

Open and inclusive collaboration in the design of the People-Centred Smart Urban Communities

Andrew Bullen¹, Janine Huizenga²

¹ Sarl Creative Cooperative, 6 Rue de la Maïonette, 06510 Le Broc, France

² Sarl Creative Cooperative Amsterdam Office, Rozengracht 105-E2,
1016 LV Amsterdam, The Netherlands
andrew.bullen@orange.fr

Abstract. On the basis of experience gained, and methodologies developed in the collaborative design of innovative, smart urban communities across Europe, this paper proposes a rationale, with associated methods and examples, for an open, holistic, and inclusive design process. This approach implies collaboration across disciplines, cultures, value systems, functional and social levels. In this context, the paper reflects upon the benefits and implications of such aspects as 'multi-disciplinary', 'multi-cultural' and 'multi-level' on a practical level and considers the critical role of trust, shared values, vision, narrative and ownership within the design process.

Keywords: Open, inclusive, sustainable, design, innovation, culture, identity, mapping, reciprocity, trust, empowerment, narrative, digital, skills, literacy, multi-disciplinary, multi-cultural, multi-level, values, ownership

1 Introduction

Over the past years, the Creative Cooperative has worked on developing an open and inclusive methodology and practice for the innovative design of urban communities, which has at its core inclusive collaboration between all stakeholders, whether local residents, politicians, designers or architects.

This paper details two essential aspects, which underline Creative Cooperative's approach to the design and development of People-Centred Smart Territories.

- Inclusive Design for Sustainability
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- Open design for Innovation

These two design factors are, of course, closely related, but will be dealt with individually to emphasize their importance within this paper.

2 Background

In addition to our general work and experience within the European Creative Industries, this paper makes specific reference to two major urban design projects:

The Cultural Mapping project was centred in Preston, North West England from 2008 to 2010, and represented a focused effort to enable urban planners and citizens to work in close collaboration on the development and regeneration of Preston's urban environment. This project was driven on an immediate level by the desire and need to discover and record the identity of the people of Preston, with their inherent emotional, cultural and social needs and aspirations, particularly at a time of significant social, cultural and industrial change in the region. Subsequently, local residents would be empowered to express their needs, and work together with planners in order to implement their aspirations, in addition to learning new digital skills, which would ensure that their "voice" would continue to be heard.

The European Street Design Challenge [1] has become a global urban community design competition for international teams of young designers and architects. The initial concept arose from a two-day international, creative workshop devised by Creative Cooperative entitled "The Digital City in the Next Five Years", as the international part of the first Futur en Seine festival in Paris in summer 2009. This workshop brought together some sixty international guests (senior politicians and political advisors, urban planners, thinkers, digital creatives, designers, business, research) and their Paris City/Region equivalents to collaborate in discussing and designing the new paradigm of the digital, SMART city. The approach from the very start was collaborative and intensive: small groups of multi-disciplinary, multi-cultural experts working together to design the urban future.

From this basis, the first actual European Street Design Challenge was hosted by Amsterdam in September 2010. The open, multi-disciplinary, and multi-cultural approach to smart urban design remained central to the Challenge methodology. In addition, the ESDC now took to the streets" to focus its attention on a specific, targeted area within the hosting city, with its own urgent urban issues. In this case, the area around the Red Light District was selected for "redesign". This central urban district, a magnet for tourists visiting Amsterdam, is also the home to a vibrant and diverse urban community, which, however, is under threat from fragmentation, as the city attempts to "clean up" an area with a centuries old tradition, part of the DNA of Amsterdam itself. The Amsterdam Challenge also introduced the critical aspect of

working as closely as possible with local residents and representatives to "co-create" the new community.

Since this first ESDC in Amsterdam, the Challenge has taken place annually in Paris, in addition to a 'prototype' event in Saint Petersburg in 2013. Whilst the scope of international participation has increased exponentially - from France and the Netherlands in 2010 to include design teams from the United Kingdom, Austria, Finland, China, Russia, Italy and India at the present time - the aim of the Challenge has remained the same: open, collaborative design of shared, connected, and interactive smart community spaces and services, within a physical / virtual context.

3 Inclusive Design for Sustainability

All too often, the opinions and ideas of important stakeholders, particularly local residents, are ignored within the planning and design agenda. At best, demographic data concerning the residential area is collected and "fed into" the design process on an anonymous basis.

