A User Experience Design Toolkit for Citizen Designers

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Abstract. In a world where runaway consumerism is leading to the real possibility of destruction of planet earth, User Experience (UX) designers and the design processes they follow contribute to the constant creation of new and desirable experiences and fear of obsolescence. While there is new thinking by some sections of the international design community to create responsible/conscious design processes, these voices need to be reinforced if one is to see significant shifts in current design practices. This chapter discusses the creation of citizen designers as a possible approach to lend bottom up support to hasten the dissemination of top down design community initiated changes to make design more responsible and inclusive. Drawing from Participatory Design and Capability Approach, a design toolkit in the form of a game is proposed, to engage and motivate citizens to become citizen designers.

Keywords: Citizen Designer, Capability Centred Design, Participatory Design

1 Introduction

At the very outset, we would like to define User Experience(UX) as used in this chapter. Interaction Design Foundation states that "User experience (UX) design is the process design teams use to create products that provide meaningful and relevant experiences to users. This involves the design of the entire process of acquiring and integrating the product, including aspects of branding, design, usability and function"[1].

To this description, we would like to add that in this chapter we refer specifically to the User Experience of digital products (whether off the shelf or customised) and not to the User Experience of non digital products.

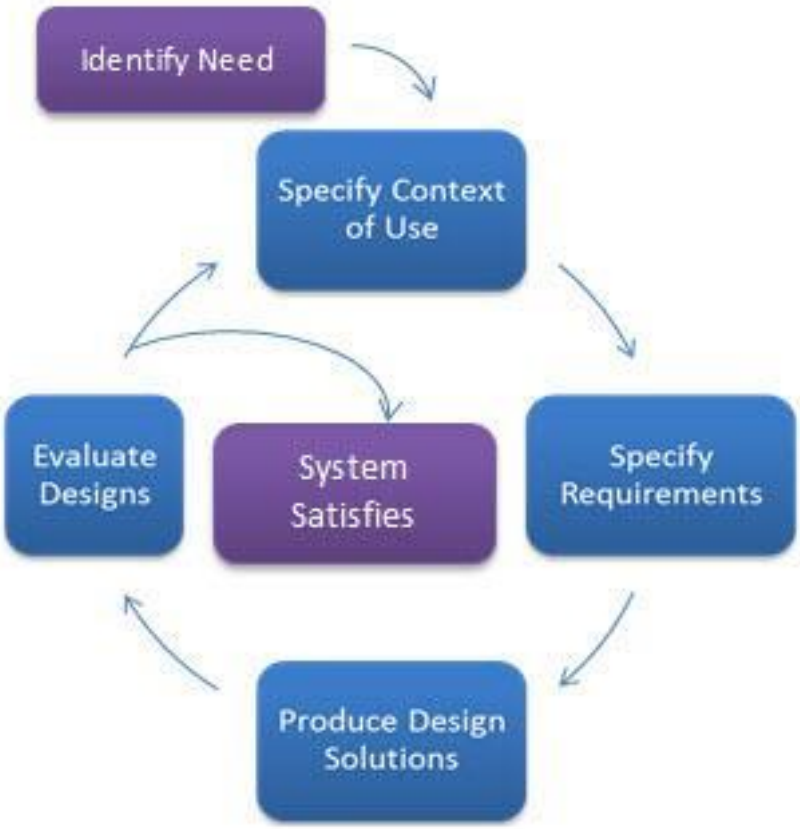

Fig. 1. User Experience Design Process
Image Source:https://www.usability.gov/what-and-why/user-centered-design.html

Fig. 2. Factors that influence UX – The UX Honeycomb
Image Source: https://www.usability.gov/what-and-why/user-experience.html

In the last few years, several critiques have emerged about the mainstream frameworks being used for User Experience (UX) Design – the process involved and the influencing factors within the process. These critiques have applied a variety of filters to revisit current UX design frameworks, resulting in diverse perspectives/alternative frameworks such as Post Colonial Design[2], Feminist Design[3], Transition Design[4], Design Ethics[5], Design Justice,6[] Sustainable Design[7] to name some of the prominent ones.

What is common across these new/alternative frameworks is their concern about excluding users and points of view that do not act as enablers of return of investment in the short term for organisations who fund UX design.

In fact, "users" for whom experiences are designed are either, at best, included in the design process in short duration sessions to understand how the funding organisation's objectives can be successfully "sold" to users through the design or at worst, they are not included at all in the design process.

