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Co-creation Techniques and Tools for Planning at Neighbourhood Level. Experience from four European Research and Innovation Projects.

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Abstract. This paper presents outcomes from the cluster workshop of the Horizon2020 SUNRISE, MUV, Cities4People and Metamorphosis projects, and specifically the workshop session for the use of co-creation tools and techniques across the four Horizon2020 projects. The workshop was organised by CIVITAS SATELLITE in cooperation with the Innovation and Networks Executive Agency of the European Commission on the 19th of November 2019 at the premises of INEA in Brussels. Several different participation techniques & tools are being used by the projects, including co-creation workshops, serious games, interviews, simple questionnaires at the place of the intervention, field trips, school scans and thematic walks/scans, cultural probes, focus groups, etc.. In general lines, the projects have opted for practical, hands-on tools rather than online and complicated tools. A series of key learnings about the practical use of those tools emerged; co-creation activities should try to incorporate diverse neighbourhoods and settings; it is preferable that only one challenge is addressed at a time; evidence is an excellent prompt for discussion; discussion topics should be important to the participants, rather than the organisers; silent observation helps achieve a deeper understanding; and methods and tools that involve the physical presence of the users at the place of intervention are most effective.

Keywords: cities; urban planning; transport planning; co-creation; communities

1 Introduction

During the past decade, planning practices, as well as Research and Innovation (R&I) practices, have been undergoing two fundamental changes. The first one regards the increasing engagement of users as co-creators and co-implementers of the desired planning solutions. To this end, the arsenal of participation tools and techniques that exist within practitioners' and researchers' reach has expanded without precedence. There is a tool for each stage of the co-creation process, addressing from the identification of needs, the setting of priorities, the ideation of the concept, up until the co-design and co-evaluation of solutions. Contemporary thinking posits that it is important to use a broad variety and different means for citizens and stakeholders to participate in the co-creation process, as this will ensure a more inclusive representation of the citizens' ideas, needs and concerns and agency from citizens that feel that their opinion 'counts'. Moreover, it will ensure a higher degree of innovation, as more ideas are brought to the table. The whole process is expected to lead to more sustainable results which are endorsed by larger parts of the population.

The second change that has been taking place regards the increasing digitization and the penetration of digitised tools in all planning and R&I practices. This digitization addresses different stages of the process and serves different functions, ranging from data collection, data processing, data-driven decision making. While digitization offers undeniable benefits, such as cost reduction and analytical accuracy, it does not come without risks. For example, the risk of exclusion of important or marginal population groups and the risk of missing the finer aspects of the participants' needs, aspirations and ideas are not to be overseen.

These topics are some of the key points discussed at the cluster workshop of the Horizon2020 SUNRISE (GA 723365), MUV (GA 723521), Cities4People (GA 723194) and Metamorphosis (GA 723375) projects, organised by CIVITAS SATELLITE in cooperation with the Innovation and Networks Executive Agency (INEA) of the European Commission (EC), which took place on the 19th of November 2019 at the premises of INEA in Brussels. In this paper, we present the main findings of the workshop

session specifically dedicated to the use of co-creation tools and techniques across the four Horizon2020 projects, with representatives from all the projects, as well as representatives from CIVITAS SATELLITE, INEA and other policy makers. This session was one of the four workshop sessions that took place at this meeting.

To this end, we first present the theoretical underpinnings of using participation techniques and tools for urban and mobility planning at neighbourhood level. We then describe the data collection setting and process. We advance to the presentation of the analytical findings of the workshop. The last section offers the major conclusions from the performed exercise.

2 Co-creation Techniques and Tools for Planning at Neighbourhood Level.

2.1 Co-creation Techniques and Tools

In this section we offer a definition of co-creation and cover some of the historical aspects behind co-creation and design thinking approaches. The historical aspects are followed by a presentation of the tools and how they were applied in the four neighbourhood projects.

