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Towards Community Centric Design in Cairo Informal Areas

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Abstract: Informal areas take up 65% of Cairo. Mansheyet Nasser -one of the biggest informal areas in Cairo- alone hosts more than 2,000,000 inhabitants. Several NGO founders feel responsible to create a model that fixes informal areas' problems (such as education, employment and health). Especially since the 25th of January revolution, they have been doing their role in sustainable development. Currently these NGOs are responsible for providing opportunities that generate income for informal area female inhabitants. This study focuses on sustaining this income through community centric design. Moreover, the designer's role was more of moderating between the informal area, the inhabitants and the NGO rather than designing only. Aiming the women could have sustainable income, the participants' needs and communities were investigated using Kimbell and Julier's (2012) Storyworld method. This resulted in three women sewing clothes that are sold using a well branded online store. A sample from the store's target group were invited to participate in several participatory design workshops to create the chosen products. This action research draws attention to the impact of community centric design on socio-economic status in informal areas.

Keywords: *community centric design; participatory design; Cairo; informal areas; NGOs*

1 Towards Community Centric Design

Interestingly, the largest contribution of designers is to intervene in social problems trying to shape culture and environment of community as stated by the political scientist Herbert Simon that design is "*changing existing situations into preferred ones*" (Simon, 1972, p. 111). In this direction, when more focus is made on social, ethical and communal issues than on individual ones, values are more tangible, thus the shift from user centric design towards community centred design is achieved (Meroni, 2008). Moreover, Manzini explains social innovation should interplay between autonomous initiatives that create social enterprises. These entities grow better in a favourable economic ecosystem, which is the national institutions' responsibility to provide. Besides when it comes to the design, designers are urged to prioritize recognizing existing social inventions and develop them into more effective, marketable, sustainable solutions (Manzini, 2015, p. 58). Therefore, branding and social media marketing strategy were taken into consideration in this research in order to create a lasting impact. This research focuses on achieving autonomy for

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individuals through generating a social enterprise through NGOs, with the help of community centric design research and participatory design.

Innovation requires collaboration from multiple parties. Value framework is a method that supports shared value creation for people, organizations and society. When designing solutions for societal challenges such as unemployment, it is important to research the issues at user, organizational, and societal levels in an extended network of stakeholders. This can be conducted through brainstorming sessions with stakeholders to define new value propositions (de Bont, den Ouden, Schifferstein, Smulders & van der Voort, 2013). For example, when using Kimbell's Storyworld method, we study a person as connected to lots of other people, organizations and things rather than as an independent without a history. An efficient Storyworld constantly raises the question "would it work for him or her?" (Kimbell & Julier, 2012). The social design process is adaptive to the situation it is used upon, therefore in this project, the processes described by Kimbell were used and altered.

Moreover, it should be stated that informal area residents are surprisingly innovative and committed to resolving their daily needs. According to Grigorovich (2008), the main problem with informal areas is it having many types of environmental risks due to the absence of urban services. But despite the problems the informal areas are best examples of raw improvisation, also of entrepreneurship and talent to generate revenue out of nothing. These informal areas occur due to typical obtrusion into places like cemeteries, rooftops and public lands that their inhabitants undertake as *homes*. Therefore, the urban poor can independently satisfy their needs with no outside help. Accordingly, they develop a system where they support each other through trading favours. And therefore, a possible solution is branding of products and positioning self-help activities as a tool to achieve complete independence (Grigorovich, 2008).