The mainstream design process, while attempting to include users in the process of designing the experience, merely looks at pre decided functionings(goals/objectives)

and not at capabilities that provide freedom to users to decide their own functionings. Hence the outcome is about designing features/functions that facilitate the functionings that have been decided upon by the organization/brand providing(funding) the experience and has no concern about the user's capabilities and freedom to decide and in many ways, through persuasive techniques these experiences are pushed out to users as much "needed" experiences.

Take for example, an entertainment app that streams shows and films. When the app is being designed, a conceptual design of the app is already made, after discussion with business stakeholders, with the features that represent the business goals and objectives (these goals and objectives is what we term as "functionings", borrowing from the capability theory vocabulary [8]). It is at this point that users are involved in research sessions with designers where varying degrees of participatory processes are used to understand what the users' reactions are to the concept of the entertainment app and its features, which aspects need refinement, what is not resonating and hence needs persuasion techniques to be used to ensure adoption and usage. There is very little room to deeply understand and accommodate users' own goals and objectives (their preferred functionings). The focus of the sessions with users is usually to understand how their goals and objectives can be best adapted to the goals and objectives already decided by the business, even if that means the use of manipulative persuasion design techniques [9]

This inward looking design process based largely on what businesses need and how creatively designers can convert those needs into successful and persuasive experiences for people without any serious dialogue with users and understanding of their ecosystem, leads to a myopic view of the world. "The contemporary is the one whose eyes are struck by the beam of darkness that comes from his own time", said philosopher Giorgio Agamben in his essay on contemporaneousness[10].The field of UX design and its current processes continue to be struck by that 'beam of darkness' and ignore the fallout of continuously designing new and shiny experiences.

The question that becomes critical to answer is whether the move to bring about change to the current UX design process by including ways to balance the needs of business with responsible design decisions be strengthened by making citizens aware of the role of design in their lives and the impact on the life of the planet. Will this enable citizens who have been viewed just as users so far, to contribute to a more responsible design process as well as make them more aware of their own role in making sustainable purchase and usage decisions in their everyday lives?

This chapter aims to present a possible way, in the form of a game, to enable citizens to become citizen designers by helping them to acquire important capabilities that they would need, to actively contribute to the design process like citizen journalists [11] contribute to journalism.

2 Designing for a Better World: New Considerations for User Experience Design

UX Design frameworks being used today take no cognisance of a set of globally relevant and comprehensive set of human values, needs or capabilities when

designing product and service experiences. The heartening news is that several companies are at this point in time beginning to relook at their current corporate vision and mission to incorporate tenets of conscious capitalism[12], ethical service[13]. The financial crisis that began in the USA in 2007 and the impact of which is still being felt, the ongoing climate change debate, the forecasts of dire food and water shortage in the not distant future have all led to some shifts in corporate thinking. In addition, many corporates are realizing that millennial consumers are more likely to engage with a brand if they see it as ethical and conscious of the needs of the planet. A win- win scenario can therefore emerge if corporates who sponsor UX design can see that adopting a more responsible design approach with involvement of citizen designers can increase profit along with purpose[12].

Hence this is perhaps a better time than ever before for UX Design to also make a turn to towards more responsible design using democratic processes and that makes the existence of citizen designers an absolute necessity. A new UX design framework that looks at the following, as important factors (other than what the business stakeholders/sponsors consider as important) to arrive at concepts for product/service that users would buy and experience.

Three Factors to Consider:

1. A set of Values that all stakeholders in a design process must select from. An example would be the Schwartz Universal Framework. There has been a renewed interest in the research of a universal values construct due to the theoretical and methodological work done in the last few decades [14][15]. The recent theory identifies a set of ten distinct types of values and then details the dynamic relationship between them. The construct of values is structured similarly across diverse cultures but the relative importance assigned to each value may differ in different cultures.

Fig. 3. Universal Values Framework
ImageSource:http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.832.177&rep=rep1&type=pdf

2. A set of needs that all stakeholders are free to prioritise and select for themselves. Max Neef's Human Scale Development Model [16] could be one needs framework that could be used as a way of categorization of a superset of human needs.

Considering human needs within a model of human development, Max-Neef has questioned earlier theories, such as Maslow's[17], proposing instead a matrix of intertwining needs (axiological and existential needs, in which the first are representations of the latter), whose priority changes in time and context. By placing axiological and existential needs in a matrix, intersections are created between each, which can be filled with what the author calls satisfiers. The model is certainly an excellent way to get a big picture view of universal user needs from an ecosystem level rather than dividing into hierarchies and narrow categories.