We suggest the definition of co-creation as the creation, development and deployment of ideas and solutions emerging from a collaborative process among a group of key project theme's stakeholders (citizens, city representatives, designers, companies, makers, etc.). This collaborative process ensures that the ideas and solutions are implemented in the context they emerge and selected based on an informed and democratic process. In order to achieve these results, projects need to bring together groups of people from different areas, expertise and perspectives to work towards understanding current issues that may exist, as well as ideating to create solutions to tackle these issues, or even to innovate and create scenarios to be tried out and prototyped to test their validity and impact.

First, it is valuable to remind ourselves that co-creation tools and techniques are not new. They have evolved from psychology and sociology fields, making their way into consultancies and creative industries, as a need to reach, communicate, work with and understand people. In its early days it became widely known as 'participatory design', emerging from within Scandinavian contexts in the late 60s. It involved understanding how factory workers used machines, and adapting the machines to fit their use accordingly, and it soon became recognised as an important step when designing factory machinery [1]. This approach was well acknowledged and revived within design industries in the nineties, more specifically with the exponential growth of digital products and services, which require to be used by different target groups at various contexts. As part of this technological evolution, design practice shifted its approach from designing for people to designing with people; in other words, developing research and design tools and methods to include people in their design process. These tools were merged into one cluster, defining the co-creation tools and methods and consequently, the design thinking process. Despite its spread and history (the design thinking approach has been applied for over three decades by various companies, agencies and consultants such as IDEO, live-work, Engine, etc.), design thinking and co-creation methods gained a momentum in the first two decades of the 21st century. The tools, which have been applied widely and successfully in the private sector, have now started to catch up within the public sector, coming to play a key part in calls for proposal within EU tenders and current EU projects [2, 3].

Though tools are essential aids in the facilitation of co-creation, to ensure a full implementation of co-creation, a project-team also needs to have full understanding of the entire process, as well as the mindset and skills to improvise and adapt to uncertainties, specific situations and people. In this paper we focus primarily on tools, but we are very much aware of the need for specific skills to have a successful implementation of co-creation.

The four projects share the co-creation approach, which was the red thread going across the four neighbourhood projects, both surprising and challenging cities to develop unique solutions to urban planning and development, however each with their own specific focus. In short, the co-creation tools can be divided by specific purpose (research, team-building, ideation, assessment, validation) and they are described in the following.

1. **Research:** The research tools cover different ways to learn about citizens and stakeholders' needs, perceptions, habits, preferences, etc. These tools can be deployed at different times of the projects, however, the projects should always commence with them, as the starting point for understanding current problems, needs and opportunities.
2. **Team-building:** These tools are deployed to bring the groups together, learning about each other and creating a common language to be used during the project process. More importantly, these

tools are responsible for creating a sense of trust, equality and reliability, leading to a positive collaborative group.

3. Ideation & development: These tools are primarily applied towards creating other perspectives and options, which might not lay obvious. They engage participants into playing with perspectives through various media (drawing, talking, role-playing, etc.) to develop ideas and scenarios that fit into solving or addressing issues uncovered through the research tools.
4. Assessment: The assessment tools help participants gain a perspective on their ideas, creating an understanding about their feasibility, impact and positioning in regards to other ideas and the project budget and timeline.
5. Validation: Validation tools are used towards grasping how the ideas and solutions work as planned and how they might set a new standard for the community; they can be used before, during and after carrying out the deployment of the chosen solutions.

These tools, when combined, create a holistic approach throughout the projects and facilitate their development and implementation. In the next section, we elaborate how some of these tools were applied in the planning process of the neighbourhood projects.

2.2 Using Co-creation for Planning at Neighbourhood Level.

The versatility of the co-creation tools has been well demonstrated through the distinct focus of each of the projects. Despite the common neighbourhood, public space and mobility thread, each project had its own lens and therefore, required a tailored plan to carry out not only the activities, but their processes as a whole.