This approach fails to recognize an excellent opportunity to integrate and involve local residents within the creative planning and design process. Only such integration can create the "active" citizen and thus ensure a really comprehensive and sustainable approach. From our experience, the following actions can be used to add essential support to this citizen integration process:

3.1 Mapping the cultural identity of the target community area, capturing local social needs, emotions and aspirations

A city or territory has both a physical and emotional infrastructure; the latter reflecting the fears, hopes and aspirations of its citizens. These intangible assets, created over time, make up the city's character and identity. Any attempt to develop people-centred smart territories must first discover and record the identity of the local people, with their inherent emotional, cultural and social needs and aspirations.

The next step is to integrate these "emotional" and socio-psychological data, and the local residents themselves, into the overall community design process to achieve a new, more socially comprehensive, innovative and inclusive approach to urban planning, regeneration and the shaping of the city of the future.

From 2008 to 2010, Janine Huizenga from Creative Cooperative focused on the development of a planning tool that enabled urban planners and citizens to work in close collaboration on the development and regeneration of Preston's urban environment. Essentially, the production of easy to use, creative media tools in combination with specifically designed co-creation workshop methodologies and formats enabled citizens to participate actively in the sustainable urban regeneration process. Participating citizens were also equipped with a mobile phone, which could capture images, sound and their own feelings and comments. They could

subsequently build their own narratives around these media, which in turn could then play an essential role in defining the cultural and emotional identity of the area. This information could then provide planners, designers and architects with an extremely valuable tool, in the form of focused, structured and qualitative data, in the sustainable development of the area. In return for the providing the data, the local residents learned new digital skills. Reciprocity is an essential and crucial factor in this form of collaboration.

The following aspects proved to be essential components in the process of active citizen participation, collaboration and co-creation:



Fig. 1. Locals and experts working together in the Cultural Mapping Project to design their future neighbourhood, 2008-2010 University of Central Lancashire UK.

3.2 Opening access for local citizens to the urban design process

Generally speaking, participating citizens were not accustomed to being asked to give their opinion on their neighbourhood. In this case, not only were their opinions sought, but they were encouraged and supported to develop and integrate their views into the whole creative design process. After initial uncertainty, this opportunity was generally greeted with enthusiasm, and willingness to participate.

3.3 Gaining and fostering trust

Many of the participating citizens came from deprived communities within a reputedly "hard" industrial area³. These participants received expensive mobile phones and software for the duration of the development period. This trust was appreciated. Despite warnings to the contrary, all the expensive mobile phones, and accompanying media, were returned undamaged. This is just one example of the critical importance of trust in any creative collaboration, particularly between partners from various backgrounds or cultures. We will return to this theme later in the paper.

3.4 Creating a Narrative

Why use the narrative technique to elicit personal stories from participants in the Cultural Mapping workshops? The narrative is the most direct and appropriate means to enable people to express their own emotional and cultural relationship to a physical or geographical location in their environment. If asked about a street, square, or market in their city, people generally do not respond with a physical, "objective" description of the place. Rather, they "tell a story" – about a relative or friend who lived there, a memorable incident which once took place, a building which they particularly like – which relates their own very personal and subjective relationship to the location. In this sense the urban narrative is the essential expression of personal experience, emotion, memory and cultural identity with regard to the surrounding, physical environment. As opposed to giving responses in a "traditional" semi-structured interview, Cultural Mapping participants are able to present their own frame of reference with their own "narrative response" to a situation, location or environment. For this reason, "story telling" is a basic and essential component of the Cultural Mapping workshops.

The success of story telling in the workshops has serious implications for the design process and interface. A narrative and reflective process must take place at the time of information capture; otherwise the data lacks content, cohesion and real meaning on a human and cultural level. This 'human level' of data creates immense value in the further design process.

3.5 Engaging and Empowering local residents through expression

The focus on small personal experiences within the resident workshops significantly enhanced the engagement of the participants and indeed lowered the threshold of level of entry into the development process. The participants were more enthusiastic and engaged, because they did not merely "feed in" data without any clear immediate

³ It is worthwhile pointing out that, particularly in perceived "hard" or deprived areas, we have found it extremely valuable to seek collaboration and support with citizens who themselves have already taken initiatives to instigate "grass-roots" changes from below.

benefit for themselves, but rather have an immediate sense of strengthening their identity and their relationship to their environment and their peers within their environment. They feel empowered by expressing their feelings to others.