"Cairo is a chaotic megalopolis where life is characterized by extremes, both of tradition and of modernity. When people are asked what the city means to them, individual answers vary tremendously, depending on a person's relationship to the place" (Kipper, 2009, p. 13). Informal areas cover more than 50% of Cairo's landscape hosting millions of inhabitants, thus generating their own culture and habits. An example of the extreme characteristics mentioned above is the fact that some female inhabitants cannot afford to pay for their sick spouses and children but will not work because their traditions forbid women from working outside. They fear from what their community would think and say about them more than they fear for their children's sickness. However, most of them have a lot of potential and would perform well when given a customized opportunity. Furthermore, it is unfortunate that Cairo lacks accurate statistical data about its informal areas, which makes it difficult for NGOs to calculate how far they have come and what more they need to achieve. There is little literature counting the number of women, men and children in each area, their health, educational and employment conditions. Therefore, NGOs that were founded after the 25th of January revolution started databasing this information.

2 Empirical Research

According to Mona Gado, informal areas lack many facilities. Therefore, unemployment leads young people to be involved in drugs and street gangs, resulting in insecurity for women and their families (Kipper & Fischer, 2009, p. 61). While collaborating with an already existing NGO, this intervention aims to raise the sustainability bar to the existing income opportunities provided by NGOs. Accordingly, after conducting interviews, informal area field visits with several informal area inhabitants and NGO representatives, the following was concluded:

- The poverty loop in Egypt is caused by either lack of education, employment, health care and/or over population. This a wicked problem that can only be treated yet not cured, through different design tools that enable NGOs to intervene sufficiently in some of the informal areas' problems.
- Each informal area in Cairo has its own community characteristics and problems thus cannot have the same ways of design thinking.
- The designer working individually with the informal area inhabitants - even if experienced- is not as effective as working under the umbrella of an NGO that has been in the area for a period of time and has already gained the inhabitants' trust.
- Most female informal area inhabitants opt for a better living in order to better provide for their children more than their husbands (who are most times involved in drugs as mentioned earlier).
- During the field visits, when these women were offered jobs, they refused due to their traditional constraints.
- Some of the women are already experienced tailors and/or are interested to learn the skill.

Due to these conclusions, it was decided to target female informal area inhabitants rather than males to ensure their commitment, and to focus the design intervention on providing them with a job opportunity that is accessible from home. Figure 1 illustrates the current situation under the supervision of NGOs, where income is provided, in addition to the sustainability provided by the design intervention under the umbrella of Community Centric Design resulting in a steady income for female informal area inhabitants.

Figure 1. Design intervention (J.G. Attia).

2.1 Phase I: Research and Idea Validation

In this section an explanation of the design process phases is provided. This is where several methods overlap. In Phase I Inspiration and Ideation steps are explained. Then a second round of inspiration takes place by analysing the second stakeholder, which is the target audience. This is conducted using participatory design workshops.

2.1.1 Inspiration Round I Community Centric Research: Storyworld

The Storyworld method (Kimbell & Julier, 2012) is used to establish the current surroundings of the target group. This exercise was not only undertaken through observation, interviewing and field visits, but also through conducting focus groups with experienced members from different NGOs. It was deduced that the way of doing things might vary between one woman and the other, also from one informal area to another, yet the relations, connections and mental models are almost the same. In Figure 2, the primary connections to the participant's close circle and the organizations she deals with are shown. Also, more emphasis is made on her regular habits and socializing activities. Her thought and self-perception give insight into the solution proposed. Most importantly, instead of her community's traditions acting as a design constraint, they were rather considered as an inspiration for the solution along with her self-perception. These traditions acted as constraints to the solutions provided by the NGO members constantly. Finally, the model proposed was to provide the women with sewing machines in their homes and with patron designs to follow, and sell the products online to a higher socio-economical target group.

2.1.2 Ideation: Storyboarding

The Storyboard method (Kimbell & Julier, 2012) not only helps illustrate the proposed model but also the value proposition created through the intervention. It also highlights the before and after user experiences in a nutshell, thus provided us with unbiased understanding into implementation (Figure 3). It shows the steps from when the user surfs the web searching for a fashionable design, to when she ends up running errands between the tailor and the fabric shops to design clothing. Then after introducing the model, she instead purchases products that fit her needs from a well branded online store. The benefits of such an approach are that it saves time, money and effort for the target group, but on the other hand eliminates the testing experience.

