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SERVICE DESIGN WITH COMMUNITIES IN AFRICA: THE CASE OF UFISA

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Abstract

The goal of this study was to investigate how service design can be utilised in the community centred design in Africa and what type of service design processes could benefit local communities when developing innovative services and applications? The paper argues that service design and community centred design have a similar ethos. Service design can be utilised to include community members and stakeholders in the community centred development process. This makes service design a practical and participatory development tool in the African context. The study was focused on the case studies of the User-centred design for Innovative Services and Applications (UFISA) project that was developed around an important multi-disciplinary area of education, technical and societal development and user-centred design of information and communication services for the communities in Africa. The research data was collected during two UFISA intensive courses where service design methods were implemented. The two community development cases were in South Africa (2013) and Botswana (2014). The findings show that community centered design and service design can contribute to the empowerment and sustainable development of the local communities.

Keywords: UFISA, Design, User-Centered Design, Africa, Community Centered Design.

1 INTRODUCTION

This research paper discusses two community-based service design case studies related to the UFISA project and theoretical evaluation of the tools and methods used in these cases and their contribution to service design approach. The case studies were carried out during the UFISA intensive courses in South Africa and Botswana. These cases show the methods and tools that can be applied in the different phases of the design processes: customer insights and contextual understanding, ideation, concept design, implementation, testing and evaluation, [1] within the African communities, and share best practices on how to meet users' needs in these local communities. The case studies aim at evaluating the results achieved with the proposed service design.

The paper argues that service design and community centred design have similar ethos. Service design can be utilised to include community members and stakeholders in the community centred development process. This makes service design a practical and participatory development method for the African context and an important tool for societal change. The authors of this study have extensive fieldwork and development work experience with local communities in Africa. This research paper gives them a means to transfer, experiential knowledge into theoretical knowledge that can be shared with the research community.

The paper first presents the service design and community centred approaches applied in the case studies. Thereafter, it briefly discusses methodological approaches and then explores the related case studies. Lastly, the paper presents a service design process that can be applied in the development context in Africa.

1.1 UFISA project

The UFISA project facilitates the development of joint education between universities in Southern Africa (Cape Peninsula University of Technology, University of Botswana, Namibia Polytechnic) and Finland (Aalto University, University of Lapland and Laurea University of Applied Sciences). These universities joined their activities around an important multidisciplinary area of education and development – user-centred design of information and communication services for communities. The

project started in August 2012 and ended in December 2015. The project provided benefits to the communities in Southern Africa through innovative ICT-based prototype services. The universities benefitted from the communities by being able to provide international teaching in real-life settings tied to the well-functioning living labs in Southern Africa. The main activities of the project include student and teacher mobility, three intensive courses and network meetings.

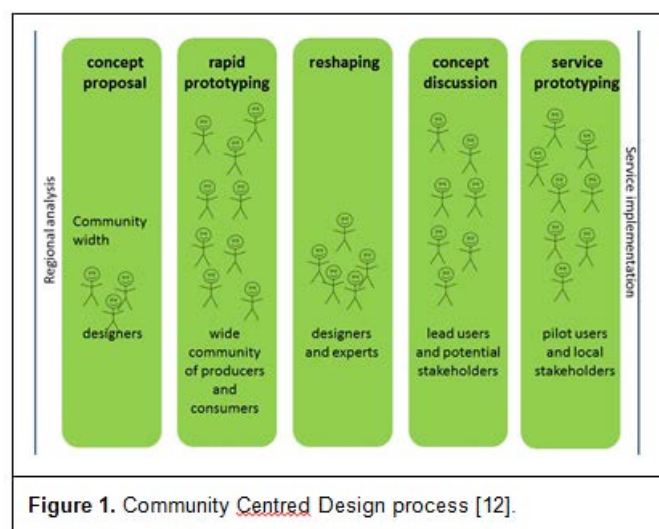
1.2 Service design

Service design research has its academic roots in the philosophy of design science, which is future-oriented. The fundamental question in design science is how to research something that does not yet exist. The design science is extending the boundaries of human and organisational capabilities by creating new and innovative artefacts [2]. The problem-based and practice-based approaches have been the focus of design research and development. [3] These constructions and the documented work around them serve as diversified research data for many purposes starting with the everyday product usage problems related to end-user orientation such as asking questions on how to become accustomed to new technological ecosystems and ending with the academic research questions concerning creative action and earning, co-creation processes, learning-by-doing, or design thinking philosophies [4].