Due to the array of stakeholders and projects' goals, the organisation of dates and events need to be well-scheduled and planned to achieve their highest impact. For example, in the case of the Cities-4-People project, development tools, such as roadmaps were combined with blueprinting, bringing an even more detailed structure of the whole process, including which tasks need to be executed before, during and after each of the projects' interventions. Collaborating using these tools was a way to bring out the knowledge emerging from within the participants' own roles to define and organise the project interventions. City officials and transport authorities knew of regulations, citizens and associations' representatives knew of other related community or school events and had specific wishes. By working together in describing the steps and requirements for each of the project phase, the various stakeholders have had a platform to discuss and coordinate their actions and these tools were facilitators towards a better communication and planning process.

A key aspect of these processes is the tacit knowledge created and residing among the members of the city representatives and their local community who have taken part in the projects. If not well documented, this knowledge can be easily lost by a change of employees or community participants. Therefore, to make sure this knowledge is secured, shared and replicated, some of the co-creation tools, such as roadmaps and blueprints, can help achieve exactly that; make the knowledge and project experience tangible towards future developments using related processes, so it can be shared with other employees and communities.

Collaborating with citizens and their associations throughout the ideation, planning and execution of the project events, cities gain a wider reach, which in return make these projects more visible while also giving citizens an aspect of agency and ownership, key to a higher project impact. Overall, the breadth of co-creation tools have proven to not only to facilitate projects involving a wide range of groups at neighbourhood level, but also to engage and inform city officials and citizens of the various opportunities lying dormant through usual top-down approaches. Furthermore, by applying such tools, cities have the opportunity to also learn from their citizens, who might be able to contribute with their own set of skills, which would be otherwise unknown.

3 Methodology

The cluster workshop of the Horizon2020 SUNRISE (GA 723365), MUV (GA 723521), Cities4People (GA 723194) and Metamorphosis (GA 723375) projects, titled "Co-creating Urban Mobility in Neighbourhoods" was organised by CIVITAS SATELLITE in cooperation with the Innovation and Networks Executive Agency (INEA) of the European Commission (EC), and took place on the 19th of November 2020 at the offices of INEA in Brussels, Belgium. A series of presentations and interactive sessions during the entire day of the workshop took place, addressing policy objectives related to sustainable planning of mobility and use of land with an eye for innovation at neighbourhood level; the core ideas behind the projects and their approaches to co-creation, impact assessment and scale-up;

a World café workshop comprising four dedicated tables running sessions that addressed different topics; and a final roundtable presenting and discussing the workshop outcomes. A total number of 27 participants attended and contributed to the activities of the cluster workshop, representing policy makers as well as researchers, industrial partners, and citizen associations participating in the projects.

The World Café is a creative technique that creates an environment of open conversation and action by facilitating dialogue and knowledge and ideas sharing. The typical World Café format includes a first stage where the participants discuss among them and a second stage where results are summarised and discussed. The first stage takes place at so-called “café tables”, each of which is overseen by a moderator and is dedicated to the discussion of a specific topic. Participants are called to change tables at regular intervals, thus passing through as many tables as possible and discussing as many different topics as possible. Table moderators, on the other hand, stay at the same table, take notes and summarise the previous conversations to the newcoming table participants. In this way, ideas are cross-fertilised as the first stage of the World Café progresses. During the second stage all the main ideas are collated and presented by the moderators to the participants in a plenary session. The final outcomes are presented to the participants, a cross fertilisation across topics take place, and new possibilities are explored [4].

In this paper we present the results of the workshop session about “Participation techniques and tools to engage citizens and co-create at neighbourhood level”, moderated by Margarita Angelidou from Q-Plan (Cities4People) and Salvatore Di Dio from Push (MUV). In total, 25 stakeholders -quadruple helix representatives from all the projects, as well as CIVITAS SATELLITE, INEA and other policy makers-participated in the session across four tables and respective sessions.