2.1.3 Inspiration Round II: Ensuring Sustainability through Participatory Design

When using participatory design, the designer takes the role of the moderator, where he/she helps the participants express their exact needs. This method not only helps the designer to achieve better results as it shortcuts a lot of time spent on interviews and surveys, but also allows better understanding of the problem at hand (Martin & Hanington, 2012, p. 293). The use of participatory design in this project aimed to involve many stakeholders in the process of designing and implementing. It was not only used by the informal area inhabitants to produce the products

but also by a sample from the targeted group to decide upon the designs providing discussions and feedback. In the following sections are some of the results of two of the conducted participatory design workshops.

Storyworld

Figure 2. Storyworld, centering user and community (Kimbell & Julier, 2012, p. 24).

Storyboard

Use this structure to imagine a story about your user or customer as they engage with your offering

Figure 3. Storyboard, explaining a story of interaction between user and product (Kimbell & Julier, 2012, p. 28).

Workshop I [Participants: Online store target audience - Objective: Narrowing down needs]

Once the Storyboard was created, more information was needed to better understand the existing problem. The workshop was held in order to generally discuss the problems with the online and offline shopping experience, and also to understand exactly how these problems made the participants feel and think. It also aimed to specifically discuss the problems with the product needs of this particular target group and their preferences. The discussion included understanding the problems with online shopping, clothing in Egypt and target group's recommendations for a new product and service and the flaws of veiled clothing in Egypt. Around three workshops were held face to face, each took between 1-2 hours, they included veiled A class females ranging from 19 to 23 years old, who were interested in veiled fashion and open to new ideas. Some challenges included the following:

- They agreed on how most shops exhibited skirts that turn out to be transparent, open from one side, reveals a bit of the leg or too tight that it exposes body figure.
- The skirts and dresses exhibited are infrequent and trends between their peers, resulting in them feeling less unique wearing the same as their social group.
- In winter, international shops do not provide winter skirts or dresses, as unveiled girls normally wear pants for instance.
- Moreover, formal materials were very hard to find.

The discussion not only allowed the participants to express and share their struggles (which were similar), but also it shed a light on the fact that despite their clothing restrictions, they also aspired to feel uniquely dressed within their social circles. They constantly compare their wardrobes and scout the internet for new ideas. This gives insights on the branding and marketing strategy by which these products were to be communicated through social media. The marketing campaigns would grow their aspiration. In order to induce uniqueness in the products, the branding would not communicate purchasing for a cause which would encourage them to buy once. Rather it would communicate products that seem of value.

2.2 Phase II Implementation: Trials and Results in Different Informal Areas

In Phase II of the empirical research on ground trails were made to validate the idea and test the business model. The following are trials, errors and results in four different informal areas in Cairo. As per the Storyworld model presented earlier, the morals and cultures of the inhabitants had to be respected while communicating with them. And thus more caution was made while visiting them and several challenges were faced due to the authoritative relationship with their husbands. An example of this is mentioned in 2.2.3. However, the overall commitment of the informal area inhabitants involved in this project was always compromised due to their spouses' control and the community constraints. Unfortunately, no research was made to thoroughly identify where the problem lies, as this appears to be a job for social sciences researchers. However, it was communicated several times that the spouses are either jealous of the NGO's interest in their wives or perceive these interventions as disrespectful to their traditions.

After failing in each of the three first areas, feedback was collected from the target audience, however the areas of errors seemed obvious in some cases more than in others. And therefore, a participatory design workshop was held after collecting samples from Informal Area II.

