Design for All

Suggestions

· Have well-organized
storage at front desk
· Define the role as the
brand of COTS (50%
greeting and 50%
security)
Creating a better
formation

THE DESIGN FACILITATOR

Students perspective on enabling everyone
to engage equally and confidently in society

COLLEGE for Creative STUDIES

COLLEGE *for* **Creative** Studies

Content of July 2018 Vol-13 No-7

Other Regular Features

GUEST EDITOR

Maria Luisa Rossi

M. Luisa Rossi brings an entrepreneurial, globally-focused and culturally empathetic approach to the growing next generation of designers. Her work focuses on the seamless capacity to deal with tangible and intangible aspects of user experiences, preparing "facilitators" capable of addressing global-local grand challenges.
As an undergraduate in Florence, Italy, her wearable computer project was featured in the prestigious *Domus* magazine, earning her a scholarship to attend the premiere master's program in industrial design at the Domus Academy in Milan. There, she received a Masters of Industrial Design, under the supervision of Professor Ettore Sottsass.
 "The Walking Office" wearable computer project is now displayed in the Henry Ford Museum Permanent Design Collection.
M.Luisa started her career in Paris, working as chief concept designer at ARPE where she designed interiors for private residences and high-end Japanese hotels. Subsequently, she moved to Tokyo where she founded the design consultancy Iavicoli& Rossi, creating furniture and home accessories for Italian and Japanese manufacturers, collaborating on numerous projects with Nikken Sekkei LTD.
She maintained her professional activity while living in Los Angeles in the mid-nineties. After returning to Italy in early 2000, she began her educational career teaching Brand Identity and Critical Design Thinking.

In 2008, her interdisciplinary attitude, business acumen, and design and brand strategy knowledge lead her to become part of the team that launched the new Graduate Program in Design at College for Creative Studies in Detroit. She developed the curriculum and set standards of excellence for the MFA in Integrated Design (formally called Interdisciplinary Design), which has been validated by successful alumni job placement in corporate and design consultancy settings.

M.Luisa has conducted workshops at Singapore's Design Center and EcoleSupérieured'Arts Appliqué in Geneva, Switzerland and lectured in Los Angeles, Mexico City, Istanbul, Ankara, São Paulo, Shanghai, and Gratz.

Specialties:
Design Strategy + Branded Experience Design + Service Design + Interdisciplinary Attitude + In-Depth Knowledge of American, Asian and European Culture and Markets.

AUTHORS

Jinseok Kwon

With his passion and love to design, Jinseok Kwon continues to take interest in various social issues related to education, science, and economics. An industrial designer by education, Jinseok graduated from Seoul National University of Science and Technology in 2015 with a bachelor of design. Then, Jinseok moved to Detroit, Michigan and earned a Master of Fine Arts in Integrated Design at College for Creative Studies. Jinseok has had various career and intern experiences from industrial design at Taphandles and HaA Inc. as an industrial designer to design education at elementary schools in Korea as a volunteer design teacher.
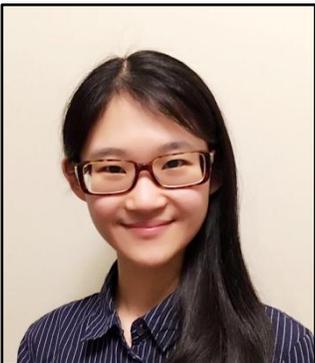
Mengya Wang

Mengya is an active design adventurer who holds Master's Degree at College for Creative Studies in Integrated Design. She started back in China majoring in Visual Communication Design and joined CCS for exploring a deeper meaning of user experience Design discipline making the transition from typography, layout and colors to the understanding of the bigger picture without losing all details. While most design solutions are commonly created for the vast majorities of our society, she finds greater opportunities in designing for the minorities as well who are usually ignored by others. She has a range of internship experiences in industries such as Education, Child-care and Insurance.

Rebeca Sanchez

Rebeca's passion to make human lives better gives her a nonstop desire for improvement. That, combined with her persistence and creativity, has allowed her earn honors degrees in Industrial Design and Integrated Design. During her professional career, she has been exposed to product design combined with engineering. Having recently graduated from College for Creative Studies, Rebeca continues living in Detroit, where she plans to establish herself as Service Designer for the automotive industry.

Aisha Bakde

Aisha got the opportunity to explore the boundaries between design and research switching form problem solving to problem framing.
With a Bachelors in Architecture and Masters in Urban Planning as background, she moved from India to US where she explored further the interdisciplinary design practices in the MFA Integrated Design program. During her graduate time, she broadened her interests to include Human Centered Design and Experience Design graduating from College for Creative Studies in 2017. She is currently working as User Experience Researcher conducting collaborative research to identify consumer values in the world of autonomous driving.

Zhenmin Li

Born in China, Zhenmin dreamed of becoming someone who creates amazing products for people around the word. His dream came true when he attended University of Illinois Urban-Champaign as an industrial design student and worked twice as hard as others to become a top ranked student. While studying in the MFA Integrated Design at College for Creative Studies, he had the chance to get close to the real user, to understand their needs and feelings, and to have empathy of their difficulties. These processes and practices helped him tremendously to become a professional user experience designer. He is currently working as an UX/UI designer at Twisthink , one of the most famous design consultancies in west Michigan. A great team-player and self-motivated learner, he spends most of his time after work learning about new design tools, sales psychology, and communication skills.

Class of 2018
MFA Integrated Design

(from left)
Rebeca Sanchez, ChenyuGan, BelfügSener, Jinseok Know, Ruonan Li, MügeÖztürk

EDITORIAL

Maria Luisa Rossi
Chair and Professor of MFA Integrated Design
College for Creative Studies

"Inclusive design takes into consideration the spectrum of human diversity and the individual experiences of each person to create solutions that have a broader social impact."
 [Design Core Detroit]

College for Creative Studies is located in Detroit and it is, now days, the epicenter of the city's dramatic reversal of fortune. As a result of its high unemployment, low education rates, and health disparity due to poverty, for many observers, Detroit's comeback seemed a remote possibility.