The participants were first introduced to the concepts that this session aimed to address. They set out by discussing that it is important to provide a broad variety and different means for citizens and stakeholders to participate in the co-creation process, because this will ensure:

- a more inclusive representation of the citizens’ ideas, needs and concerns
- an agency from citizens that feel that their opinion ‘counts’
- a higher degree of innovation, as more ideas are brought to the table
- more sustainable results, suggested and endorsed by the majority of the population

Yet, the use of co-creation techniques and tools also creates challenges:

- how to identify the technique/tool that best serves the purpose of the co-creation exercise?
- how to ensure access of all population groups?
- how to get a representative mix of participants?
- how to approach sensitive/marginalized population groups?
- how to balance the use of online/offline tools?
- how to sustain interest, avoid participant fatigue and cultivate communities of interest/practice?

In sequence, the participants were asked by the moderators to reflect upon the following questions:

- **Q1. Which techniques and tools have you used in your projects and how?** Name the techniques and tools (Fig. 1). Explain the stage in which they were used (for example co-creation, co-implementation, co-evaluation), the target groups, for how long they were used (hours? days? months?) and how many participants joined. Was participation open or upon invitation? What kinds of financial and human resources were required (e.g. for preparation, implementation and follow-up, logistics, equipment, techniques)?
- **Q2. What challenges did you encounter in using those tools?** What would you change if you had the chance to start over? Selecting the most appropriate? Obtaining permissions? Setting up? Appropriate duration? Attracting input? Analysing collected data?
- **Q3. Ultimately, which are the success factors for the effective utilization of techniques & tools for co-creation at neighbourhood level?**

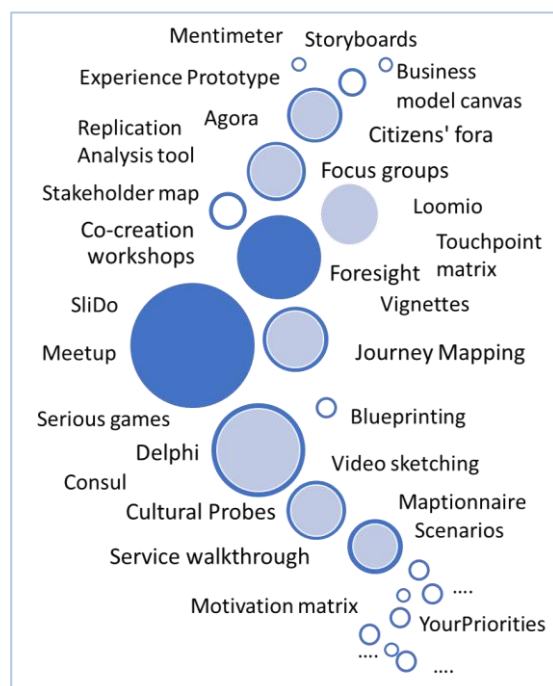


Fig. 1. Examples of techniques and tools presented to the workshop participants (authors’ development).

A lively discussion followed, lighting up free interaction among the participants, who exchanged ideas and experiences. Following the World café methodology, the moderators collected, grouped and synthesised those ideas into organised concepts which they presented in the plenary session that followed.

4 Findings

4.1 Techniques and Tools used

Several different participation techniques and tools are being used by the projects, including co-creation workshops (broad range of specific methods and formats), serious games, interviews, simple questionnaires at the place of the intervention, field trips, school scans and thematic walks/scans/signalling (especially for minors and challenged users), public stands, open fora, cultural probes, focus groups, Delphi and YourPriorities [5].

In general lines, projects have opted for practical, hand-on tools rather than online and/or complicated tools. Some participants expressed the belief that online methods and tools are less effective than face-to-face ones (Fig. 2). Moreover, online tools are seen as especially time consuming; they need to be active for a considerable amount of time in order to attract adequate input from participants. They serve, though, in cases where physical accessibility of participants is restricted. In any case, offline and online methods have to be in right balance.

The downside of one-on-one interactions and the use of face-to-face methods and tools, on the other hand, is cost. They require time and human resources, hence they are expensive. Some projects encountered challenges in getting enough personnel to moderate the workshops and administer the interviews on a voluntary basis.

