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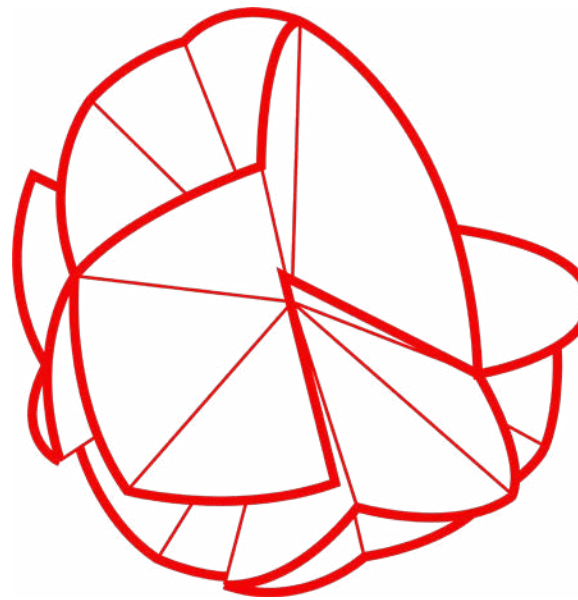
Disrupting Geographies in the Design World

Proceedings of the 8th International Forum of Design as a Process

Alma Mater Studiorum — Università di Bologna



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A Meta-Analysis for an Interactive, Intersectional and Inclusive Exhibition Based on the SDGs

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Abstract
The main goal of the project is to create an interactive exhibition, innovative and technological in its approach, that aims to create awareness and promote the knowledge of the Sustainable Development Goals of the Agenda ONU 2030 – in particular, on the value of social and environmental sustainability. 178 Countries adopted a common agenda to preserve our planet for the first time in 1992, during the Rio de Janeiro Summit. From that moment, the concept of sustainability has changed forever and has been changing ever since. In this paper, after understanding the state of the art in the field of the interactive exhibition, it is going to be explained how the methodology is applied in order to evolve from a desk and field analysis to a concept definition. These key points will then help define the concept in the shape of an operative strategy with methodological guidelines and a structured solution. From this stage, a few considerations on the future of this proposal can be drawn.

Keywords
SDGs
Exhibition
Social and Environmental Impact
Systemic Innovation Design
Methodology
Project Management

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Introduction

The purpose of this paper is to describe the process that allowed us to create an interactive exhibition based on some of the themes promoted by those SDGs that are focused on social themes, to sensitise young adults to the issues.

The Sustainable Development Goals, also known as SDGs, are 17 macro-topics that include 169 targets and more than 240 indicators. They set out a shared global agenda for human development that is fair, inclusive, and sustainable (UN Agenda, 2015).

The principal SDGs oriented in social matters are the fifth – "Gender equality" – and the tenth – "Reduce inequalities". These main two can be supported by others like the first – "No poverty" –, the sixteen – "Peace, justice and strong institutions" – and the seventeen – "Partnership for the goals". By delving into these goals, it is possible to underline some crucial topics in the different targets. Particularly from gender equality, we can highlight issues like equal opportunity in leadership roles or the need to eliminate all forms of violence against all women. From this, it is possible to shape even more different and specific topics to tackle. The goals of reducing inequalities are focused on social, political, and economic issues concerning everyone regardless of age, sex, disability, race, ethnicity, origin, religion, social status, or otherwise. It focuses in particular on the needs of developing countries, or those areas affected by unsafe migration.

These decisions defined the direction of the following steps. It helped in the research of case studies, grandly having a background of knowledge and inspiration (Tamborrini, 2017). Therefore, it is possible to convey a survey for a wide-public range or even more specific question that has the purpose of inclusivity and better comprehension.

State of the art

The first step has been the analysis of the state of the art, based on a selection of installations with an eye on how social matters are dealt with and how the interaction is built in the exhibits' framework (Pannafino, 2012). This step was translated into the analysis of some case studies like exhibitions, installations and artwork on social inclusions and related topics. In particular, the research was built upon two criteria, and each case study had to meet at least one element for each of them.

The first is related to the topic, which had to deal with inequality issues. According to the previously made analysis, it has to include aspects of gender balance (Hauspie, 2023) in order to provide a past or prevent view on the selected topic, especially considering specific related topics as gender discrimination, glass ceiling or gender pay gap. Another aspect in the inequality criteria is the LGBTQIA+ topics including social, political and economic discrimination, equal rights and visibility (Nicol, 2018). And finally, the diversity valorisation, a sort of intersectional aspect (Adichie, 2014) which considers gender, sexual orientations, but also any disabilities or anything that can be considered different from the statistical norm (Sytsma et al., 2012).