2.2.1 Informal Area I: Batn ElBaara (NGO A)

An important aspect of this project is professionally teaching the informal area women to sew. Consequently, some research was done to find an appropriate place where they can learn. Finally, a workshop was contacted. It teaches sewing in 24 two-hour classes along two months. The coordinator between the informal area community and the team is popular in the neighbourhood and accordingly it was assumed that she could choose reliable women for the project. Ten women were identified for sewing. However, six of the ten sewing women changed their decision about joining the team, as their husbands did not approve. Accordingly, it was decided to train the four women hoping that they will train the rest. At the end of the workshop, these four women were only taught how to finalize clothing, rather than sew them from scratch. This was due to the NGO trusting the coordinator to actually choose the women herself. This resulted in wasting 5000 LE spent on this workshop. The main action that led to this trial's failure was blindly trusting a coordinator from the community without interacting with the women.

2.2.2 Informal Area II: ElMatareya (NGO B)

In this trial it was decided to pursue an already established group of tailors, rather than teaching them the skill from scratch. NGO B was contacted and showed great interest in the project. They had a group of tailors in ElMatareya

informal area and they recommended working with two of their best women. Therefore, a number of samples were provided to produce trials. When the trials were assessed some comments were raised but it seemed acceptable to proceed. The assessment was held through a second participatory workshop.

Workshop II [Participants: Online store target audience - Objective: Customers' product evaluation]

After several samples were done by the informal area inhabitants, a trial run took place to evaluate the products and test the customers' responses. Another participatory workshop was held, where the products were exhibited from the participants to try out, discuss, assess and purchase. The team decided to sell the products in cost prices, as the aim was to test them. The batch included 55 pieces, which were not of very high quality. The visitors were also given colourful post-it notes to write down their comments even if they did not buy anything. As compared to the earlier workshop, this one had an exhibition setting to better view the products like a shop. On browsing the products, the participants were able to give more detailed feedback and suggestions. The fact that it was a participatory workshop and that most participants were already friends gave them a shopping experience when exchanging opinions. Furthermore, the NGO team members co-facilitated the workshop along with the designer, thus inducing more engagement.

Accordingly, more fabrics were bought and NGO B was asked to produce more samples with different sizes. The second time the trials were received the sizes were good but the initial problems were not addressed. Also there was a delay from the women's side to deliver on time. Again, the team explained in more detail their feedback and gave NGO B more samples to produce but in vein. The products were not delivered on time and there was no consistency in the sizing. At this point the team has spent a total of 6000 LE on purchasing the materials to produce a total of 75 pieces. In this trial, money and effort was wasted due to not thoroughly investigating the tailors' sewing skills from the beginning.

2.2.3 Informal Area III: Mansheyet Nasser (NGO C)

For the second time it was decided to contact a third NGO looking for better quality of work. NGO C was founded in 2011 right after the 25th of January revolution and the team also had good connections with its leaders. They were immediately interested to start working together. This time it seemed more convenient to NGO C's team leader to actually take the team into the tailors' homes to better explain the requirements. Three of the tailors seemed experienced enough to work with, the remaining two had no experience in sewing since all their work involved large traditional Galabeyas that had one size. One sample of a skirt was given to the first tailor, and two samples of two different dresses were given to the husband of the second tailor since he was running her small tailor shop. The products were supposed to be received after a couple of days but only the skirt was delivered on time -since it takes less time to do- but the dresses were not received. This was due to the tailor's husband blocking communication for a couple of weeks and when he did, it was explained that he and his wife got a divorce therefore, the order stopped. It was difficult to encourage the participants to act professionally within the project, leading to this trial's failure as well.

2.2.4 Informal Area IV: El-Konayesa (NGO D)

Finally, NGO D was found, it had a well-experienced sewing workshop in ElKonayesa and the Operations Manager was contacted. The team met to discuss the details and then visited the workshop to see the quality of the work. There was not an actual partnership as all promises were made on friendly basis. The Operations Manager explained that the collaboration is beneficial for her project as it will allow more women to participate in the workshop, thus finishing her other orders faster. The products received were of good quality as per the assessment by potential targeted customers.

2.3 Conclusion to Trials and Results in Informal Areas

To better understand the above-mentioned interventions, the below diagram was created to summarise the actions done and the reasons that led to failure.