Service design connects the areas of cultural, social and human interaction. As a participatory approach, it focuses on the collaboration of the researcher and participants instead of establishing the researcher as a field expert [5]. The use of different design methods, design research, design thinking and various visualisation techniques link different stakeholders' views during the service design process [6]. Service designers employ methods that aim at empowering the users, as they are invited to actively take part in the service design process. Co-design work is carried out on a regular basis, and new innovative methods are developed to allow inclusion, creativity and engagement. Service design enables the involvement of designers, local entrepreneurs, actors and citizens, students and researchers to take part in a rewarding and challenging development process that involve the relevant stakeholders. The approach offers a living lab environment for co-design work. Working in a multidisciplinary community is a fairly recent development approach and requires new ways of working together. At its best, when service design is used as a living lab platform, it can be a real life environment for different stakeholders where value can be co-created [5].

In this project, we utilised service design as the framework for the participatory research process. While seeking to benefit from service design methods and tools, we critically analysed and developed its potential as a multi-disciplinary, holistic approach in development research. Instead of starting from a clearly demarcated existing service and providers, we left the content and realization open in the beginning of the process, thus inviting the project participants to name and discover these framings through the process based on their own motivations, challenges and aspirations.

1.3 Community Centred Design



Though statistical customer descriptions are important, a true understanding of habits, culture, usage context and motivation of end users is crucial for service designers [7]. A human-centred design (HCD) approach puts the users at the centre of the service design process. The approach is based on the principles that can be found in Human-centered design for interactive systems (ISO 9241-210, 2011): (1) understanding and specifying the context of use; (2) specifying the user requirements; (3) producing design solutions; and (4) evaluating the process. Whatever the design process and allocation of responsibilities and roles adopted, a human-centred approach should follow the principles listed in the human-centred design for interactive systems. [8]. The approach favours qualitative research methods because the research data gathered by these methods provide stimuli that allow ideas and insights to be created and opportunities shared [9].

Community centred design (CCD) is an approach that scales up the consolidated methods and tools of HCD to community size [10]. CCD shifts focus from the individual user to the network of relationships within the whole community. This has proved vital in order for communities to be empowered by the change processes through service design and effective adoption. The key focus is the experiential approach of direct immersion within the community. This facilitates empathy and a mutual learning process whereby the designer gain insight into the community, while sharing their design knowledge to develop tools that empower the community to steer the design process [11,12]. Cantù et al. (2012) propose that the co-designing process involves design in the community at different stages of service implementation: concept proposal; rapid prototyping; reshaping; concept discussion and service prototyping (Fig. 1).

Similar approaches have been adopted in development work carried out by international development agencies. The participatory development approach is usually described and implemented in four phases [13]: (1) Research – this is where the development problem is defined. All relevant stakeholders can be involved in this process. The research around the development problem can include studying previous experiences, individual and community knowledge and attitudes, existing policies and other relevant contextual information related to socio-economic conditions, culture, spirituality, gender, etc. (2) Design - defines the actual activities. A participatory approach helps to secure the ownership and commitment of the communities involved. Active participation by local citizens and other stakeholders, enhances both the quality and relevance of the suggested interventions. (3) Implementation - is when the planned intervention is put into practice. Participation at this stage increases commitment, ownership, relevance and sustainability. (4) Evaluation - ensures that the most significant changes are voiced, brought to common attention and assessed. For a meaningful evaluation, indicators and measurements should be defined in a participatory process at the very beginning of the initiative involving all relevant stakeholders.

When using a service and community centred approach, it is not enough to leave the processes in the research or design phase, but carry on and commit to the long term development process which involves implementation and evaluation phases as there are at the core of the process. Community centred design approach and service design tools can contribute to empowerment and sustainable development of local communities [5].

In summary, service design and community centred design, create a strong dialogue between community members and the stakeholders. The participatory approach where users are regarded as design partners [14] resonates well with the participatory design approach that the development work with local communities have applied such, for some decades now [15]. According to Cantù et al. (2012) designers need two main competences when working with the CCD approach: (a) the ability to gain knowledge about the community by field immersion and to develop empathic relations with its members; and (b) to use design knowledge to design with and for the community, developing tools to enable the co-design of new solutions coherent with the context and allowing non-designers to apply their knowledge and professional skills to the issues discussed. These abilities were applied in both case studies carried out in South Africa and Botswana's local communities. In this study, a community is regarded as a social group of any size whose members reside in a specific locality and share common cultural and historical heritage. The study reports on two case studies: the health care service project which was initiated to co-create solutions for a given community since there was a high prevalence of HIV/AIDS transmission. Similarly, the ceramic making enterprise is a community entity which was started by the community, for the community to address socio-economic challenges which were experienced by the girl-child and women in the village.