The signs of the Detroit's comeback range from the regained success of the automobile and related businessesto a number of corporations that have relocated their headquarters to the downtown area. The staggering number of start-up businesses has additionally increased demand for real estate.

This does not mean, however, that all of the city's challenges have disappeared. Much of Detroit's development explosion has so far taken place in selected and densely populated areas. Outlying neighborhoods across the city still struggle with pernicious and persistent social issues.

At this crucial juncture of Detroit's progress, inclusive design has an important role to play, by offering socially innovative solutions for problems faced by the majority of its citizens.

The Integrated Design MFA program at the College for Creative Studies in Detroit prepares young professionals to understand such challenges as opportunities and to participate in innovative design that will have an enduring influence on the city's future.

Preparing students to design products, strategies, services and omni-channel journeys focused on the quality of the user's experience, the program has a heavy emphasis on social innovation.

Students have the opportunity to work hands-on, such as being involved with Detroit's Coalition on Temporary Shelter (COTS), a non-profit organization committed to serving the city's most vulnerable families. COTS needed help designing a touch-point platform for its Passport to Self-Sufficiency™, a program initiated in 2015 to assist families with long-term, multi-generational solutions in housing, career, employment, education and training, health and well-being, and financial empowerment.
Students were in charge of helping COTS realize the Passport program's pilot phase. Using empathetic design approaches and co-design methods, students executed and delivered a set of co-creation and communication tools to help COTS and its clients think creatively, share insights and envision each other's goals.

Putting people first, students learned not only how to understand the complexity of how services are disseminated but also how to frame large, multi-part problems and design improvements while having users embedded in the design process. Strongly believing in the power of inclusive/integrated design to shape a more equitable, sustainable, and compassionate society, this program is proud to offer important and socially conscientious learning experiences.

Students projects here collected not only underscore the college's dedication to Detroit's march to recovery for all citizens, but these learning experiences aim to diminish inequities. The results are beautifully reflected in the student's individual choice of thesis topics gathered for this July 2018 edition.

DESIGN FOR POPULATION HEALTH

ANTICIPATORY SERVICE DESIGN SCENARIO

Maria Luisa Rossi
Chair and Professor
Rebeca Sanchez, Chenyu Gan, Belfüg Sener, Jinseok Know, Ruonan Li, MügeÖztürk
MFA Integrated Design, College for Creative Studies

Introduction

By designing for people that may seem like the exception in society, we can design places, products, services, and systems that work for all people in society.

In the winter of 2017, CCS Integrated Design students embarked on future service design scenarios in collaboration with Authority Health, a public corporation created to support public health infrastructure and improve access to healthcare services for uninsured residents of Detroit and Wayne County, Michigan. The objective of the project was to envision how the healthcare system might change the way it delivers maternal and child health services to impact infant mortality.

The infant mortality rate has declined overall in the United States in the last two decades. Among primarily African American communities in Michigan, however, the rate of infant mortality remains high, and in Detroit the rate of mortality was 13.1 deaths per 1,000 births in 2015 — more than twice the national average.

Working backwards from Authority Health's vision of the future, in which the public health crisis of infant mortality has been dramatically decreased, students developed "anticipatory" scenarios for addressing the problem. CCS ID students developed a detailed scope of services for Authority Health, including early identification of high risk women and coordination of the care of "high need" mothers, including barriers to access, among program partners. These services would ideally increase maternal adherence to care plans using locally hired, long-term neighborhood residents who can build trusting relationships and improve maternal health literacy.

Social Issue

The Infant Mortality Rate (IMR) is the number of infant deaths that occur for every 1,000 live births, and is often used as an indicator to measure the health and well-being of a nation. Although the rate of infant deaths has declined overall in the past 15 years, the rate in primarily black communities in the state of Michigan remains high and has gone without significant improvement in the past 8 years, as the city's infant mortality rate remains more than twice the US national average. In 2011, the most recent year for which comprehensive data are available, the rate was 14.7. In the same year 2,300 Detroit babies died before their first birthday. The infant mortality rate in Detroitis as high as in third world countries.

Making positive progress on reducing infant deaths is challenging due to a powerful combination of fragile health and vulnerable economic situations. Detroit's pregnant women are challenged to find safe housing, healthy food, and transportation. A variety of groups, organizations, and initiatives have attempted to address this alarming and persistent rate with a variety of remedies, yet infant mortality remains a major public health issue that must be resolved.

The Challenge

The objective of this project was to develop future service scenarios involving the connection between the social ecosystem and the healthcare system in the city of Detroit, working with sponsor Authority Health to

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seek a collaborative solution. Given the multiple uncertainties facing public heath, scenarios are needed to consider plausible alternative paths for field stakeholders in order to choose the best way forward.

Specifically, students were asked to create scenarios envisioning how the healthcare system can change the way it delivers care and services related to maternal and child health to impact Infant mortality, and how to implement the scenarios into the infrastructure in areas with the highest incidence of infant mortality.

Methodology

This was a case study conducted in educational setting and the methodology was based on the hypothetical impact of a service design scenario.

Service scenarios can serve different purposes of addressing uncertainty. This class was given the task of creating storylines using coherent and consistent assumptions about key relationships and driving forces to develop future service scenarios. Specifically, this class was about "anticipatory" service scenarios.

Students started with Authority Health's vision on how to address the issue in the future and worked backwards in time to distinguish how that particular future could be reached.

The scenarios' definition, objective, focus, and focal questions were defined as the following:

-Service scenarios frame definition:
Authority Health envisions that greater impact of reducing infant mortality in the City of Detroit will come from multiple programs working together, targeting the most vulnerable populations, and meeting their multifactorial needs.