Max-Neef comes from the perspective of understanding human needs so that any development process can bring about the most improvement in people's quality of life. Human needs must be understood as a system: that is, all human needs are interrelated and interactive.

	Need	Being (qualities)	Having (things)	Doing (actions)	Interacting (settings)
1	subsistence	physical and mental health	food, shelter, work	feed, clothe, rest, work	living environment, social setting
2	protection	care, adaptability, autonomy	social security, health systems, work	co-operate, plan, take care of, help	social environment, dwelling
3	affection	respect, sense of humour, generosity, sensuality	friendships, family, relationships with nature	share, take care of, make love, express emotions	privacy, intimate spaces of togetherness
4	understanding	critical capacity, curiosity, intuition	literature, teachers, policies, educational	analyse, study, meditate, investigate,	schools, families, universities, communities,
5	participation	receptiveness, dedication, sense of humour	responsibilities, duties, work, rights	cooperate, dissent, express opinions	associations, parties, churches, neighbourhoods
6	leisure	imagination, tranquility, spontaneity	games, parties, peace of mind	day-dream, remember, relax, have fun	landscapes, intimate spaces, places to be alone
7	creation	imagination, boldness, inventiveness, curiosity	abilities, skills, work, techniques	invent, build, design, work, compose, interpret	spaces for expression, workshops, audiences
8	identity	sense of belonging, self-esteem, consistency	language, religions, work, customs, values, norms	get to know oneself, grow, commit oneself	places one belongs to, everyday settings
9	Freedom	autonomy, passion, self-esteem, open-mindedness	equal rights	dissent, choose, run risks, develop awareness	anywhere

Fig. 4. Max Neef's Human Scale Development Model
Image Source: http://www.buddhaxbondi.com/new-page-1/

3. Martha Nussbaum's list of 10 capabilities [18] namely life, bodily health, bodily integrity, senses, imagination and thought, emotions, practical reason, affiliation, other species, play and control over one's environment (both

political and material). She specified these capabilities as 'must have' for living a life with human dignity and having the ability to exercise one's agency could form the third set from which all stakeholders decide which capabilities (of users) are to be primarily enhanced by the product/service and it's design.

In order to shift the narrow and limited involvement of users in the design process as is prevalent today to a truly democratic and empowering co-creation exercise will need a thorough revamp of current processes and this revamp can happen only if citizens are aware of their right to participate in design of products/services that will impact their lives and are capable of confidently collaborating with designers and other stakeholders. This is the most important step needed to democratize design.

3 How can Citizens be Included in the Design Process?

As John Rheinfrank [19] pointed out almost two decades ago, "the designer is moving from being the detached expert to be a collaborator". This will imply that project goals will be defined by also taking into consideration the views of users. The value of co-creation with users will thus gain momentum. "In the past we designed for users, today we design with users, tomorrow we will have design by users"[19].

This shift towards integration of participatory design methods in the current UX design process, to ensure that users views are taken into consideration has indeed gained some momentum. However, the empowerment of users in the process remains rather unevenly distributed in participatory design and in recent times there have been concerted attempts to "revitalise" and revise participatory design to help people influence bigger issues that matter by proposing a set of key elements including changed partnership with users, new roles of researchers as activists, demanding visions for lasting impact, and more democratic control" [20]. Hence, we feel that the approach presented in this chapter, of working bottom up and raising the design awareness of all citizens and not just those who are invited to participatory design sessions, important. We have done this through a scalable option of an easily accessible game as the first step in creating a toolkit for citizen designers (as opposed to the numerous UX toolkits that exist today for student and/or professional designers). We hope that this would contribute to hasten the transformation of the designer that Rheinfrank had envisioned two decades ago, from being a detached expert to a collaborator who designs with informed users and facilitates design by users, where the users have now become citizen designers[19]. The existence of citizens who are aware and informed about design's role and impact in their lives will also help to revise participatory design that contributes to 'big issues' of sustainable and responsible choices and question participatory design when used as a "more banal form of "user-centred" design method, concentrating on local issues of usability and user satisfaction"[21].

Two frameworks that have been applied to design and have provided the inspiration to look for answers to the question of including citizens in the design process are Participatory Design and Capability Centred Design. Even though the

objectives of these two frameworks are very different, with one emphasising full participation of the end user in the design process and the other focusing on designs that expand the capabilities of the end user, both provide useful ideas about how to make people from all walks of life have the capability to understand what role design plays, what they can expect and demand and hence are able to be citizen designers who can critique existing ideas and help generate new ones.