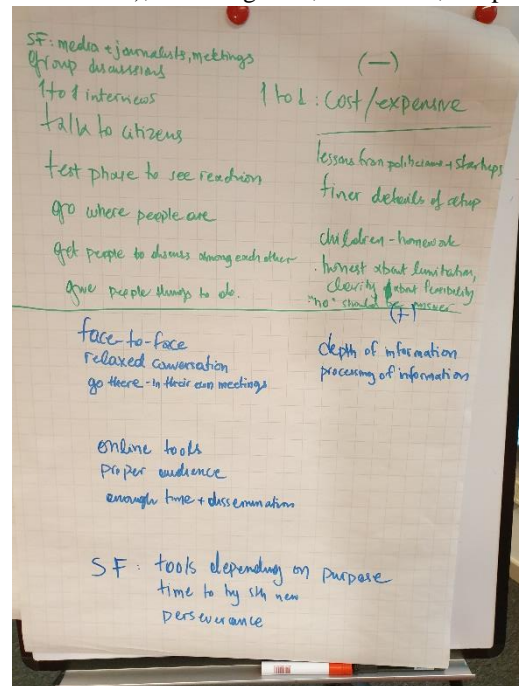


Fig. 2. Collection of ideas during the workshop session (authors' records).

4.2 Deciding which participation techniques and tools to use to engage citizens and co-create at neighbourhood level

Participation techniques and tools should be appropriately selected and combined to serve the purpose of the co-creation stage and scope, the involved participants, as well as the desired outcomes. One step further, the appropriate mix of such tools should be selected, in a way that allows equal access of all user groups to the co-creation process. This includes the mix of online/offline techniques, since many participants lack access to online tools. Diversity should also be sought in terms of physical settings.

Moreover, the use of user-centered approaches that include immersion in the natural environment and social events of the users is very important. Most project teams prefer to go themselves to the natural environments of the participants and incorporate co-creation in the meetings of the communities. Immersion allows for a substantial observation of attitudes, perceptions and challenges. Thus, face-to-face relationships, one-on-one interviews and relaxed conversations establish relationships of trust and cooperation.

In co-creation, time is deemed either an asset or a liability. The participants should not be pressured, but instead given enough time to think about their input. It is important to respect the learning curve of the participants and the social skills that they are developing during the co-creation process. In using the tools, it is important to start early, securing enough time that will allow for trials. A test phase to see reactions is helpful; if something does not work, there is flexibility to try something new.

Regarding dissemination, enough time should be foreseen to disseminate the events, implement the activities reaching an advanced degree of information depth, process the information and then draw

proper conclusions. In any case, it helps to bring in the media and keep them engaged. Positive experiences were reported by bringing in journalists and organising open meetings and group discussions where media representatives are invited. Professional and advanced marketing techniques to attract and sustain participant interest are also welcome.

4.3 Implementing the Exercise

The finer details of the setup are of increasing importance, since they offer the means to make the participants feel valued. Such details include the place, time and welcoming of the participants.

The implementation process can start from evidence. This evidence will provide prompts and triggers for the participants to engage more quickly and substantially in the co-creation process. There exist instances of evidence that easily trigger reactions, such as, for example, the coverage of green spaces in the city. Every co-creation instance should ideally address one challenge at a time and hands-on topics that are easy to comprehend. Only this way will the participants have the ability to reflect, talk, and immerse deep into the essence of the topic. This will help achieve a certain depth of information, which is required to address a specific challenge. Moreover, the selection of an important and possibly sensitive topic for the community will attract interest and participation.

During the co-creation process, it is important to get participants to discuss amongst themselves. This way the conversation carries on and the input is both richer and cross-fertilised. Besides conversation, silent observation can prove especially effective during the prototyping activities, because it allows the moderators to listen to the discussion of the participants and understand which issues matter most to them. It is also important to see participants not as mere input providers, but to actually engage them in doing or producing something. They can also have some ‘homework’ to take away – a practice that was successfully adopted by one of the projects.