2 RESEARCH METHOD

The research data for the paper was collected during two UFISA intensive courses where service design methods were implemented in two community development cases: one in South Africa and Botswana conducted in 2013 and 2014 respectively. The case study research was selected because it investigates a contemporary phenomenon within its life context and it uses multiple sources of evidence [16]. There were 14 and 9 participants in Botswana and South Africa respectively. In order to collect data from the communities in both countries, the participants were divided into groups consisting of different nationalities.

In each case study, a multiple method approach was applied [17]. In most cases, at the beginning of each case study the participants used several instruments such as in-context immersion and other related instruments, e.g. interviews, observations, probes, photography and focus groups) to gain an in depth understanding of the development context. Other methods used included a user journey (for profiling the users), distributed scenario brainstorm (to generate creative service opportunities that are context-specific) and co-creation sessions (for prototyping service design interventions). A survey (questionnaire) was administered to evaluate the intensive courses and all students participated in both countries.

A qualitative analysis, which consists of two stages was used: simplification of research data and solving a mystery [18]. In the two case studies, the qualitative data were analysed in terms of systematic coding and categorisation as data reduction, displays, and drawings of data in order to develop a synthesis which grasps the empirical evidence [19, 16, 20, 21]. The within-case analysis approach was used and it involves detailed case descriptions for each case in both countries. From the within-case analysis, the overall impressions, themes, concepts and processes of service design and community based design emerged from the data and were evaluated based on the fieldwork and intensive course outcomes.

2.1 South African Case study

In South Africa, users and communities play a fundamental role in the creation of innovative environments where human capital can be built for the future knowledge economy [22]. A new generation of informed and socially responsive professionals can be educated through community driven research and practice, incorporated within tertiary education. The link to social and environmental innovation can also be made clear by a thorough, holistic analysis and review of systems and services. With this in mind, the first UFISA intensive course focused on healthcare and wellness needs of community members in the Overberg region.

The UFISA intensive course was held in Cape Town, South Africa in June 2013. The project focused on the exploration of students' own research contexts and service design as a methodology for social and community based research and co-creation. The UFISA intensive course aimed to introduce students to service design and participatory practices, develop student's ethical research practice, explore the context and the needs of the Overberg region and the development of co-created design solutions. The course presentation moved from formal lectures and interactive sessions with course facilitators and a community member to develop participants' skills in relation to social research practice to working in an immersed manner with community members. Key to the UFISA course was the experiential-oriented approach [23], which allowed students' to immerse within a particular community context. The course was structured around the design process, using phases similar to that of the Double Diamond model by the British Design Council (2013):

2.1.1 *Discovery phase*

The community that formed the bedrock of this course, was accessed through a sexual health project run by a non-governmental organization. Central to the project, was its operation within a High Transmission Area for HIV/AIDS. The four groups of students were each introduced to a Health Promoter from this project, who then acted as a "gatekeeper" [24], providing the students with access, into each of the communities in which they worked: an informal settlement, a taxi rank, school and health clinic (Fig. 2 and 3).



Figure 2. Health Promoter, students and facilitator at a taxi rank, Grabouw.



Figure 3. Students with Health Promoter in a township, Grabouw.

The discovery phases included formal lecture sessions and an opportunity for the diverse mix of students to establish a team relationship. This was significant in building a foundation for the one-day community research visit where students were encouraged to engage with members of the community, gather insight and set aside any initial prejudice or assumptions.

2.1.2 Develop phase

Together with each of the four Health Promoters and their communities, student groups collaborated, in order to identify and address their respective sexual health challenges, through a participatory design process. What distinguishes this process is the manner in which the students began to understand the user-as-partner, actively and equally participating, in a co-emergent design process [14] that is strongly situated and contextually and culturally relevant [25]. Participants were exposed to primary user interaction and many noted that their interactions with community members shifted preconceived ideas and initial design solutions. Design solutions were co-created with community members using a variety of tools, which focused on visual storytelling and concept development (Fig. 4 and 5). Community ideas were captured and re-crafted for final presentation.