2.1 Participatory Design

The idea of citizen designers is inspired by the original idealogy of participatory design, as practiced in Scandinavian countries. As MIT Technical Review, [22], observed about the pioneering participatory design project UTOPIA, how this project showed that it is possible to design industrial technology/products with users of the technology/product.

Scandinavian participatory design practices originate from a very strong political commitment by designers and researchers in the 1980's [23], to see design and democracy work hand in hand by building a collaborative relationship between designers and the communities of users who would be the final consumers of the technology/product (and now service) being designed. The strong belief in the ability of a democratic design process yielding a democratic result that would lead to a collective evolution of the lives of both, designers and users enabled Scandinavian advocates of participatory design to move this new design philosophy (at that time) ahead.

"Design is about changing: changing artefacts as well as changing people, organisations, communities" [24]. This emphasis on change and evolution of the entire ecosystem consisting of people, their practices as well as organisations and technology is another differentiator of the Scandinavian participatory design approach.

It is this dialogic exchange and emphasis on mutual learning that also makes action research and participatory action research sources of methodological inspiration for the participatory design movement. There is also an epistemological similarity between the two [25][26][27].

In addition, as Lucy Suchman articulates so clearly, "designing computer artefacts is an inherently value-based activity, deeply implicated in longstanding political struggles of the wider society in which computer science is embedded. Rather than viewing this fact as a breakdown in what should be a disinterested project, this alternative position embraces the place of systems development as a critical arena for the expression and enhancement of values of industrial democracy" [28].

This political stance that formed the basis of participatory design along with the importance laid on explicitly articulating the values being embedded in design of systems is very much in line with what we consider as missing in mainstream UX design frameworks. Participatory design, especially in the context of India and other emerging countries could lead to a complete rethinking of the role of designers and that is very much needed to change the current perspective of the designer as the disinterested and detached expert. This current power dynamic between the designer and the user makes it difficult to empower those for whom the design solutions are

aimed at, to participate and co- create along with designers.

There needs to be a rethinking of the current UX Design frameworks such that citizens become more than mere users and are able to influence decisions that affect them as opposed to one where decisions are imposed on them by designers and business owners.

Participatory design processes are also expected to help users who participate in the process, to experience what it is like to "overcome the habit of submission, a frame of mind that curtails people from fully and critically engaging with the world and participating in civic life"[28].

2.2 Capability Centred Design

The concept and measurement of human welfare has undergone a massive change, from the origins of economic "utility" theory to Amartya Sen's human capabilities approach. Present measures of social welfare used in the fields of economics and development, include not just national income but a variety of composite measures such as the Human Development Index, Better Life Index, Happiness Index, etc.

The Humanist Revolution in economics was ushered in by Amartya Sen and Martha Nussbaum[29],who are together credited with the origination of the "capabilities" approach to human well-being. What people can *do* instead of what they simply *have* is what Sen and Nussbaum focused their attention on in the Capability approach. In his search for the most suitable measures for people's wellbeing, Sen found that income or possessions or fulfilment of desires were not adequate indicators of people's wellbeing. His argument was that people's actual capability of being and doing is what determines their well-being or the lack of it[30].

The capability approach is based on two fundamental freedoms: the freedom of well-being, including functionings and capabilities: and the freedom of agency, including voice and autonomy. Functionings are the various things that a person may value being and doing, and capabilities are the combinations of functionings that a person can achieve. Agency is related to "what a person is free to do and achieve in pursuit of whatever goals or values he or she regards as important" [31].

Capabilities are, therefore, the abilities to do certain things or to achieve desired states of being. Goods, on the other hand, are merely things that one possesses. It is one's capabilities that allow one to use goods in ways that are meaningful to oneself. Sen uses a further term, "functionings," to refer to the capabilities that a person actually uses and hence achieves a certain goal. Capabilities, then, are the full set of functionings that are feasible for a given person. Both Sen and Nussbaum also emphasised that people have the freedom to decide the types of functionings that they value and not be forced to follow someone else's pre decided criteria for what functionings are important for them [15][16][18].

Nussbaum, in addition to Sen's perspective also emphasized three areas of capabilities that would lay the foundation of equality and dignity. She felt that These three areas are the capabilities needed to function (1) as a human being, (2) as a participant in a system of co-operative production, and (3) as a citizen of a democratic state. Nussbaum [18] also, unlike Sen, believes that a 'decent social minimum' can and must be ensured for all citizens, in terms of capabilities. A list of 10 categories

was identified by Nussbaum, as the central categories of human capabilities that are needed for living a life in conformity with human dignity, in which people can properly exercise their human agency[18].

