagers) Migrants	1
Trigger	Includes a what-if aspect related to the scenario and therefore triggers an immediate variation of the idea.	Think about tomorrow! Offer it for free! Make people smile!	1
Interaction and Trends	The interaction cards ensure that one looks beyond usual forms of interaction such as mobile or web applications and considers relevant trends.	AI, Robots, Wearables, Blockchain	2
Conflicts	By picking the most critical conflict, the idea gets challenged and iterated upon.	Is your solution inclusive? What if nobody uses it?	1

3. Interactive Session

CityInnoCards are designed to enable everyone to think of novel solution ideas in the context of City Design in a user-centered manner. We seek to evaluate the following research questions: RQ_1: To which extent can novel ideas be created with CityInnoCards? RQ_2: How well do they fit the problem space? RQ_3: In which project stage (i.e., while searching for a problem or after having identified a concretely stated problem space) should they be utilized? RQ_4: How easily accessible is the game? In the session, we will target mostly RQ_4. Participants of the CreaRE workshop can test the method by playing two rounds of the game. This will be enough

to get an idea of the game's mechanics and will enable the participants to give us initial feedback on our research questions. The session will be conducted according to the following outline:

1) **Introduction (5 minutes):** We give a brief introduction to the game and its background.

2) **Game Part 1 – Ideation (20 minutes):** The participants are divided into groups. Each group is instructed to find a solution for a stated problem in the context of Smart Cities. Within each group, three players search for an innovative idea that fits their drawn cards and the previously stated problem. The fourth player may integrate ideas but is evaluating the idea silently while inspecting the conflict cards, thinking about potential flaws of the emerging idea and how to challenge it. Group sizes can vary according to participant enrollment (at a minimum, a group consists of two people discussing and iterating together).

3) **Game Part 2 – Critique (10 minutes):** The "playing" group members write down their solution idea. Then the fourth player decides with which conflict card to challenge the solution idea. Afterwards, the group improves their idea targeting the conflict card and writes down their iterated idea.

4) **Presentation and Discussion (20 minutes);** The iterated ideas are presented to the whole group to showcase the possibilities of the cards. The participants can then discuss their impression of the game and the quality of the results.

5) **Conclusion and Evaluation (5 minutes):** In the last minutes of the workshop, we hand out a questionnaire to get a more detailed idea of how the game was received by the participants. In the questionnaire, we want participants to rate the method (RQ_4), their prior experience (in the field of Smart City and creativity), and their perceptions of the solution ideas that emerged (first insights for RQ_1) to identify to which extent the cards enable players to generate novel solution ideas, as how innovative the solutions are perceived, how well they fit the targeted question, and how easy it is to understand and access the cards.

4. Requirements and Benefits for the Participants

No previous knowledge is required, and everyone can use the game. CityInnoCards does not require any in-depth knowledge of the topic. It is designed to be self-explanatory. In the workshop, participants will practice divergent thinking, learn best practices regarding the urban design sector, participate in the creation of new ideas collectively in a holistic manner, and gain insights into a newly developed creativity method.

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