-Service scenarios objective and focus:
From Authority Health's perspective, the scenario's objective and focus is to assess the current impact of programs working to address maternal health and infant mortality in Detroit with a focus on envisioning improvements through collaborative, community focused efforts.

-Service scenarios focal questions:
How could current programs/ initiatives collaborate to be more effective at reducing the incidence of infant mortality in the identified zip codes of Detroit?

The "Authority Health Guidance Team" was established selecting five of Authority Health's members to help students design the overall scenario framework and advise on the formulation of the alternative scenario storyline. Authority Health provided relevant local and state reports on efforts to reduce IMR in the city of Detroit, as well other various documentation describing the issue or work currently being done.

Selected distal, intermediate, and proximate social determinants for IMR in the city of Detroit were based on an existing literature study of secondary research.
City-level IMR and available hierarchical determinants, such as HIV and asthma prevalence, access to healthy food, transportation, health services, female education, maternal mortality, low birth weight, poverty, race, unemployment, education, and public health spending were extracted and used to build a quantitative scenario.

Student constructed a first-order scenario created by using a city of Detroit summary map featuring 12 overlapping maps that show the concurrences of social determinants using data visualization techniques.

Consequently, students interviewed various health stakeholder groups and created a basic storyline that reflected providers' and users' journey in a qualitative scenario.

A cross-analysis of the two sets of insights was conducted about impact, consistency, and relationships between variables of interest and identifying driving forces that cause one path to emerge over another.

A cluster analysis was then used to group insights into a distinct service scenario framework proposal.
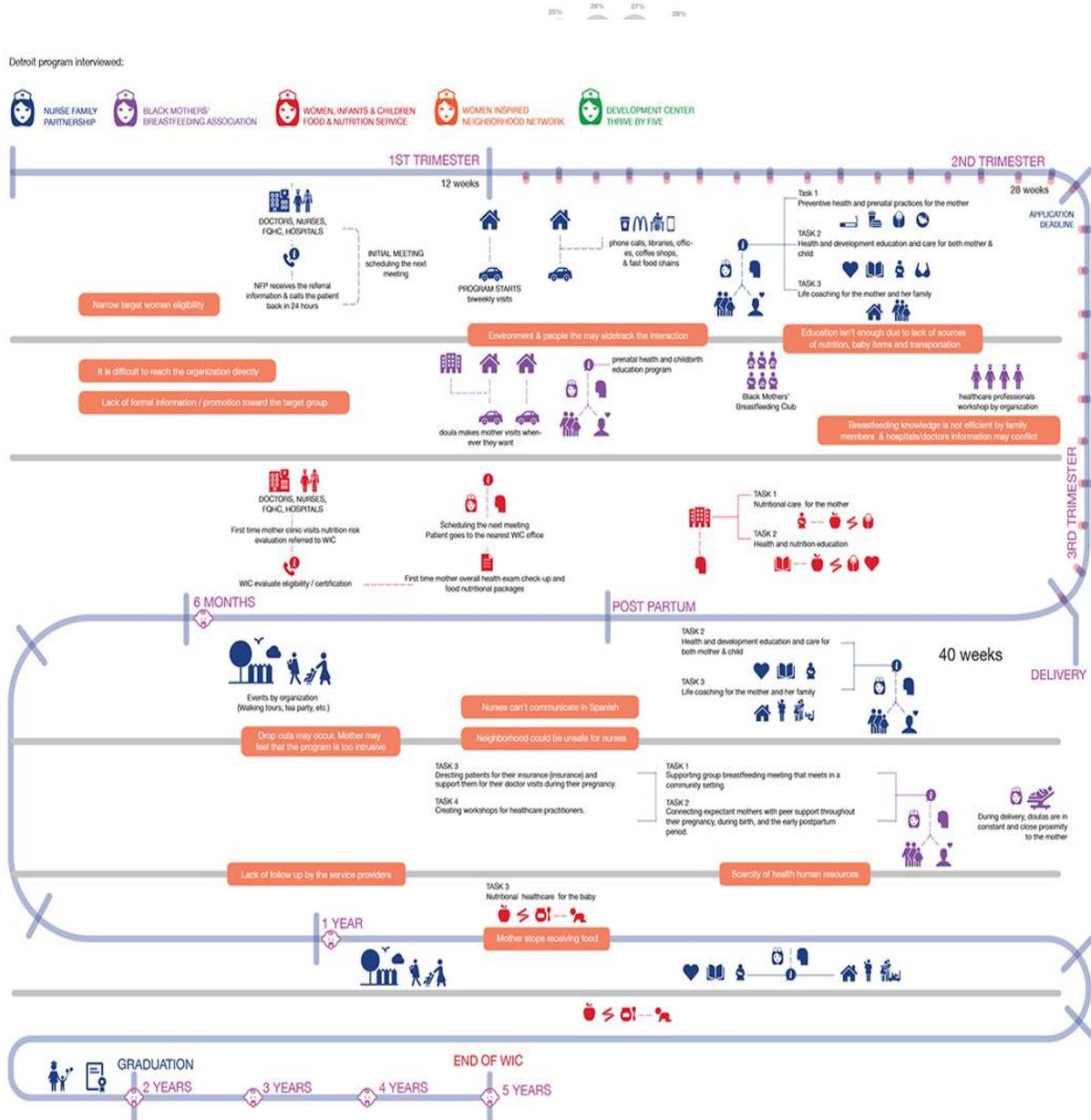

9 months health stakeholders and user journey

Service Scenario Proposal

"MOM_TOW" is a service that bridges the Primary Care Health System and the everyday lives of Detroit's women.