Nussbaum's List of Capabilities include[18]:

(1) Life,
(2) Bodily health,
(3) Bodily integrity,
(4) Senses, imagination and thought,
(5) Emotions,
(6) Practical reason,
(7) Affiliation,
(8) Other species,
(9) Play and
(10) Control over one's environment – both political and material.

This list of 10 capabilities provides a tangible minimum set of capabilities that can form part of the core purpose of any UX design activity and hence a critical component of the citizen designer's toolkit.

How does the Capability Approach Impact Design?

Since technology in its various product / service avatars is closely connected with the enriching of human capabilities, this approach therefore provides a construct to make the design process expand its objectives and outcome to positively impact human capabilities and agency and not just business outcomes. Nussbaum's list of central human capabilities that she felt must be protected by public policy could provide the seeds of what could become the core purpose that helps transform UX design and consequently citizen design. The list of capabilities would provide a starting point in the design process, to reflect on which of the 10 should form part of the outcome, that is, the product/service user experience being designed. On the other hand, building awareness of this list of capabilities and their role in user experience design from the user's perspective would be an important component of the game being conceptualised as part of the citizen designers' toolkit.

There is also an interesting connection between capability theory and participatory design because capability theorists view "agency" not just as the expansion of people's capabilities but also people's active participation in the process that determines that expansion. Just as in participatory design, the capability approach doesn't look at people as helpless and needing experts / outsiders to make decisions about their capability expansion. Hence, the process needs to be participatory and democratic so that the process itself becomes a way for people to exercise and strengthen their agency[31].

An example of how the capability approach can be applied to design has been described by some authors while exploring the design of 'care robots' that are meant to be part of the ecosystem of caregiving for elderly. Coeckelbergh [33][34], a philosopher of technology wrote about evaluating products/technologies like the care robot by measuring their impact on their users' capabilities, using Nussbaum's capability list [18]. If this evaluation criteria was to be used, then these human

capabilities need to be considered early in the design process. According to Coeckelbergh [34]"…a typical motive for introducing robots into an environment has been to maximise profits by replacing human workers. Yet bringing robot caregivers onto the scene could also be motivated by the obligation to meet core human needs. This is a key advantage of the capabilities approach, since it should inform the design and use of robot caregivers in such a way that the "'human"' in human-robot interaction is maintained."

As Oosterlaken has discussed, design can indeed enhance capabilities of individuals thereby enabling them to realise their desired life goals. Design can also collectively change attitudes and help shift behaviour towards a more sustainable and inclusive world [35][36][37][38].

3 Making of Citizen Designers: The Citizen Designer's Toolkit

But how do we ensure that citizens have the required skills to be able to actively participate in the design process? This participation should be such that it provides citizens the opportunity to overcome the lack of confidence when interacting with designers. It is critical that citizen designers are able to not only critique concepts / ideas presented by designers but also be able to present alternative ideas/concepts by themselves. Citizen designers should, eventually, be able to build their own capacity to act for themselves and their communities.

In order for citizens to actively participate in the design process, there have to be ways in which they can be made capable of understanding at least the basics of design. As Dong has pointed out there are a set of important capabilities that are needed to make citizen designers. He categorised these capabilities as information, knowledge, abstraction, evaluation, participation and authority [39].

Connecting participatory design and the capability approach may lead to ways in which citizens can become citizen designers and hence change the design process to create a shared means of expression and reflection between designers and citizen designers. This would perhaps make it possible to have a truly collaborative way for designers and citizen designers to codesign their lives and the world they both aspire to make better.

In order to shift the narrow and limited involvement of users in the design process as is prevalent today to a truly democratic and empowering co-creation exercise will need a thorough revamp of current processes and this revamp can happen only if citizens are aware of their right to participate in design of products/services that will impact their lives and are capable of confidently collaborating with designers and other stakeholders. This is the most important step needed to democratize design.

The concept of enabling all citizens (and not just designers) to have access to the language and process of design and provide them explicit ways to question and reconfigure current designed experiences led to conceptualizing a "game" that can be played at three different levels depending on what the objectives of the players are. A game is the first step in creating an entire toolkit for citizen designers. Using a toolkit such as this would also provide citizens with additional skills and may even lead some

citizens to become professional UX designers, especially at a time when the field of UX Design is in its growth phase and demand for UX designers is rising every day.