3.6 Engaging and Empowering through learning

Not only the feeling of being able to express their identity provided the participants residents with a "voice" and a new sense of empowerment. The fact that the participants learned new digital skills - image and audio capture, digital processing, simple movie making - in the course of the narrative process was also a critical aspect in the building of engagement, empowerment, trust and confidence. Moreover, those digital skills had a direct relevance to their lives, and were not merely learned as an anonymous means for self-advancement.

3.7 Design Literacy for All!

Through the interaction and collaboration within the narrative and reflective process described above, local citizens can develop their own "design thinking" capability, and indeed a level of design literacy, as they learn to transfer emotion and reflection into a structured design process. This new skill enables them to be a valued and active partner with other "experts" in the design team.

4. Open design for an Innovation

Why then is design literacy, inclusion and participation so crucial across a diverse set of stakeholders? Because the interaction of multiple, inter-related social, economic and human factors within the present urban design landscape calls for a non-linear approach: An open, holistic, interactive, and multi-disciplinary process is required.

The word "open" implies that different and diverse perspectives and considerations are taken into account within the design of the innovation process. This suggests more innovative collaboration across disciplines, cultures, value systems, functional and social levels - a multi-disciplinary, multi-cultural and multi-level innovation and inclusion process. In effect, this means:

4.1 Working in Multi-disciplinary and Cross-functional teams

At the risk of labouring a point which is already gaining increasing creative industry acceptance⁴, it is imperative to integrate inter-disciplinarity within the creative design

⁴ It is perhaps worthwhile mentioning the role and impact of the MIT Media Lab here. This forerunner of the Digital Creative Industries championed the idea of a "human centred, open"

environment, either within the team itself, or by extending contact across disciplines and functions within the whole work domain and value chain. Interaction between different areas of expertise and creativity, focused on the same goal, is a clear catalyst for innovation, and simultaneously provides a wider and more sustainable scope and basis for co-ownership and understanding across the creation value chain. Brilliant educationalist Sir Ken Robinson has emphasized the need for children to be able to continue to develop creativity and socialization in a naturally interdisciplinary way, seeing the world as a myriad of diverse, yet connected possibilities. It is frightening to see Sir Ken's examples and statistics of how this creative, "interconnected" mode of thinking is "educated" out of children at a young age⁵. The creative is an excellent place in which to use the full impact of this "connectedness".

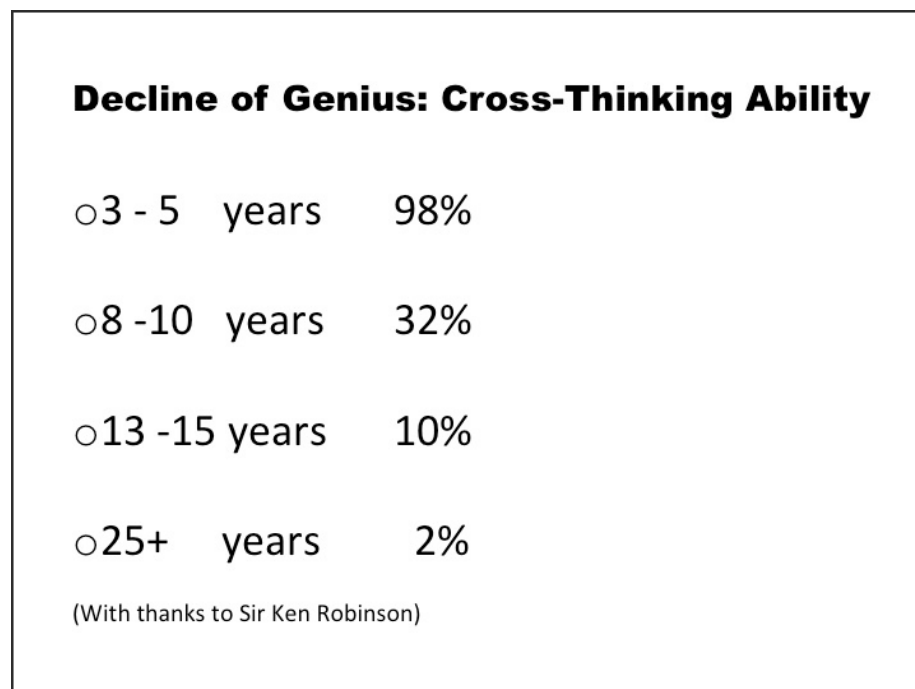


Fig. 2.. "Out of our Minds: Learning to be Creative" by Sir Ken Robinson

fusion of technology, media and design. Not least, the Lab gave credibility to the possible impact of the connected, interdisciplinary approach for business, and their hands-on "demo or die" approach gave high visibility to business management of the commercial potential within "disruptive" lab experimentation.