Scope of Hypothetical Services

To amplify the reach of the healthcare system by serving as vital eyes and ears to healthcare's various stakeholders and providing initial support to the patients who need the most help.
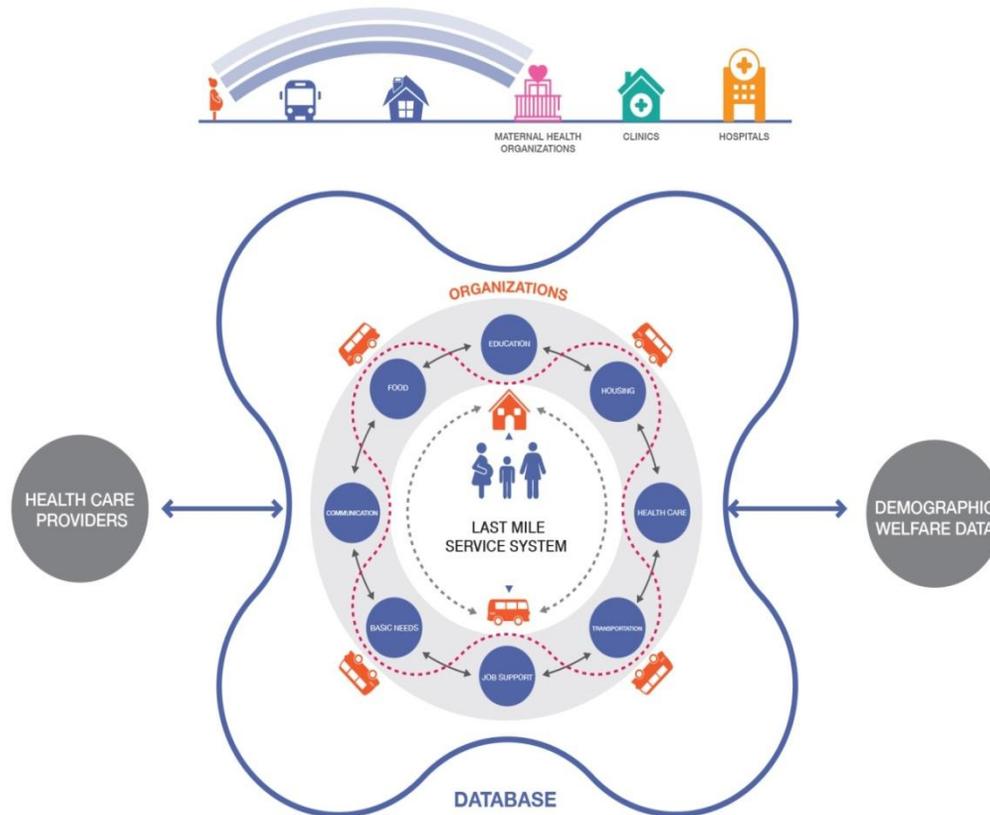
Service Main Components

- Data-generated monitoring zoning Despite advances in and acknowledgement of medical science, evidence suggests that the survival of infants after the age of one month is mainly influenced by the external environment in which the infant lives. Information systems to support resources and non-health policies targeting the socioeconomic environment are as important as health policies for post-neonatal mortality.
- Neighborhood-based workforce Based on the powers of peers/sisters, this system works with locally hired long-time residents [Sis-navigators] that have a unique ability to build trusting relationships and are embedded in the neighborhood population.
- Close network of community programs
- Integration & coordination of all offered programs related to IMR in Detroit city and coordination with non-clinical services such as various social service providers related to socio-economic needs.
- Pregnancy health database

Hypothetical Population Target
Detroit female populations who struggle with stressors such as poverty, isolation and low health education specifically when becoming or who are mothers.

Social Factors:
11 to 35 years old, low/no maternal literacy, limited education, physical disabilities, and poverty.

Detailed Scope of Services

Early identification of women at IMR high risk.
Identify and engage individuals who are "lost" or not connected to clinical care.
Referrals to social service providers and/or to Mothers Care Coordinator Home to address maternal health education, psychological issues and related socio-economic needs (such as employment and housing).

Integration & Coordination
Care coordinator identifies and refers eligible "high need mothers" to Programs partners.
Updates on progress of patients are provided on a regular basis. The care coordinator compares maternal check lists with actual patient utilization and informs primary care providers to align lists. There is regular communication and care planning between the care-coordinator, community programs partners, and primary care clinicians. The partners identify complications and psychological issues early to avoid emergency room visits.
Barriers to access such as transportation, and cost are addressed. Partners educate & remind patients about timetable for visits and prepare patients for appointments. Mothers are accompanied to routine medical visits as needed. Motherhood care plan and goals for self-management are reinforced. Hospitals with are alerted to urgent medical issues.

Direct Hypothetical Benefits-
Increase maternal care adherence
Create the role of Sis-Navigators that can play an important role in improving health outcomes for racial and ethnic minorities, as well as other underserved populations, in the context of a changing healthcare environment.
-Evaluate & improve maternal health literacy
Improve Detroit women's trust in primary care providers. Extends PCPs and programs providers via Care Coordinator for targeted patients who are higher risk. Gives proactive, earlier identification of and response to prevent IMR adverse events.
Increase pregnant women's engagement in routine primary and preventive care visits.
Increase communication between pregnant women and providers for more responsive clinical care.

Hypothetical Geography Identification
Provides rational on how to select Detroit's areas of intervention based on social determinant data gathering.

Expected Hypothetical Eligibility
All pregnant women who reside in Detroit.

Service Hypothetical Benefits
Better IMR outcomes
Improving the ability of Detroit's women of varying risk to self-manage their motherhood care needs.
Enables IMR programs-based staff to operate in concert and achieve greater job satisfaction. Enables

clinic-based staff – Primary Care Providers - to operate in preventive mode to achieve greater results. Extend PCPs and IMR programs via the Care Coordinator "Home" for targeted patients who are higher risk. Proactive, earlier identification of and response to complications to prevent IMR related adverse events with a reduction in ER visits and inpatient days. Increasing patient engagement in routine primary and preventive care visits. Increasing communication between patients and providers for more responsive clinical care.