3.1 Games Reviewed

In the area of learning and skill development, serious games have become an important mechanism that is transforming learning. Serious games have as their main goal the imparting of education. However, being a game, the format enables the learning to happen in an engaging, fun way. Serious games can range from subjects like history, science, math to teaching soft skills like communication, empathy, etc. Younger learners in particular find serious games a motivating way to learn.

"Games are super-engaging and popular for everybody, across all gender, ethnic and socioeconomic lines," says Val Shute, PhD, a professor in the educational psychology and learning department at Florida State University and a pioneer in assessment within educational games[40].

One of the earliest serious games, Microsoft's Flight Simulator, launched in 1982 still remains very popular. Today, there are hundreds of serious games but some that regularly make it to the top 10 list [41]include:

- Microsoft Flight Simulator
- Tiltfactor Laboratory
- A Force More Powerful
- Darfur is Dying
- PeaceMaker
- World Without Oil
- FoldIt
- IBM City One
- Superbetter

Serious games also have social awareness as a goal along with educating learners about larger issues related to social impact, Katsaliaki and Mustafee have reviewed 35 serious games that deal with the topic of sustainable development. It is pertinent to note that of the 35 games on the theme of "SD" that they reviewed, there were 5 games where the player had to be play the role of a citizen and learn various ways of creating a more sustainable ecosystem [42]. Panzl, Classe, Araujo, and Vossen discuss serious game design as an approach to bring about change in citizens' behaviour towards and engagement with public service improvement. They propose the design of a sample serious game[43].

A review of serious games such as the following (see excerpts from reviews and write ups below) reinforced the value of using a game [44], to enable citizens to become aware of the impact of design in their lives and to also learn how to apply elements of design to bring about change in their own ecosystems.

- Fernando Quiroga, D. & Lucía Agudelo, M. “I got the power”

  This is a game that helps to understand the way in which a social leader emerges within a community in Colombia. The idea is to allow anyone to interact with each proposed scenario and make decisions that help the community. The main motivation is to teach about the importance of social leaders in Colombia. Additionally, the game teaches about some of the risks that social leaders can suffer. And this is a subject that should not be taken lightly and more in these post-conflict moments in which Colombia lives[44].

- González, F., Barrera, S., Albornoz, J. López, H. “La Guerra del Centavo”

  The project “La Guerra del Centavo” seeks to create a game that puts the user in the place of a public service bus driver of the old transportation system in Bogotá. In this system, drivers receive money according to the number of passengers they collect, which causes problems for everyone involved and causes drivers to make decisions about how to drive in order to pick up a significant number of passengers while they meet the traffic rules. On occasion, service users blame drivers for system problems, but in reality they have limited options to work with[44].

- A single Ramírez, S., Alejandro Silva Ariza, J., Zambrano Votto, C., Bautista Cabrera, D. “Una de Dos”

  Player video game that simulates the decisions that a Colombian rural family must face in their daily lives. Every decision will affect the economic resources of your family and their well-being[44].

- Eberhardt, R., Feeley, C., Leung, S., & Seidman, M. “Untitled Policy Game”

  A game about the local decisions that can be made in Puerto Rico, in which players are tasked to make decisions that are best for the island but are ultimately restricted by the resources and agency that they have. Each player has a role that gives them access to two piles of resources: a teacher might have access to social capital and community cards, a housing justice advocate might access government and social capital, a zoning board officer might get government and economy. In the center are random policies that have requirements – if all of the requirements are met based on the cards played in a round, the policy is passed and whatever consequences that policy enacts change the state of the board[44].

- “Fair Play”, *a free, downloadable game in which the player navigates a college campus as an African-American graduate student. It’s about understanding other people’s biases and when and where they crop up[44].*

3.2 A Game for Citizen Designers – The Concept

The current concept is that of a puzzle with multiple solutions that contains all the elements/pieces of the framework. Based on some underlying rules, the ‘player’

would need to use the 'design pieces' of the framework to explore how different combinations would lead to different ways of reconfiguring their experience.

- Level 1 would be for those who would like to understand how design can lead to different configurations of everyday life, ranging from status quo to fundamental change. Playing the game would make players aware of the role of design, the alternative solutions that can be designed to create a more equitable and sustainable future and enhance personal capabilities.
- Level 2 would be for those who would like to also, in addition to what Level 1 offers, understand how business decisions impact design outcomes.
- Level 3 would be for players who have mastered levels 1 and 2 and hence have the capability to function as citizen designers and now would like to wear a designer's hat and understand the role a designer plays.