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The second criteria is related to the human interaction design of the case study. They had to be a relevant example of interaction, through analog or technology-based support. The case study can involve AI supports (Gaia et al., 2019) able to generate a direct human-exhibit interaction. Other supports can be completely analog (Vaudetti et al., 2014), but with a strong value on human engagement and interaction. Some other could have a blended modality — also known as phygital — able to interact with the user through physical element, in order to guide them into a digital environment (Di Salvo & Arcoraci, 2020).

This led to an overall picture of how this theme is discussed, perceived, and how much it is integrated with the technologies, as well as an acknowledgement of the existing interactions.

On a concrete level, the analysis already shows some good practices in representing social issues through static exhibitions, showing societal stigmas in unconventional manners. Both in *One Man Show* (Juvani, 2018) and *CECI N'EST PAS...* (Verhoeven, 2013) the showcased taboos and social outcasts are portrayed in such a way the visitors tend to change their perspective of reality. Going in-depth, *One Man Show* expresses the struggle of toxic masculinity through practical installations made of concrete, metal and flowers, but also intimate videos of the human body and non-conforming clothes and make-up. Meanwhile, CECI N'EST PAS analyse the concept of social outcasts, placing ten people in a glass cage. The showcase of these people — that represent specific socially marginalised experiences, like children at war — is managed electronically through an automatic shutter that rises, creating shock, discomfort and reflection in the visitors.

Interactive exhibitions on social matters seem to exploit technology to build an intimate or even individual place rather than to convey a collectively meaningful message. For instance, *How We Act Together (*McCarthy, 2016), held in Schirn Kunsthalle, Frankfurt and Online, readjusts the meaning of social interaction gestures to rebuild an intimate space to find others. Through simple gestures made in front of a camera, the visitor can upload their animation, which is widespread among other visitors. This cascade effect of videos of the same gesture, with time, is creating discomfort even from common behaviours.

On the other side, those exhibitions which label themselves interactive use technology to build an immersive path into the thematic area. *A come Ambiente* (i.e., E for Environment) Museum in Turin uses simple interactions to allow primary to high school students to better understand environmental issues in a more concise and impactful way rather than words (MAca, n.d.). In detail, the museum includes digital as well as physical individual exhibits that touch a specific topic (e.g. water consumption, recycling processes or energy production). With the practical approach, the exhibits invite visitors to interact and learn directly from them.

One key characteristic that we found interestingly recurrent was the disturbing element in the exhibits.

At the same time, it clearly emerged the lack of technological interactive exhibitions designed to make social matters clearer by these innovative means rather than words, as happened in the last cluster of examples. This new element, that can be considered as a "wow effect" (Rodrigues et al., 2022), can be defined as that technology that is so innovative or advanced that has been never seen before, or if it is not technological, there is anyway an element that you would never expect from such a context. Indeed, just a few elements and examples were present, but the technology did not stand as a best practice when dealing with these topics.

When looking for exhibits and museums on different topics, it was easier to find technological elements playing a more relevant role. Still, in this case, it was often science itself being the centre of the topic.

For this reason, it was possible to find the first relevant issue: technology had to be a tool to deliver the strongest message possible (Bonnardel & Zenasni, 2010), but we shouldn't have focused on the technology itself just to reach the "wow effect", or it would have become the main subject, derailing from the focus on the SDGs.

Therefore, the focus was directed toward the users, and their interactions, and the message was fundamental to be delivered (Baldwin et al., 2004).

Methodology

To provide an effective and concrete outcome in this case study, it has been necessary to define a well-structured methodology that settles down rules and boundaries into the design phases. For this reason, it has been considered the systemic and innovative holistic design methodology, in order to understand and define the needs of users and stakeholders and, finally, to provide fundamental guidelines for the design strategies. This analysis is going to deal with the first stages — the methodology selection and the state of the art — that guided the process toward the definition of a concept (Tamborrini, 2019). In the future, the other phases will be considered. Starting from the realisation of a brand identity with the design of a logo, the promotion of social pages and the development of an app. As well, the economic phase will take place with the design of a business model canvas (Osterwalder & Pigneur, 2010) to make such an exhibit a viable business opportunity to other external stakeholders. Finally, the designed and developed application can be integrated into the rest of the technological elements of the exhibitions Fig. 1.

The initial requirement in the design phase, has been to select a well-structured topic that considered and gave value to the Sustainable Developments Goals. This allowed the definition of boundaries, setting the framework in which the fundamental topics would be explored. Indeed, the focus has been set on social sustainable issues. This selection happened due to the low concern that is often given to these topics with respect to those more strictly related to the environmental dimension. More specifically, the tight link between the social

dimension and the environmental one and the boost that the former can give to the latter one is often overlooked. Therefore, this under investigated area of research was identified as of relevance for this research.