Conclusions

The 15 weeks project was a case study conducted in educational setting and the methodology was based on a hypothetic impact.

Authority Health's vision of tightening a loose net of disconnected medical services was integrated with social services in order to build a comprehensive, accountable system of care that will engage the women of Detroit to improve the conditions that lead to infant survival through the first year of life.

The project was extremely well-received among stakeholders, including the client Authority Health which plans to implement a new service plan derived from the CCS Integrated Design case study, by the financial sponsor Ford Blue Oval Network, that actively supports new initiatives for building sustainability and improving the quality of life of communities, and by the City of Detroit's Health Department which is in the process of developing a similar solution.
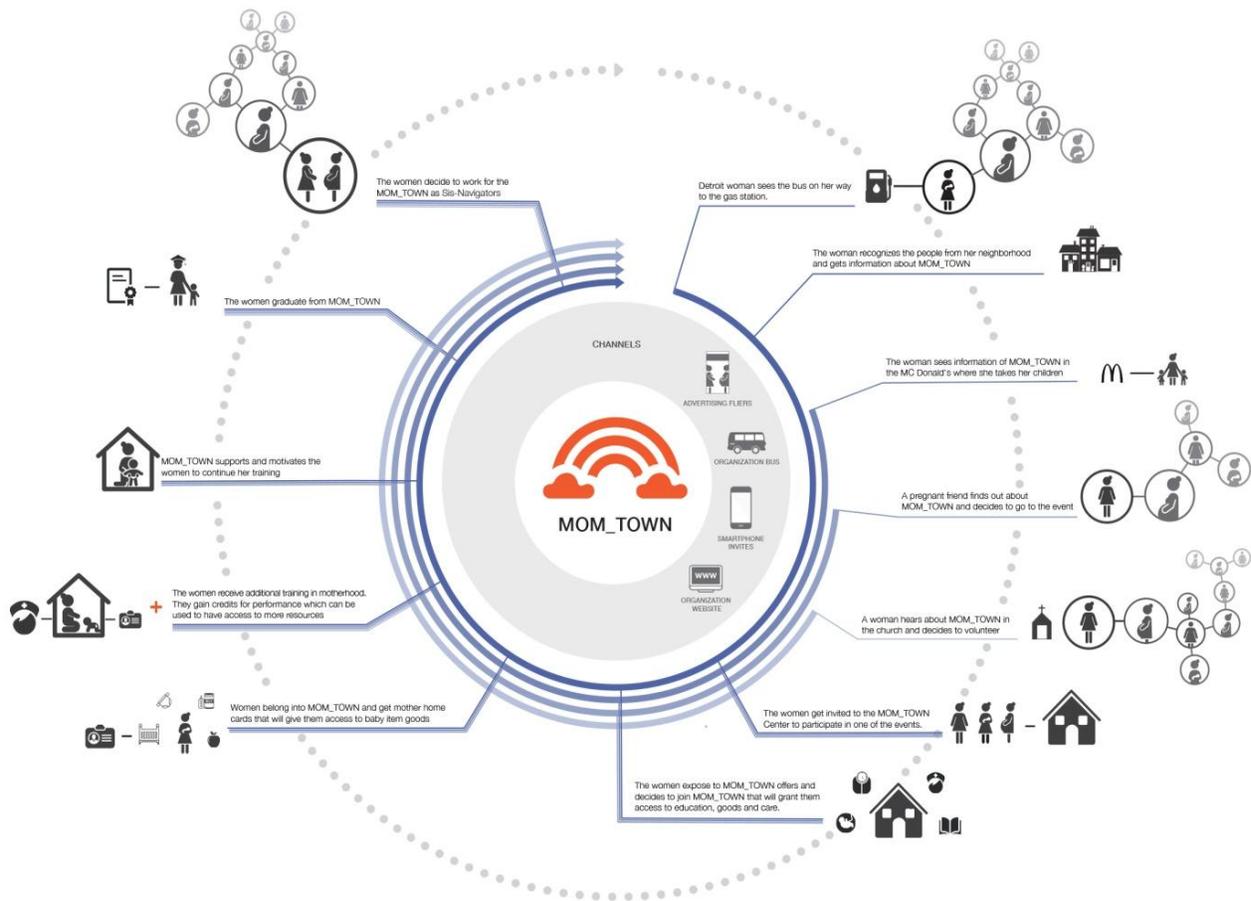
HARMONIOUS INTEGRATION OF FOREIGN-BORN IMMIGRANT CHILDREN INTO U.S. SOCIETY

Jin Seok Kwon

MFA Integrated Design

College for Creative Studies

Abstract

International migration is one of the most dominant global trendsand the number of foreign-born residents in the United States has been increasing drastically. For this reason, the percentage of foreign-born immigrant children is also increasing. Immigrant children are exposed to many stressors which cause them to have higher risks of depressive symptoms and poor academic results, resulting in an increased risk for poor adaption. This thesis is pursuing better cultural and emotional adaptation of foreign-born immigrant children with an immigrant-centric perspective. In this thesis, stressors that can negatively affect the foreign-born children's development during migration and resettlement have been analyzed holistically and the design solution will improve their adaptation in the United States by enriching their experiences and interaction with peers, local communities, and the app platform. This project aims to help both immigrant and non-immigrant children respect each other and result in the harmonious integration.

Introduction

International migration has remained a constant trend over the past decades (United Nations, 2016, p. 5). The United States has been experiencing the largest number of the immigrants with the highest increase in the world (United Nations, 2016, p. 18).

Foreign-born immigrant children are exposed to various stressors that can negatively affect their development and assimilation. When first-generation immigrant children do not develop and integrate well into society, the negative effects can spread to second and third-generation immigrants (Potochnick & Perreira, 2017). For these reasons, it is important for the foreign-born immigrant children to assimilate into society with an immigrant-centric perspective.