Figure 4. Students in studio mapping out creative process, Cape Town.



Figure 5. Students in studio mapping out the user journey, Cape Town.

<p>Figure 6. Students posters tracing their process of defining community challenges.</p>	<p>Figure 7. Students posters tracing possible design approaches.</p>

2.1.3 Deliver Phase

The intensive course concluded with group presentations of the students research and the final design interventions. This was not ‘testing’ of the concept in the traditional Double Diamond sense but group reflection on their process and the findings did allow for feedback and idea evaluation from the group as a whole. The solutions presented by participants shared a focus on community driven participation (Fig. 6 and 7). These included a community based radio segment, community festival featuring the dramatization of topics around HIV/AIDS and general health and wellness issues, and condom packaging which allows for user participation through storytelling.

2.2 Botswana’s case study

For the Botswana’s case study, a small ceramic making enterprise located at Thamaga village was selected for the intensive course on co-creation with the community. This enterprise was selected because it has great potential to develop and it could greatly benefit from service design intervention. The enterprise is a community-based organisation making stoneware products and has 17 employees, all being women.

The products the enterprise produces include dinner sets, bowls, pots, vases, tea sets and other related artefacts (Fig. 8). The products are handmade and decorated with traditional motifs, which were used in the past to decorate mud huts and courtyards. These cultural products then act as a link connecting the traditional and contemporary cultures. Most of the products are sold to the locals and tourists. The distinguishing feature of the enterprise products is the ‘lekgapo’ design, which is based on the traditional mural decoration of traditional homes in Botswana.

<p>Figure 8. Collection of ceramic products from Thamaga village.</p>	<p>Figure 9. Intensive course students on familiarisation tour at the village.</p>



Figure 10. Workshop with the employees.



Figure 11. Co-designing with the employees.

As this is a community enterprise, the expectation is that at the end of each financial year, 25% of the profits go to the community. This money is channelled through the Village Development Committee, which oversees all developmental activities in the village. The money is then used to develop other sectors in the village for the benefit of the whole community. Sharing resources with others or less privileged is not something new to Botswana's culture.

During the intensive course, 14 students from the University of Botswana, Cape Peninsula University of Technology, Aalto University, Namibia Polytechnic were engaged in an intensive course on community-driven co-creation with the ceramic making entity. The enterprise has potential to grow, but the business was not doing well. The service design intervention was to co-create solutions which would facilitate this entity to grow its business in the community to benefit through royalties. Students paid the enterprise a preliminary visit to familiarize themselves with the community and to build rapport and trust with the workers (Fig. 9). Trust is fundamental in such communities because any intervention from outside might not be welcome or viewed with suspicion. The co-creation process started on the second visit and in some groups on the third visit because the community was not opening up. Once the community has welcomed the initiatives, which one intends doing collaboratively with them, then it becomes easy to operate in their environment. Before the preliminary visit, students were divided into four groups to co-create with the community in the following areas: Profiling, Stakeholders and community, Production processes, Management and communication.

2.2.1 Profiling

In profiling the enterprise the following were examined: involvement of stakeholders, governance, suppliers, competitors, customers, workers, and the youth. During the co-creation process, the following were discovered as challenges the enterprises faced: business struggling to pay workers, low salaries, lack of directions of the entity, lack of workers personal growth, low literacy levels, little community involvement in the enterprise, and youth lack interest to get involved in the business due to low wages. However, there were opportunities that were identified, such as: investing in technology to market the products, open another store in Gaborone, work on packaging the products, and provide a directional map to the enterprise. The students and the community then worked on the challenges and opportunities to co-create a solution which, will get the involvement of all stakeholders. The group co-created the concept of 'culture of the potter event'. This will be an annual event, which runs for a week, which would be showcasing the enterprise's products and services. It will be combined with some other cultural activities so that people can be attracted to visit the pottery and this will also provide the business with an opportunity for marketing itself.