In addition to this, still in the brief phase, it is fundamental to consider possible stakeholders and practical partners who are possibly willing to join the development of the project, and then become partners or collaborators in the executive stages. In this phase, the collaboration with academic and institutional actors plays a significant role for their key and active role in shaping the changes needed to face sustainable social issues. At the same time, individual and corporate-based collaboration are of significant relevance both in terms of fostering support toward such topics and of the availability of resources.

A second moment in the design phase has been the definition of holistic analysis, which is represented in the design phase below. This step is crucial to define what has already been done on the specific topic, and what can still be done or improved. Moreover, the combination of qualitative and quantitative data defined a well-structured network of information that could be further analysed and used as a base for the definition of the project. Data were collected both in the field and through desk research. The former approach was based on both an online survey distributed through different channels, and by interviewing part of the respondents who were available to further discuss their opinions. The latter approach was carried out throughout the whole process rather than following the first one, and it was mainly based on the constant scanning of diverse sources with the major aim of trying to find a quantitative scale for measuring the positive and negative impacts and changes in terms of social issues. In addition, a close confrontation with experts in scientific, managerial, and social topics provided feedback in the confirmation of the direction of this project (Acocella, 2018). Again, this phase should not be conceived as an ex-post design activity — rather a continuous loop of "build-confrontation" — to discuss the most relevant decisions along the process as well as continuously trying to not overlook any dimension of the project.

The last step of the design phase has been the identification of personas, pointing out the major characteristics of the typical user. This step allowed the design to be user-centric, by allowing the definition of methodological guidelines to be always focused on the actual need of the users rather than on the imagined ones.

Eventually, from the drafted guidelines the project was defined in its all characteristics.

Analysis and Results

The online survey was distributed through the networks of the participants in the design phase. Quantitative data were gathered from a survey that involved 249 people older than 14 — aligned with the future exhibit target. It was relevant to note that although 73% of the respondents were not aware of the SDGs, the totality of the respondents showed great interest in the social topic. Specifically, when asked to rank different social issues in terms of urgency, respondents were most concerned about overarching problems such as “Ensure equal opportunities for everyone” and “Adopt social protection policies, for greater equality” rather than specific ones such as “Balance the gender pay gap”, thus showing how social issues are felt as urgent in their overall nature rather than in some of their specific aspects. Fig. 2.

Some of the respondents were further interviewed about their opinions about the term “equality” and their expectations from a possible exhibition dealing with such topics, often highlighting possible risks such as going into too many details on some topics when no common ground with users is set, taking a non-neutral standpoint on the storytelling, and thus not incentivising users to put themselves in the discussion, rather close the experience.

To complete the framework qualitatively, it was necessary to receive qualitative feedback on the direction taken and on the selected topics. For this reason, some experts, either in the social topic or in science dissemination, were interviewed.

Three of them focused their suggestion on the experience. Thus, the importance of highlighting the three components of each interaction, namely emotional, experimental, and scientific. To stress the emotional component, these issues should be felt as if they were close to the visitors, and not on the other side of the world. Specifically, experiences of stigma and marginalisation should be collected from people who really experience them every day in their life, leaving them on the floor to really explain what it is like to be marginalised. For this reason, some unique people —here called with fictitious names, to preserve anonymity — were engaged: Andrea, a trans guy who has shared his life on social media, and Francesca, a girl sharing on the media the problems of her chronic disease.

The other three interviews with communication experts turned out to highlight the difficulties in physically building the interaction and the technology itself. For instance, while acknowledging the importance of storytelling, a science communicator was concerned about the risks of written sections, as people tend not to read and miss the experience. But at the same time, using a technology-based experience limits the choice of available places; besides, overusing technology might mislead the message itself. Thus, the interplay between physical and digital interaction would be the best choice.

While the last interview was mostly focused on the drafting of a possible business model allowing the exhibition to be economically sustainable and thus be moved to different places, an important consideration emerged. Indeed, people are already aware of most of the topics of SDGs, even if they do not know them by name; indeed, a lot of sustainable initiatives are being shared within the corporate world. But one of the most innovative aspects of this new agenda is

the integration among all the objectives, acknowledging that one cannot be reached without also working on the others. Indeed, all the messages should strictly intertwine the objectives, not deal with them one by one.

Thanks to this analysis, it has been possible to define a series of personas —archetypal figures able to combine all the knowledge from the preview phase and that can represent the possible use of the project case study. These personas, then, are helpful to create user or customer journeys, additional tools that provide hypothetical results on human behaviours, stressful moments, and trigger points of feedback (Pannafino, 2012).