Foreign-born Hispanic children, who are the majority of foreign-born children, are exposed to more risks and less likely to complete a college degree than other students (Joo & Reeves, 2015). Latino foreign-born immigrant children have more emotional risks, such as depressive symptoms, feeling hopeless, and considering suicide (Potochnick & Perreira, 2017).

This is because they are exposed to various stressors before, during, and after migration. Many Latino immigrants have lived in poverty before their migration and have been exposed to crime, war, and violence. Mexicans and other Central Americans have limited access to authorized migration, so they migrate without legal authorization resulting in arduous migration experiences such as robbery, physical attacks, accidental injuries, and sickness during the migration (Perreira & Ornelas, 2017).

During settlement, foreign-born immigrant children are more likely than non-immigrant children to live in or near poverty (Child Trends Data Bank, 2014). Latino immigrant families are also more likely to be undocumented than others (Rosenblum & Ruiz Soto, 2015). Immigration status is associated with foreign-born children's wellbeing. This is because children with unauthorized status do not have access to Medicaid (Wallace, Torres, Nobari, & Pourat, 2013)and they have risks of experiencing deportation of their close

family. Latino-born immigrant children are at more risk to have problems with English than children from other families (Camarota & Zeigler, 2016). Discrimination is associated with immigrant families' depressive symptoms, ultimately diminishing children's educational motivation and achievement.

Of course, foreign-born immigrant children have benefits, such as bilingualism and biculturalism. Bilingualism is beneficial to children's development and future opportunities. Bicultural adaptation of minority children and adults is considered to produce the healthiest and most successful overall outcomes (Toppelberg & Collins, 2010).

In this thesis, the ultimate goal is harmonious integration of foreign-born immigrant children by enriching positive experiences and reducing negative stressors with an immigrant-centric perspective. It is expected that harmonious integration would be beneficial to not only immigrant population but also non-immigrant population and the U.S. society.

Methodology

Secondary Research
In order to collect and analyze data from Latino-born immigrant children, information about the migration phenomenon, foreign-born population, immigrant children, and the Latino population have been separately collected. The data used for this thesis came from these sources:
- The global level of information about international migration: *United Nations* and *OECD*
- The national level of information and statistics about migration and immigrants: *Census Bureau* and *Pew Research.*
- Immigrant children's issues and causes & effects of issues, including mental disorders, discrimination, and language: *PMC* and *Vassar College.*
- Specific information about Latino-born immigrant children: *Center for Immigration Studies* and *Child Trends.*
- Features of Latino families: online articles

Primary Research
Survey
The survey was conducted between October 19th and November 2nd, 2017 with 65 participants. All participants were born outside of the U.S. and migrated during childhood. All participants were screened to ensure they would be appropriate participants. The survey questionnaire was built using *Google Forms*, and the survey participants are *Reddit* users. They are from Mexico (29), Central America (6), Europe (6), Asia (6), South America (3), North America (3), the Caribbean (2), and Africa (1).

In-Depth Interviews
Based on the results of the survey, In-depth, semi-structured interviews were conducted to obtain more qualitative data. Interviews were conducted in person and via phone. The interviewees who participate in the in-depth interview are:
- A Latino-born immigrant adult who migrated during childhood
- A coordinator, managers, and two directors of organizations for Latino youth in Detroit, such as *LA SED, DHDC,* and *Living Art Detroit*
- A director of organization in Southwest Detroit, *Mexican town Community Development Corporation*
- A psychotherapist specializing in child development at *Troy Psychotherapy*

Open-Ended Survey
With the same structure as the in-depth interview questionnaire, an open-ended survey was conducted. Seven foreign-born immigrants who migrated during their childhood participated in the survey.

Analysis

Latino-born immigrant children have more risks of mental disorders and lower academic attainment than other children. Not only before and during migration but also after migration, they are exposed to various factors which have negative effects on Latino families' adaptation and their children's development, such as poverty, economic status, social status, language, and discrimination.

Factors Which Affect Lower Academic Attainment
Depressive symptoms affect immigrant children's educational achievement and academic attainment. This is because depressive symptoms can reduce children's sense of belonging in school, educational motivation, and academic achievement. Anxiety can also have effects on children's academic achievement and attainment. Language proficiency is directly related to both academic achievement and mental health including depressive symptom and anxiety. When children's experiences are limited, it can negatively affect their college completion. Therefore, we need to reduce children's depressive symptoms for foreign-born children's academic achievement and attainment.

Factors Which Cause Mental Disorders
Traumatic events before or during migration can cause immigrant children's depressive symptoms. After migration, they are still exposed to various factors which may negatively affect children's mental health, such as poverty, economic status, legal status, language, and discrimination. Depressive symptoms are usually affected by legal status, language, and discrimination. Children who experienced the deportation of very close family or lacked attention from parents are more likely to have depressive symptoms. Anxiety is caused by economic and legal status.

Personal Motivation and Social Supports
Even though social supports can immediately improve children's language development, social supports cannot reduce their anxiety. Personal motivation can reduce both anxiety and depressive symptoms. Therefore, social supports need to enhance children's personal motivation. In addition, Latino children's college completion will be improved when social supports broaden their experiences in the United States.

Latino Families' Identity
Bilingualism and multiculturalism are unique features that foreign-born immigrant children have, and preserving Latino culture in the United States is recommended. Family ties are a very important value for Latinos. Awareness of parents' sacrifice before, during, and after migration can increase Latino children's personal motivation.

Important Age Group
Foreign-born children between 13 and 16 years old are the most important population because of risks and possibilities. There is a relationship between foreign-born children's age of arrival and risks of not adjusting to a new environment due to many factors. To be specific, children who migrated after the age of 12 have many risks, both linguistic and educational. However, children 16 years old or under have less linguistic and educational risks when social support and/or personal motivation has been applied. For these reasons, foreign-born immigrant children who moved between 13 and 16 years old are the target users in this project.