⁵ For a more detailed and entertaining explanation, see Sir Ken Robinson's highly acclaimed TED presentation: www.ted.com/index.php/talks/view/id/66

In the course of the ESDC process, we have witnessed the importance of integrating multi-disciplinarity within the various creative teams. A mixture of strong conceptual, visual, technical, spatial/architectural, and strong social empathy have proved to give a significant advantage to design teams which been striving for innovative, sustainable solutions with a particular social and economic context.

4.2 Working in Multi-cultural teams

Our experience also testifies to the value of including multi-cultural perspective within the innovation process. This may seem evident at a time of an increasingly multi-cultural work force due to a more free movement of labour, together with increased levels of immigration in an anyway more multi-cultural demography. In addition, business and services are generally expected to cater for a more global, multi-cultural market. However, multi-cultural inclusion in the innovation process is more than just a pragmatic "catering for percentage increase". The multi-cultural perspective can radically enrich the innovation process, in the same way as cross-disciplinary fertilization. Without any doubt, diverse cultural backgrounds can create very different creative perspectives and expertise, for example, with regard to design, technical basis or social application, which can then form a strong complementary force for innovation and co-ownership with other team members.

Our experience of working with international teams of young designers, architects and technicians in the European Street Design Challenge shows that innovation, co-ownership and co-responsibility are considerably heightened by the input and mutual recognition of different cultural perspectives and strengths from the beginning of, and subsequently throughout the innovation process. We have no doubt that the inclusion of team members with inherent strengths from particular cultural or country backgrounds can considerably increase the innovative potential of a targeted design.⁶

⁶ The question of cultural origin and propensity to innovative or creative behaviour within a team is certainly a point which merits more discussion and research. We are in the process of continuing this line of research at the moment, particularly with regard to Russian cultural background and applied creativity. From our experience to date, national background, and associated cultural and educational factors can certainly influence creative impact within the team e.g. Russian creative behaviour tends to be quick and problem oriented, French more reflective and aesthetic, Dutch are pragmatic...



Fig. 3. The Chinese conceptual contribution to the innovative redesign of Saint Denis La Plaine at the 2012 European Street Design Challenge in Paris.

4.3 A Multi-level approach

Our experience with the ESDC has shown that, in addition to local resident participation in urban community development workshops, it is essential gain to the engagement and support of local politicians within the same process. There is much to be learnt and gained by such local political leaders from direct participation, "getting one's hands dirty" in the development process, as for example, with a Paris deputy-mayor who actively participated in one of our FabLab workshops to build new inner-city models. It is also an excellent way in which to strengthen the trust and confidence of other participants in the design process that their efforts are being recognized and are taken seriously.

4.4 Creating Trust and Sharing Values

As already mentioned, trust is the key to sustainable, inclusive design innovation. The basis for this trust is a shared value system, which ensures shared goals, co-ownership and co-responsibility. From our experience, it is simply not enough to embody generalized goals within a broad "mission statement". Such a statement is all too often forgotten after initial introduction, and anyway too general to be of specific relevance. Our experience shows that values can, and should be negotiated and shared across the

team for each potentially new and innovative project. These values can then remain a touchstone for further development⁷. Such value-related innovation goals are also critical in generating commitment and engagement across the team, and managing expectations with regard to feasibility, funding and scalability.

Table 1. The shared defining values of cross-disciplinary transport industry experts for the design of a new digital Personal Transport System, Amsterdam 2008.

Group 1	Group 2	Group 3
1. Curiosity/Amazement/Discovery	1. Knowledge	1. Inner Circle
2. Community/Relationship/Family/Friends.	2. Friendship-Loyalty	2. Health
3. Esthetics/Comfort-Physical Well-being	3. Freedom-Autonomy-No Limits	3. Freedom-Autonomy
4. Balance Nature Body-Health		4. Beauty in Nature & Culture
5. Self-development		5. Trust/Confidence-Inner Peace

It is also essential to include multi-disciplinary, and multi-cultural perspectives with such value negotiations and definitions. Such perspectives provide a "real-world" richness to reflect cultural complexity, and promote a non-linear, disruptive approach through mixing traditionally separate disciplines.