2.2.2 Stakeholders and community

The main customers for the enterprise were: different government departments, hotels, lodges, tourists, drop-ins, and shops. The entity also sells crafts from the community on their behalf. The challenges the enterprise is facing under this category were: the need to scale-up advertising, the

decline of the tourist market, lack of a structured training programme, bulk orders take long to be delivered to customers and non-availability of a bank swapping machine. Opportunities included: using social media for marketing. The team observed that visibility and youth involvement had the highest rating amongst the challenges viewed with good possibilities for engagement. The team then began to prototype online solutions and finally agreed to use social media to advertise the products and services offered by the entity. The team co-created a Facebook page layout and design for the entity to market its products and services as well as attracting both the youth of Thamaga and the global community. Additionally, the entity should use other platforms to market itself, such as entering competitions, exhibitions and doing campaigns.

2.2.3 Production processes

The team identified multiple gaps and problem areas in the work process and practices. After the initial interview sessions, these problem areas were identified and a co-creation session took place to prioritise problem areas. From the session, three focus areas were identified: lighting at the workstations, table heights were too high at the clay preparation area and there was lack of knowledge to operate some machinery (Fig. 11) and their regular maintenance. With the exploration of service design tools and community based participatory design, the workers and design team were able to improve the production flow and user experience. The co-creation and co-design of the three areas was meant to reduce the effects of musculoskeletal disorders, and reducing discomfort which will result in an increase in the production.

2.2.4 Management and communication

The co-creation team identified that there was a lack of community spirit among the workers. There was a lack of trust between the workers and their supervisors. Workers felt their suggestions were not taken into account and it has resulted in low worker morale and workers have low literacy skills. The team agreed to co-create ways of improving the communication channels between the workers and management. From the co-creation sessions, some possible solutions generated were as follows: to translate the conditions of service and code of conduct to local language (Setswana) for better understanding, posting the code of conduct in the workshop, office and the shop, share a common tea-room to create collegiality, address challenges in smaller units regularly, and a structure for the departmental meeting was designed. The latter was then transformed to a simple step-by-step instructions for running a meeting and a form for writing minutes. Both the form and instruction sheet were translated to Setswana.

3 INTENSIVE COURSE EVALUATION

At the end of each intensive course, participants were given a reflective questionnaire to provide their feedback. In a questionnaire completed after the course in South Africa, all the nine participants indicated that the community user engagement was beneficial to their development, that is, 66.6% of the respondents stated that the experience contributed to both personal and professional development, while the remaining 33.3% indicated professional development.

When evaluating the course in Botswana, some students expressed that:

They enjoyed the social dynamics and ideas shared during the course which allowed them to establish relationships with students and professors from other countries and universities who were all involved in the service design process. The course also allowed for the sharing of experiences, teaching methods and planning for future collaborations on student and staff exchanges.

In concluding in each course, different stakeholders from the local community were invited to the student presentations and final evaluative discussions of the design intervention. The stakeholders provided verbal feedback about the intensive courses. For example, in Botswana, the pottery workers expressed that:

"We have been struggling to mix clay... repairing the pugmill will make our work easy."

"We thank the university students for spending their time with us and they have taught us many things to improve our business."

The pottery management also conveyed that:

“You really helped us... We tend to overlook some of the issues which are crucial to the smooth running of the enterprise.”

“The students intervention has managed to break a communication barrier we have been experiencing...”

“We will implement your proposals.”

“We are looking forward to a long lasting collaboration...”

During the presentation of the results, the Local Enterprise Authority (LEA) personnel were invited. The LEA is an entity whose mandate is to promote and facilitate entrepreneurship in small micro medium enterprise development through targeted interventions in pursuit of economic diversification in Botswana. The officials from LEA underscored that:

“...students have analysed the enterprise and they identified its strengths and weaknesses.”

“...together with the workers, students, co-created innovative solutions to some of the challenges the enterprise is facing.”

“We will also assist the Pottery management to implement the proposed solutions.”

4 SERVICE DESIGN PROCESS WITH AFRICAN COMMUNITIES

In both case studies, the first phase of the project was identifying a community to work with. The case studies were carried out in the context where the initial trust with a community was created and co-operation was already established. Stakeholders had experience and trust based on previous interactions. Further, the gatekeepers for co-operation were identified. Based on this collaboration, the initial process plan was generated as a guideline for the process. Introducing theoretical discussions and methods, applied in similar development contexts, enabled the students to understand the theoretical context. The selection of methods and tools that could be applied in this context was the second phase of the process.