Latino Family's Story

Based on the research, a young Latino family's migration & resettlement story is written. This Latino family has two children. One is 12 years old and the other is 3 years old. Before migration, the young Latino family lived in a rural area in Mexico. They experienced poverty and violence, and parents decided to migrate to the United States. The parents moved to the United States leaving their children with their grandparents. The parents found jobs with their siblings' help. One year later, the parents helped their children cross the border with their grandparents.

The father is a construction worker and the mother works on a farm. Even though they work very hard, their earnings are low. They usually work until late at night, so they do not have enough time to interact with their children. They do not own a house, so they move frequently.

The parents cannot drop their children off at school because of their immigration status. Instead, the children use public transportation or transportation offered by the non-profit organization in the city. The children attend a Latino organizations' afterschool programs. The older child is not familiar with English, so she is very shy when she needs to speak English.

One day, an uncle was deported because of racial profiling. Because of it, the family has decided to not go out of their neighborhood anymore. Even though children have activities outside of their neighborhood, the parents cannot attend. The older child decides to attend college after her graduation. It is hard for her to seek financial support. After starting college, she has difficulty catching up in a class because of her limited experiences. She is currently considering dropping out of college.

Opportunity in Market

There are many strong social media platforms and apps that would be the potential competitors in the market. However, none of these services focus foreign-born immigrant children or teenagers. Most of them do not offer enough educational contents or encourage participation in local activities and/or interaction between peers from different backgrounds. Considering the necessity of harmonious integration of foreign-born immigrant children, this project will have a unique value proposition in the market by enriching their experience in the United States.

Key Objectives

The ultimate goal of Harmonious Integration of Foreign-born Immigrant Children is to provide enriched experiences which help foreign-born teenagers adapt better to life in the United States. This project will approach not only foreign-born immigrant teenagers, but also native-born teenagers because good adaptation cannot be achieved without exploration in the society and interaction with the non-immigrant population. To achieve this ultimate goal, there are three focus items:
- The design solution would offer diverse information and support for foreign-born immigrant teenagers to participate in local activities.
- The design solution would encourage exchange of cultural experiences by enhancing interaction between peers from different backgrounds.
- The design solution would create more opportunities for friendships between teenagers from different cultures.

Target Population

Young Latino families who recently migrated to the United States with their teenage child or children.

Target Users

The main target users are foreign-born immigrant teenagers between 13 and 16 years old. This is because they have the highest risks of poor adaptation and the most possibility to change. Additionally, native-born teenagers between 13 and 16 years old are the target audience in this project. This is because it is important to provide foreign-born immigrant teenagers with chances for enough exploration in the society and interaction with non-immigrant teenagers.

Foreign-Born Immigrant Teenagers

Profile: More than 50% of the foreign born immigrant teenagers are Hispanic, mostly from Mexico, Central America, and Caribbean. They are more likely to not speak English well than immigrants from other continents when they first come to the United States. Additionally, this population is less likely to have legal immigration status. They also have risks of poverty and tend to experience discrimination in their neighborhood.

Needs: This project needs to focus on foreign-born immigrant teenagers from Latin culture, specifically targeting 13 to 16 years old by offering support for their immigration status, language, and poverty. Reducing experience of discrimination would also be important for those teenagers to feel welcome in the United States.

Goal: The goal of foreign-born immigrant teenagers is better adaptation into the U.S. society in terms of reduction of symptoms of depression and anxiety and improved academic achievement and college completion.

Motivation: Topics interesting to teenagers, chances to ask questions and share concerns, and make new friends from different backgrounds who live in neighbor cities and/or neighborhoods would be main motivation. Resources and supports for local activity participation could motivate these users.

Native-Born Teenagers

Profile: Native born teenagers feel very comfortable speaking English regardless of what cultural background they have. In the case of native-born teenagers from immigrant families are more likely be bilingual. Compared to foreign-born teenagers, they tend not to know cultures other than American well.

Needs: They need various experience to interact with people from diverse backgrounds. This is because the United States are getting more diverse and the portion of immigrant population is the most dramatically increasing in the world.

Goal: The goal of native-born teenagers is better understanding and empathy toward foreign cultures from various experiences and interaction with immigrant teenagers.

Motivation: Stimuli which helps teenagers to participate in local activities and events and get compensated after the local activity participation would motivate these users.

Design Solution

Primary Scope
1. Exposure to diverse local activities and events and encouragement of participation
2. Experience exchange between different cultural backgrounds
3. More opportunities to build new friendships

To achieve these purposes, an app & UX design including system map, user journey, persona & scenario, app GUI design, app workflow, and a prototype will be delivered. A mobile application was designed because apps have the biggest potential to access the target population, foreign-born immigrant teenagers. First,

teenagers tend to be obsessed with their own phones. According to Pew Research, 73% of teenagers had access to a smartphone in 2015. In this research, 71 percent of Hispanic teenagers had their own smart phone (Pew Research Center, 2015). When I observed Latino teenagers at Detroit Hispanic Development Corporation, I was able to see teenagers spending their free time with their own phones. Second, a mobile application is an economic solution for target users. Because the target users in this project are more likely to be in poverty, the solution should consider how encourage users to access to the solution without expensive costs. When mobile application is developed, it does not require high costs and can be distributed to users with lower prices than products. Moreover, mobile application would help to utilize all the high technology components that target users already have in their phone. For these reasons, a mobile application is the most effective and efficient solution.

ExPeeR will mainly offer three features: First, *ExPeeR* helps immigrant teenagers enjoy more various and beneficial experiences in the United States by encouraging participation in local events and activities. Second, *ExPeeR* connects immigrant and non-immigrant teenagers and offers better interaction to build positive attitudes and values in their minds by creating better experiences and benefits from the interaction between them. Third, *ExPeeR* offers a virtual place where teenagers can share their concerns and opinions to find solutions or help when they are in trouble.