In the last phase, methodological guidelines are defined. They can be listed according to specific topics —such as materials, usability, interaction, technological implementation, economical constraints and many more— to create cluster consideration, needs and then possible suggestions for the future strategy, and so, the project itself.

From guidelines to Solutions

Considering the results achieved by analysing the State of the Art and the development of the methodology proposed, this solution is going to approach an innovative human-digital interaction to deliver in the best way the message. Before going in-depth into the solution, a few guidelines can be listed, summarising the previous analysis and setting a new starting point for the project.

The following guidelines can be subdivided into four areas: first, a *physical context* in which the exhibition must be flexible, transportable and modular, but also reproducible and inclusive; the second area includes the *technical aspect*, so the exhibit must be self-explanatory, integrated with affordable technological elements, gamified and integrated with social media; a third area includes the *final user*, the visitor –they are the central focus, they have to be amused, but also provide feedback; finally, the *economical area* has to be tackled – a low budget and the use of local resources are two important project guidelines.

Therefore, the innovation can be seen in this solution through a personal guide, a storytelling provider and gamified reality (McCausland, 2022). It is a digital guide useful not only in teaching, but also educating through a mutual growth process. The app can introduce time by time “pills of knowledge” that gravitate around social matters, but in such a personal way that the visitor will try to rely on it. In fact, it provides different activities for each exhibition, from Q&A sessions to personal questions, to direct explanations of the context in which the visitors are temporarily placed. Moreover, with all the answers provided by the user and the survey they would take, the app itself will be able to “update” the pattern of knowledge of the visitors, as well as their level of inclusivity and sensitization. This will give the chance to readapt some part of the digital side exhibit nearly in real-time, while by various iterations the physical exhibit can be made more accurate and up-to-date.

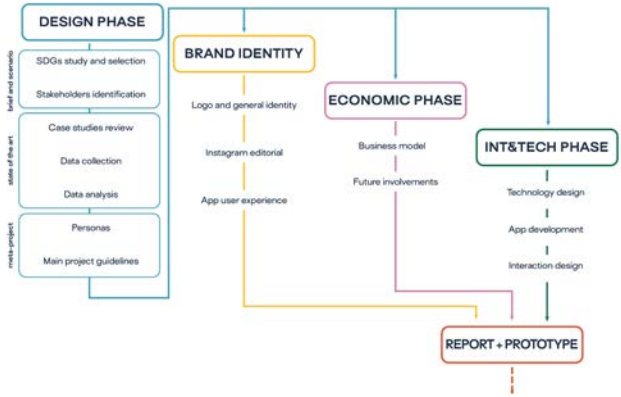

Fig. 1

Fig. 2

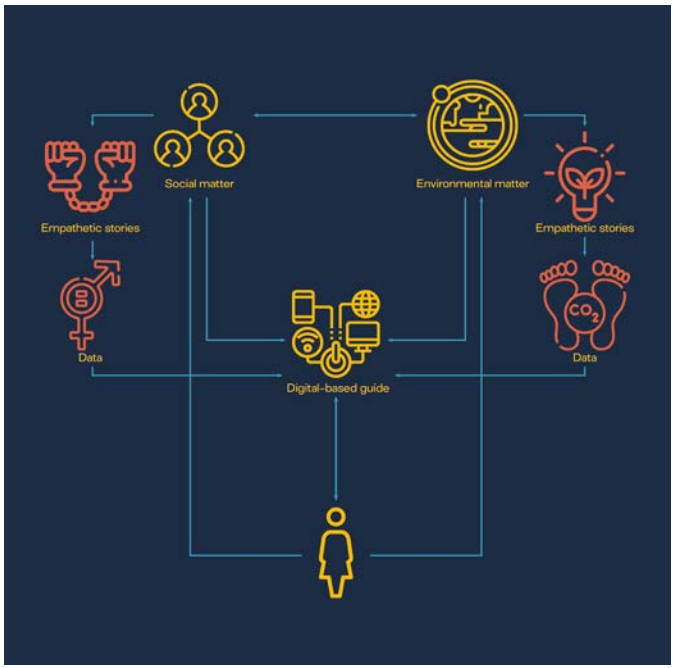

Fig. 3

Fig. 1
Methodology
Short description: Outline of the design methodology combined with a management-based approach
Acknowledgements: Designed by the authors

Fig. 2
Desk analysis
Short description: Infographics on the main outcome of the research analysis based on a survey
Acknowledgements: Designed by the authors

Fig. 3
Interactive flow
Short description: A flow of the main interactions and topics that the exhibition project puts into effect
Acknowledgements: Designed by the authors

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Moreover, creating different interactive narratives that, time by time, evolve and create a sort of "social real-life book", made of real-life stories and real-life data, is a very effective way to engage the audience not just as a passive visitor, but more as an active actor (Danks et al., 2007). To talk properly about different topics that are gravitating around the idea of social and environmental sustainability, it is crucial to create stories and narrations that can define an empathic link between the visitor and the experience. This can set the mood for slow but important behavioural changes and knowledge provision, that in a "longue durée" can be at the base of a change of social paradigms (Braudel, 1967).