All three levels, when experienced would provide potential citizen designers with a holistic view of all the elements and stakeholders who impact the design ecosystem and hence enable a citizen designer to navigate through the various points of view and express his/her perspective when involved in participatory design processes.

LEVEL 1. The game, in the form of an online puzzle to be played on phones or computers would have "question cards" stating a design problem on each card, to be solved by the player and "design pieces" that the player could combine to get ideas/concepts as possible solutions to the design problem that is stated on the selected "question card". Different combinations of the "design pieces" would generate different ideas/concepts for the same design problem.

The "design pieces" would be components from the "Universal Values" set, the "Human Needs" set and the 'Capability' set mentioned earlier. The player would pick one of the readymade question cards and to generate suggested ideas/concepts he/she would be allowed to combine any number of "design pieces" from each of the 3 sets. The selected combination of "design pieces" would reveal a specific set of concepts/ideas.

Fig. 5. Prototyping the concept of the game with different colored strips representing pieces from different sets (Values, Needs, Capabilities, etc).

Example of a Question Card that the player could select – "What ideas can I generate for designing a cinematic entertainment product/service for myself and my friends?" On selecting the above card, the game would then present the various "design pieces" that belong to the 3 different sets and let the player decide on what "design pieces" she decides to combine. Lets imagine that the player decides to select the following:

- Values – Self Direction and Self Transcendence
- Needs – Participation, Leisure, Identity and Freedom
- Capabilities – Senses, Imagination and Thought, Affiliation and Play

As soon as this combination is locked down, the game would provide possible ideas/concepts that meet this specific combination of values, needs and capabilities. For example:

- A channel with interactive docudramas that can have different plot progression depending on the interaction by the viewer.
- A channel with crowd sourced ideas for each show that is commissioned, at both the level of the overall storyline and the details of dialogue, locations, props, character development, music, etc.
- A massive multi-creator online futuristic 24/7 show.

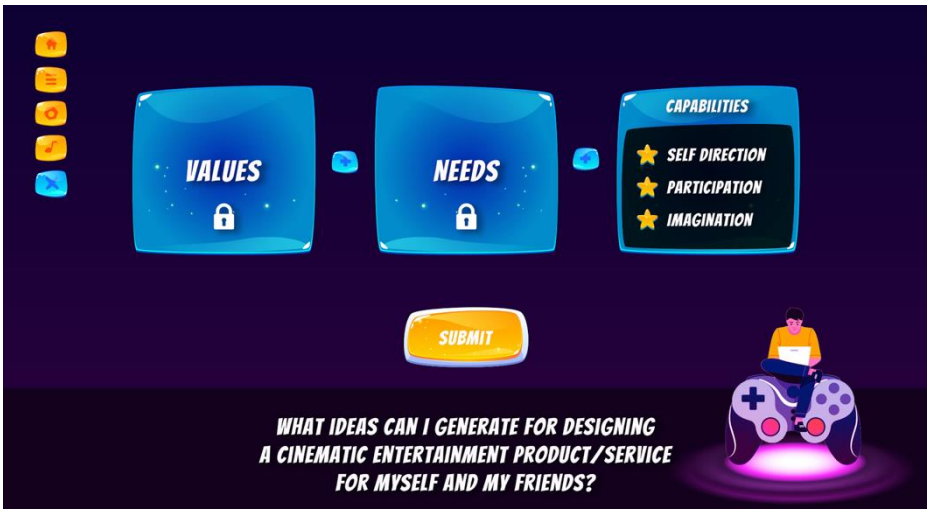

Fig. 6. Prototyping the concept of the game with different colored strips representing pieces from different sets (Values, Needs, Capabilities, etc).