The third phase in both case studies started with an immersive familiarization process where the communities were visited and discussion initiated. This phase contributed to the contextual understanding and community/participant insights. In both case studies mixed methods approach were applied to gain the contextual understanding. Groups of students used methods for profiling to customer journey identification to gain an initial understanding. The fourth phase consisted of numerous co-design sessions or workshops. This phase helped in both creating sustainable solutions with the community members as well as testing and evaluating the same. The fifth phase was the concept design phase where a number of solutions were shared in different visual and verbal formats. The last phase is continuous implementation of the concepts in the communities over a period of time. Many of the communities have marginal resources. This means that implementation processes demand a long-term commitment from the developers' side.

Development work in the local context demands a high level of contextual understanding and past experience about working with the particular community to be carried out in a short period of time. Both intensive courses were carried out in two weeks.

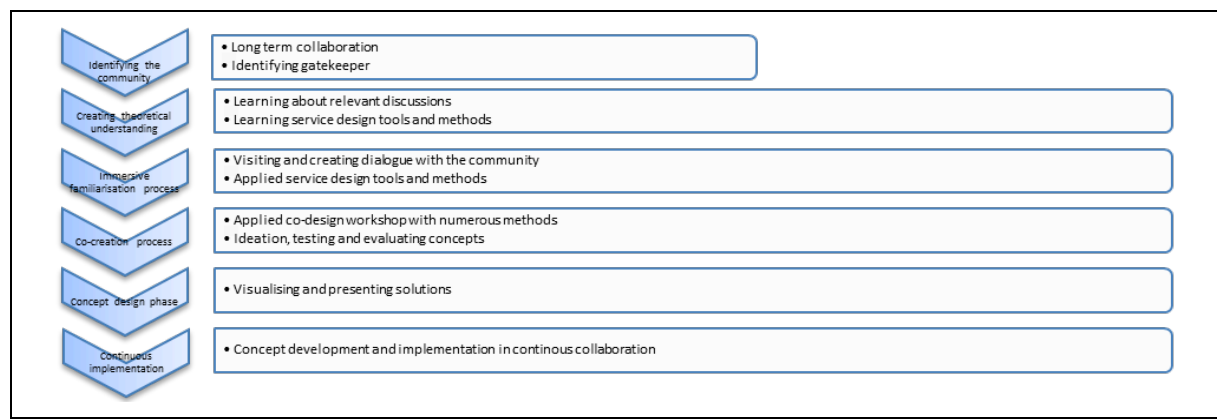


Figure 12. Service design process with African communities.

Co-creation provided a symbiotic relationship between the students and the community. Students learnt from the community and the community benefitted from the solutions, which were generated during the co-creation process. The co-creation process enabled students to learn concepts in a classroom situation and then apply them in a live situation for the benefit of the community. The intensive courses embraced elements of teaching, learning, application and this accrued to the communities benefitting from this initiative. The intensive courses enabled students and facilitators to learn from each other and share experiences. In particular, students also learnt valuable lessons from the communities as co-creators, as opposed to viewing them as subjects to be researched and then assisted. All stakeholders exchanged ideas on designing innovative applications and services that are context sensitive. This exchange will result in collaborative initiatives between universities in the south with those of the north as well as between the southern universities. The courses have broken a barrier where there is little or no collaboration between the universities in the south. This will open a new window of opportunity for the southern universities.

5 CONCLUSION

According to [12] the CCD approach aims to address challenges such as empowering the community and forming of a more permanent innovation ecosystem than those enabled by one-time interview or observation studies. In the two community case studies, the openness of information generation and the multi-actor approach enabled the research to focus on larger ecosystems than to an individual service. A service design approach provided tools and methods that help local community's continuous development.

In this multi-cultural settings, service design enabled the use of visual tools that helped both the communication and implementation processes. The development context is complex and challenging, the use of service design tools and methods facilitated a dialogue with the local communities and stakeholders to ensure the implementation of the solutions in the long term. The intensive courses formed an experimental platform to develop and prototype processes applicable to the African development context.

The key to the UFISA course and adjacent activities was the use of inclusive and participatory community design practices. This assisted to avoid instances where designers are contextually remote from the communities and environments that they seek to design for, and so too are their designs [26]. The strength of this project was based on the way in which local students and facilitators from the hosting institution with those from visiting institutions collaborated. This created a space for sharing local experiences and contextually relevant insights. The project developed services and tools, which helped community organisations to find innovative or radical solutions to the challenges they were facing. Solutions were related to the ways that the service has been produced, for example, using social media, internet, and co-production. Service solutions also combined various services, like entertainment and education.

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