Figure 4. Success scale of interventions (J.G. Attia)

The diagram illustrates the problems leading to failure in each trial along with the order of the above-mentioned trials. In the first intervention in Batn Elbaara, the approach of recruiting inhabitants that have no knowledge of sewing what so ever was the main reason of failure. This along with the trusting of a mediator from the community who has misjudged the women's commitment to the project. In the second intervention in ElMatareya, the approach was amended to selecting a more experienced woman and focusing on one only and not many at first. However, the selected proved incorrect due to the woman's inexperience in standardizing sizes. Furthermore, in the third trial in Mansheyet Nasser, more research was needed about the woman's marital problems. According to community centric research done earlier, it was deduced that the husbands have an authoritative role, therefore leading to this trial's failure.

Finally, the reason the fourth and final trial has succeeded lies in the edge of the Operations Manager's monitoring the quality of the sewing herself. Not only did she have 20 years of experience as a tailor who taught and managed the rest of the women, but also, she had already established a strong relationship of trust between the tailors and their families. The Operations Manager understood their daily struggles thus gaining their trust. This research began by centring the community, but it is concluded that this is not enough, collaborating with a trusted member from the community is a must to implement the initiative at hand. Although the collaboration with the Operations Manager was crucial for the intervention's success, however identifying this need of collaboration took place due to the use of the Storyworld tool. In this case, in order to design for the community, one must collaborate with a communicating party. Moreover, understanding the community's needs along with the customer's needs using participatory design workshops, helped empathize with the stakeholders and is therefore one of the main pillars that lead to the final success.

3 Impact on Some Stakeholders

The main criteria by which the results are measured is not only the output made by the project but also the impact on the informal area inhabitants' and the NGO members' mindset. Therefore, the following sections explain the impact made on both stakeholders.

3.1 Impact on Informal Area Inhabitants

The aim at the beginning was to support these inhabitants with sufficient continuous income to provide for their families. Before the intervention, the informal area inhabitants would sew a Galabeya for 2 LE to their neighbours, after working with them, they get 30 LE per piece, which approximately takes a maximum of two afternoons of work. They also developed a sense of quality control since the NGO does not take their products unless the quality is assured. Moreover, these women not only now encourage their daughters to learn and work, but also help and teach each other the craft in order to share work together as a community.

3.2 Impact on NGOs

Another aim of the project was to change the way NGOs think and perceive the solutions to unemployment in informal areas. At the beginning of this project, the NGO was about to implement the following projects in the informal area: vegetables or chicken selling on the streets. But after the project was initiated and this *continuous income* way of thinking spread among the NGO members the following projects were developed instead: Crochet Online Shop similar to the clothing idea, and Motorcycle Academy supporting male inhabitants with motorcycles to work as food deliverymen. Restaurants complain about behaviour and reliability problems from the deliverymen. Therefore, the idea is to collect men from informal areas and train them and provide them with motorcycles and

become a hiring company for restaurants. The NGO members now believe in the importance of validating not only their idea but also their knowledge inside the informal area. They also understood the importance of allowing design to intervene in their process, more than just for campaigning.

4 Conclusion

Cairo's communities are complex to understand, starting from individuals to families and ending with organizations and informal areas as a whole. Finding magic bullets that solve all wicked problems is not an objective social designers and NGO members should aim for, rather they should break the complexities into smaller problems and work around the circumstances with specific sustainable solutions. These complex informal communities might seem alike, yet have variant traditions, beliefs and most importantly trends, therefore each require a customized solution. Unfortunately, bigger older NGOs have induced traditional methods of development, thus creating resistance when introducing innovative approaches to smaller NGOs and informal area inhabitants. These methods oppose to achieving autonomy for informal area inhabitants, as they simply support them with food, health supplies and in some cases money without providing a long-term solution. And therefore, instead of them being independent, they rely more on NGOs. However, in this paper, NGOs are the main pivot, the correct NGO must be chosen to coordinate with. Without dedicated committed NGO members in the process, the project would simply become a regular short-term research. For the designer, the role is more of a facilitator, therefore regularly coordinating with experts rather than digging into research without any previous experience is highly beneficial. Also identifying several possible experts is necessary, since different organizations for instance have different mindsets and problem-solving approaches. Therefore, investigating several parties and then deciding which ones to collaborate with will save time and effort. Continuous experimenting with different inhabitants from several informal areas should not be considered a failure, as the aim is to provide a model that could fit not only the inhabitants, but also the solution that the designer is capable of providing.