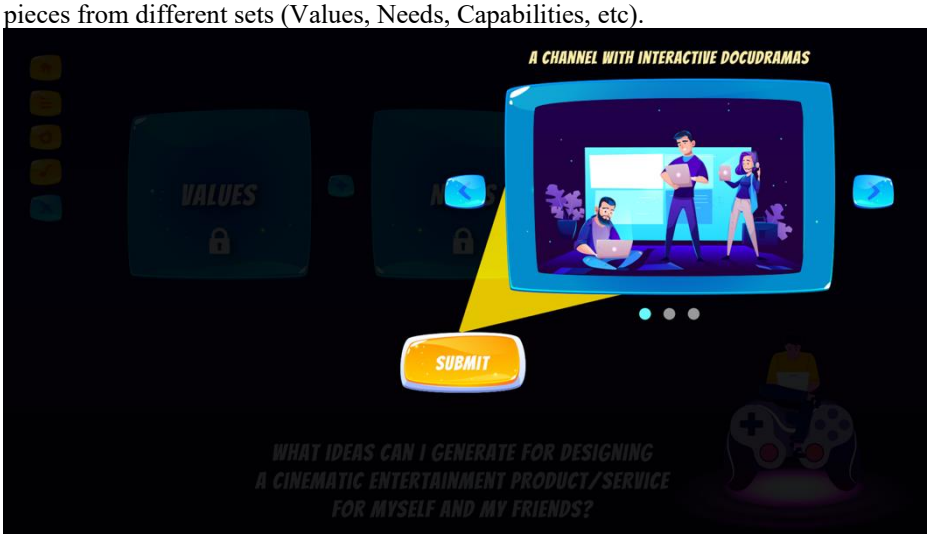

Fig. 7. Prototyping the concept of the game with different colored strips representing pieces from different sets (Values, Needs, Capabilities, etc).

On the other hand, if the player now combines the “design pieces” in a different manner, the resulting ideas would be different. Lets suppose that the player now selects the following combination to be the foundation of ideas:

- Values – stimulation, hedonism
- Needs –Affection, Leisure and Freedom
- Capabilities – Emotions and Play

With the above combination of the puzzle "pieces", a different set of ideas would be generated for the same question – "What ideas can I generate for designing an cinematic entertainment product/service for myself and my friends?"

Possible ideas generated by the game:

Netflix like streaming service

- with similar shows (emotional and dramatic) but with a way to watch as a group even if everyone is not in the same place.
- with shows and films categorized according to viewers' moods
- with shown and films organised according to private categories that cannot be seen by anyone else other than the viewer and public/ family categories that can be seen by others.

As one can see, one combination of elements could provide ideas that are very different from what is current and is experienced by the player today while another combination provides ideas that are mainstream. This experiential awareness that design solutions depend on what elements are considered as fundamental building blocks should lead citizens to awaken to the myriad possibilities that can be generated. Playing the game will also build the citizen designers' capability to identify and demand to know why a certain combination of elements have been privileged over other combinations in generating the design solutions.

In addition, the game would also ask the players for their own ideas and give players the options to generate their ideas and add to the idea pool that the game's algorithms draw upon. Ideas sourced from players could be rewarded/ recognized. The game would also provide deeper levels of exploration and learning for each of the 3 sets from which players can select 'design pieces'. Hence, players would be able to learn about the role of Universal Values, Human Needs and Capabilities, the origin of these concepts and their impact on design (and life). They would be shown successful designs that have taken into account 'design pieces' from these 3 sets and hence can act as exemplars from around the world and demonstrate how specific combinations of design pieces can make the world a better place or not.

LEVEL 2. Players would be exposed to additional categories of "sets" such as business modelling and marketing from which they need to select 'design pieces' in addition to the 3 sets they drew upon in Level 1. At this 2nd level, citizens when playing this game would learn to use components such as conscious capitalism, Cleantech, Greentech, Carbon Disclosure Rating, Social Audit, Green Levy, Social Impact Bond, revenue planning, cost structures, USP, target market, competition, distribution channels, etc. and see how the ideas generated change (or not) based on the combinations the player selects. Hence at Level 2, the player would start to understand the business/financial ecosystem of decision making that affects the design of products / services and their usage and experience.

LEVEL 3. Players who have been exposed to what constitutes design and what can be expected from design can now change places from being a citizen designer to get

an idea of what a professional designer needs to deal with. Hence, at this advanced level, those citizen designers who are considering a professional level of involvement in the design process as a designer would benefit from role playing as a designer in the fictional design world created by the game.

4 Conclusion

A game such as this, would help raise awareness of all citizens about how "designed" their lives actually are and increase their capability to 'demand' that design enables desired reconfigurations to happen. Perhaps even work on the reconfigurations by themselves instead of depending on designers. Playing the game would also enable building citizens' capability to discern the impact of their decisions (as they select different combinations of values, needs and capabilities) on the resulting concepts that emerge and how those concepts help the world become a more sustainable and inclusive planet.

Playing this game would also prepare citizens to contribute meaningfully to participatory design processes and thereby help move citizen participation in design and democratisation of design to become reality. Design that has involvement of citizen designers has the possibility, as Oosterlaken said, "to create products that improve people's real opportunities or capabilities"[36].

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* This paper presents ongoing doctoral research work by the author that is part of an unpublished thesis.