Visual tools are also very helpful. The use of maps, pins, pictures and pictograms (especially for specific and vulnerable population groups) are particularly helpful. It is also advised to use methods and tools that involve the physical presence of the users at the place of intervention. It is helpful to visit the place of the intervention with the user. It was suggested to walk along with them around the physical place of the intervention. This will help them identify and communicate points on the spot.

Last, but not least, it is very important to document the names of the participants. It often happens that returning participants do not remember the views they have expressed in previous co-creation activities. Documentation should also be kept for reasons of transparency and as a way to protect the administrators of the co-creation exercise. All related measures should be designed in advance.

4.4 After the Exercise

Critically, tools are not what make co-creation successful: it is the people that know how to implement them, in a logical way, following a process. The co-creation exercise should thus have a follow-up, especially if it has involved face-to-face participation techniques and tools, such as field trips, focus groups, workshops, which encourage the development of personal relationships. The follow up would ideally include the results of the activity.

In general, it is advised to make the outputs publicly available in the form of open knowledge. This will sustain the interest of the participants and keep the public conversation ongoing. It is also an active expression of the intention for transparency and openness.

4.5 Ultimately, why co-create for planning at neighbourhood level?

Compared to other solutions, co-creation can work better in the domain of planning at neighbourhood level because it has an anthropological fundament. It addresses the human aspect of place ownership. People take individual decisions, but space belongs to everyone and that’s why co-creation can work better. It is not the car of the building, but the user that is affected by the decisions being made in this domain. Hence personal beliefs, emotions and convenience interfere.

More particularly, the right to move and use public space is a very emotional issue. Each and every one of us should have the right to be access public spaces and to move freely therein. Sustainability at neighbourhood level has practical, daily life implications for all of us. It touches everyone and has social implications. It defines our schedule and lifestyle. The users have a high stake, they have something to lose and to sacrifice, which is their usage and occupation of space in the way they want and in sequence the ability to plan their schedule according to their convenience.

In parallel, sustainable use of space at neighbourhood level brings together many stakeholders and hence provides a fruitful field for cooperation. It is a zone where anyone can participate.

How we use public space and how we choose to move is also a form of a ‘status symbol’. Depending on how quickly, conveniently, costly, cleanly and freely we move in space, we perceive our social status and position ourselves in society. For example, people get very emotional about their “right” to use the car; the ownership of a private vehicle and the ability to park it exactly out of our homes is seen by many as a symbol of power and freedom.

Finally, it is something that many people believe they have no significant power over, that they cannot change it. They feel far from this decision-making process. Hence when they are given the opportunity to express their views, they really want to take advantage of it.

5 Conclusions

All the examined projects include an ample variety of co-creation techniques and tools, fittingly selected to serve the objective of each planning stage. Many of these tools can be found in the so-called ‘Co-creation Navigator’[6] provided by WAAG society, and aiming to serve as a reference guide to co-creation tools. This guide was developed by WAAG in the context of the two CIVITAS projects C4P and MUV and is currently being populated with some of the methods and tools developed in SUNRISE.

All in all, it seems that co-creation in the planning domain in Europe is increasingly gaining ground and becoming a well-established norm, especially in innovation-related projects. Although this may seem normal today, it is worth remembering that 10 or 20 years before the situation was much different, with citizens and other stakeholders usually being only consulted or not involved at all in European countries that did not have such a tradition.

Yet it emerges that project managers retain trust in the more direct, immersive and interactive co-creation techniques and tools, and especially the ones that require direct engagement with the stakeholders and immersion in their physical environment. Although an abundance of digital tools to support the process is available, they are less preferred compared to the more direct ones. It is thought that digital tools risk missing the finer details and aspects of user needs, perceptions and requirements.

That said, co-creation offers techniques and tools that serve better the objectives of sustainable urban planning and mobility at neighbourhood level, due to the user-centered and anthropological nature of both. Mobility and the use of public space are both a ‘personal’ and a ‘social’ matter; they represent major conflict areas, where personal needs, preferences and beliefs are called to adjust to the sake of broader well-being. Moreover, they shape the identities of people and the identities of places.

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