Finally, a tool used in combination with the idea of the personal guide and the inner storytelling is gamification. With the implementation of smart objects composed of physical components and digital interfaces — such as RFID tags — the interactive role of the user is guaranteed. Moreover, it activates the process of a real-life scenario, able to push even more the consciousness of the visitor in his actions, and so in the understanding of the experience (López-Martínez et al., 2020). In addition to that, the app itself has a strong role in the gamification process and, combined with the other sensorial experiences — e.g. LED lights, sounds and tact feeling —, completes the immersive experience of the entire exhibition.

Technological innovation might seem a linear but constant growth, but the use of it in such a disruptive way — especially combined with the value of the Sustainable Development Goals — sets the basis for a functional engagement with the user and effectively delivering the message, not focusing the visitor's attention only on the technology itself but in the experience as a whole. Fig. 3

Results and conclusions

Since the birth of the Agenda 2030 and the definition of the Sustainable Development Goals by the United Nations, many events and activities have been developed and carried out in order to increase the awareness of all people. Nevertheless, most of those activities focus on environment-related SDGs. Human rights and equality of opportunity between all humans, regardless of their ethnicity, gender, or social status, are topics that are just as important and strictly related to the previous ones. Public demonstrations are fundamental to spreading unheard voices out loud but may not attract all sorts of people. The exhibition presented in this work wants to convey the same message in a different, complementary way, by raising awareness, informing and sensitising people through a short, structured path along with the main issues that the current state of the world is facing in the context of inequality and discrimination.

In conclusion, this research moves towards a practical project, a solution that wants to be a call to action for all *active subjects*. Even if the experimentation of the interactions has yet to be developed, tested and corrected in case, the project has a strong qualitative value and important visual outputs. Some functional mock-ups and

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prototypes have been created and presented to key stakeholders. In 15 minutes, ten people both from the academy and from other stakeholder groups could interact with the prototypes and assess the conveyed messages. However, due to the lack of time and space in the presentation, little data could be collected about the whole interactions with each exhibit, although some general feedback was provided. Indeed, the main features designed in each exhibit were effective in showing the key message of every exhibit, however, physical limitations due to the paper-based prototype did not allow further investigation of the dynamics of interactions. Several further considerations on such user-exhibit interactions and the dynamics of both actions and idea sharing would be suggested. There is confidence in the fact that the storytelling — that involves both social and environmental sustainability — managed in such an unusual, yet innovative way, is going to be an example of feasibility in the connection between technological innovations and human values.

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DIGITAL SPECIAL ISSUE 1

The 8th International Forum of Design as a Process, themed "Disrupting Geographies in the Design World" was held in Bologna from 20 to 22 June 2022. The event was organised by the Advanced Design Unit of the Alma Mater Studiorum – Università di Bologna, Department of Architecture, in collaboration with two partner universities: Tecnológico de Monterrey (TEC) and Pontificia Universidad Católica de Chile.

The Forum engaged speakers from the Global Design community, expanding the original vocation of the Latin Network for the Development of Design as a Process to include researchers and designers of the Mediterranean Area, Middle East, IOR (Indian Ocean Region), and Global South regions. The goal was to share new perspectives on imagining design futures in a responsible and just perspective, at the forefront of change, while building strategic partnerships and creating accessible knowledge.

Structured around three pillars — seminars, workshops, and exhibitions — the Forum hosted meetings, reflection opportunities, networking activities. It involved designers, scholars, young researchers, design entrepreneurs, in an experimental format.

Speakers' contributions not only inspired the practices of the designers' community, but also resonated with students and the broad audiences. The presentations explored intersections of materiality and culture, post-coloniality, decoloniality, gender studies, and other areas of human thought and action which seek to analyse, question and challenge the disruptive geographies in the world, today.

The papers submitted to the five tracks proposed are published in the Digital Special Issue 1 of *diid. disegno industriale – industrial design*, celebrating during those days its 20th anniversary and serving as the fourth partner of the event.

The Editors
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