4.5 Small Teams

From a practical perspective, and particularly within the Digital Creative Industries, smaller, focused teams, incorporating a mix of traditional disciplines, favour the development of stronger creative and innovative potential, and the building of shared values, visions, language, narrative and ownership. The very fact that lines of communication are much shorter within such an environment promotes greater understanding.

Trust engendered within such a compact team ensures an environment where individual members can think differently, can dare to express these ideas, and can gain confidence in their creative ability. The team can also learn and develop further together.

⁷ We use a "Value Ladder" to negotiate and define shared values for our work in the Challenge and with business workshops. This "probing" into shared values with a cross-disciplinary team can lead to some surprising and enlightening results: e.g. a team of multi-disciplinary managers and leaders from across the Amsterdam/Dutch transport industry agreed on such personal values as "freedom", "adventure", "knowledge acquisition", and "self-development" in their definition of the traveller experience. These values greatly influenced the design of the new Passenger Transport Application (see image).

4.6 Sharing a Vision

Shared values create a basis for a shared vision, but shared values alone are no guarantee for a shared vision. An innovation process must create and test future scenarios for an intended outcome in order to be sure that the vision of the future product or services is shared with conviction and insight throughout the innovation and production chain.

4.7 Sharing Ownership

The engagement and active participation of local residents in the development of "their" urban area played a crucial role in the success of the Preston cultural mapping project. A lack of transparency and involvement in the creation and production process causes alienation and disinterest. An open, inclusive and co-creative innovation process provides a unique opportunity to create a feeling of co-ownership. As already described, during our Cultural Mapping work in North-West England, it was amazing to experience how "disenfranchised" residents can work with planners in designing their neighbourhood, if they are engaged and involved in the process, with the appropriate tools, and believe that they co-own the result.

4.8 Sharing a Narrative

We discussed the role of creating narrative within the Cultural Mapping project. Shared values and a shared vision also need a shared narrative, story or understanding of how this all "comes together". This shared narrative also crucially provides shared identity. This shared identity suggests equal participation and responsibility in the work innovation process: a "we" rather than "they" buy-in across the organization⁸. It is essential that "small" personal narratives of individuals within the design process also fit in with the "big" narrative of the overall development. From this perspective, it is critical for all those involved in the development process to build future scenarios, including "Day in the Life" narratives together.⁹

4.9 Sharing Language

⁸ Interestingly enough, I recently heard philosopher Roger Scruton propound this very same view on the progressive shared narrative as identity within the organization with regard to the European Union: the EU cannot go forward as a shared democratic entity, as the "shared narrative" lies within each country rather than the European whole.

⁹ We had an excellent creative time working with the Dutch Tomato Growing Industry to redefine the changing role and image of the industry sector, the whole narrative of healthy vegetable production and consumption for the future, and the narratives of the individual industry players within the tomato design, production and distribution chain.

If you talk to people engaged in an innovation process, they might well share the same values or visions, and yet use a totally different kind of language to express these concepts, or, conversely, use the same word to express quite a different semantic. Technical jargon can be a huge source of misunderstanding, particularly in connection with new technologies, and the "linguistic" interface between brainstorm, design, technical development and management demands particular attention. As already described above, the development of a shared language was crucially important in the design literacy process of the citizens in the cultural mapping project.

Postscript

In a complex social and global economy, the design process has been moved from the end of the innovation and development chain - to a more "cross-chain" role, present in every phase of the creation and implementation of new services and products, whether in healthcare, the household, or inner city regeneration. By the same token, wider insight into the whole innovation and development process, and sharing of information, is critical across the whole community of stakeholders, a culture of participative and sustained innovation.

In this context, the designer has a key role to play in shaping the urban communities of tomorrow. From our perspective, we increasingly see the need and value of an "embedded" designer, part of the local fabric, who acts as a "mediating" agent in the development of new smart community models.

In this sense, we continue to work on the development of innovative, open and people-centred design platforms within a strong social and personal framework across Europe. As collaboration is a key word in this paper, we would welcome contact from those wishing to take part in the ESDC, with interest in developing similar platforms, or wishing to share their ideas on any aspect of this paper, particularly with reference to the impact of culture and identity in open design for innovation.

References

1. European Street Design Challenge, <http://streetchallenge.eu>