The integration of community centric design as a thorough process while designing for the poor, not only helps the designer think of better solutions for the community but also allows more impact on the community rather than on the individual alone. During the interviewing process with the NGO members, several complained from the informal area inhabitants' constraining traditions that sometimes cause the members to lose hope on some cases. And in other cases -when the designer works alone without the help of the NGO- he/she might implement a design that solves the income problem but causes other problems within the community, like marital conflicts within families, which on the long run will repel inhabitants from such initiatives. Moreover, Kimbell and Julier's (2012) Storyworld method acts as a tactical tool when implementing community centric design as a strategy for research. Studying the relationships between the individual and his community creates a sense of empathy during the inspiration phase. It is believed that community centric design and the Storyworld method should come hand in hand when designing for the poor in specific, due to their many advantages. Although, this study will not claim the instant success of community centric design techniques, however when investigating countries with limiting cultural constraints it is needed. Cairo informal areas have proved to be mostly driven by the cultural expectations. And consequently, most design interventions must study the community's needs, wants and aspirations before defining the problems to address. As per one of the NGO experienced members, it is always shocking to learn about how much the informal area inhabitants follow their community's rules despite their needs.

Inclusion of both parties within the community is challenging due to the mistrust between the individuals and the NGOs. Most community members regard NGOs as a party to abuse through constantly asking for more financial support. That said, at the early stages of this research, some initial trials were conducted on male informal area inhabitants, however they were not interested. It was then deduced that due to the pressure made by the community's expectations, they simply gave up on being the main supporter of their families. Some NGOs reported that the husbands either spend their time socialising or abusing drugs. Most of these communities do not believe in gender equality, thus the financial support is entirely the male's responsibility. Due to their limited resources and lack of education, this responsibility turns into a burden that the husband can no longer fulfil. Therefore, it was decided to shift the intervention's focus on females due to their interest and despite their cultural constraints. In other words, in this conservative society the role of the woman doesn't involve financial support of her family since her role is to maintain the household. Her role as a supporter can only be accepted by the society if performed with her house such as crafting crochet, sewing clothing or home accessories or cooking for others. Starting by the small discovery of the producing product from the informal area inhabitants through participatory design. Therefore, based on these results tailoring a profession that suits their skills and aims that it becomes a mean to provide for her family.

Finally, designers should believe in the importance of learning about fields around design that maintain its sustainability. A designer's role might seem easy to those who work around them, but when working with social design and social entrepreneurship, the designer must be aware of the finance, marketing and operations of the entire process. As Papanek said in 1985: "being on the side of the social good", designers ought to be more effective towards their communities. Furthermore, designers seeking social change should pursue learning to deal with NGO members with opposing mindsets. Evidently, dealing with informal area inhabitants is quite challenging but dealing with NGO members' ideologies might in some cases be more challenging, especially in Cairo where design is not well comprehended. On the other hand, most NGOs involved in this research reported creating discussions with the female informal area inhabitants that promote education, contraception and employment for females. It seemed easy to convince the females about these ideas however they were forced by male figures inside their homes to do the opposite. The previous example is strong proof of the importance of community centric design that should also go hand in hand with the social sciences. Yet, it is argued that designers should learn to acquire managerial skills to provide better results for their communities. Designers in this context, are not only managing the design process but also, they are managing the stakeholders and their community related problems.

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