Naming & Logo

The meaning of *ExPeeR* is expanded experience with peers. This name has been created to have similar pronunciation with the original meaning, 'expanded experience with peers', and repeat letters which are used the most in the words. The logo is designed to emphasize the expansion using letter X. These two complementary colors because this color composition reduces confusion in user interface.

EXPANDED EXPERIENCE WITH PEERS

RGB: 89/89/92
59595C

RGB: 250/181/27
FAB51B

[colors have been chosen based on the result of the user test with Latino teenagers]

Scenario

In the app, teenage users will follow this process:
1. Registration: By putting information such as language, cultural background, nickname, role model, and basic personal information a user starts to use *ExPeeR*.
2. Receiving welcome message: After a user sign into the app, he or she will receive a message from an existing user. During this time, they will talk anonymously, and the new user will get a chance to get to know what is going on in this app by talking to peers through sending messages. This is the first step of making new friends in *ExPeeR*. Users can skip this process if they do not want.
3. Talking with other users: *ExPeeR* provides a place where users can post their topics of interest and concerns with or without anonymity. They share thoughts and opinions about what they are interested in, such as TV dramas, movies, sports, and others. They can share their concerns, such as family issues and their school life, with other users anonymously.
4. Making friends: with the previous process, users will have new friends who do not live in the neighborhood, so that they will have more various friends with more diverse backgrounds.
5. Planning activities and inviting friends to the activities: *ExPeeR* provides information about local events and recommends with supports to help them to participate in activities, such as transportation free tickets, and incentives, such as local restaurant discount coupons. Users will plan activities and share information with their friends. They also share their coupons and tickets that they have with their friends. Those things will help them to encourage them to explore the U.S. and have deeper friendship with friends.
6. Welcoming other users: When users get familiar with the app, they start to welcome newcomers. Welcoming newcomers is also beneficial for existing users because it is a challenge which gives them incentives.
7. Achieving goals and benefits and getting compensated: All of this process will encourage users to make new friends, share concerns, have fun with their favorite topics, and explore the United States. Based on their achievement, users will get compensated, and compensation will include scholarships for educational programs and free membership opportunities from their local non-profit organizations and museums.

*Existing Users'
Welcome Message* · *Sharing Concerns
Anonymously* · *Talking about
Interesting Topics* · *Making New Friends
from Different Cultures* · *Planning Activities and
Inviting Friends* · *Welcoming
New Users* · *Achieving Goals
and Benefits* · *Getting Compensation
Based on Achievement*

Features

ExPeeR basically offers three kinds of functions. The first function is connection between users to broaden their friendship. The second function is to offer places to talk about topics that teenage users are interested in and to share concerns anonymously. The third function is to provide information about local events and activities based on each user's location information with a variety of supports which would motivate users to participate.

There are four ways to accomplish these functions: Activity offers information about local events and programs with motivations. In this function, supports and incentives for activity participation will be shown and it is expected that this would encourage teenagers to participate in and create more activities and reduce users' lack of experience in the United States. In Post, users will talk about their favorite topics, such as movies, TV dramas, sports, and others. They can also share their concerns and find answers anonymously. Normal users can share local event information using Post.

Lastly, friend and message. These actions will increase users' level of involvement in the app. Friend shows the users' friend list. With Message, users can talk to other users and share their coupons and local event information. The first conversation through Message will be the first step to learn a new language including not only English but also other languages and various cultures.

There are also auxiliary functions which increase the usability of the main functions: Quests shows users' challenges in order to encourage them to do activities. For example, when user welcome newcomers by talking or becoming friends, they would receive coupons. Coupons and free tickets from Quests and activity participation will be stored in their Inventory. Users will collect and share discount coupons and free tickets with their friends with this function. Users can use Anonymous Mode anytime they want. Anonymous Mode is designed to protect teenage users in the cyberspace and encourage emotional communication. It is expected that this function would help teenagers to be open-minded to share their concerns.

Motivation Strategy

There are four types of motivation which enhance users' participation: Quests, Activity Support, Incentives, and Rewards. Quests is designed for users' action in the virtual space. When a user completes a mission in the quests, he or she would get compensated. Activity Support helps users participate in activities, such as transportation tickets and discount coupons. With this support, teenagers would access events and activities with lower costs. Incentives are compensations for users' activity participation. Every time users participate in local events or activities, they would get incentives such as coupons for local restaurants and markets, free exhibition tickets, and promotion codes for free movies and TV dramas. Rewards are the ultimate compensation. Scholarships for educational programs, museum memberships, and additional credits in school are included. Rewards are distributed based on each user's achievement. Achievement

would consist of activity participation, quest completion, multimedia message posting, and comments on posts.

Activity Support	Activity Incentives	Quests	Rewards
When users decide to participate in activities	After users participate in activities	When users complete the quest	After the specific period ends

Partnership

These are stakeholders who are directly related to the immigrant teenagers' education and their families' settlement.
Educational support: Schools and youth programs
Settlement support: Migration welcome center and Latino community
Healthcare: Metal health service
Transportation: Public transportation
Media: Newspapers targeting immigrant population
Government: Local and state government

Safety Policy

Because *ExPeeR* is a complex place which offers both virtual and real experiences to immigrant and non-immigrant teenagers, various safety policies dealing with user's demographics such as immigration status, economic status, and their age are necessary.

Safety Policy in the App
Cyber harassment: Cyber harassment is an issue easily expected to happen in the virtual space, and it will be regulated by report system. All users have the right to report users who harassed them virtually or in person. After verification, users with bad history will be not only banned but also accused of a crime when the level of his or her harassment is serious. Report system also affect users' achievement score, so users with bad history in messaging and/or posting will not get compensation and benefits on their achievement. Racism and sexual harassment in the virtual space will also be dealt in this scope.

Safety Policy Outside of the App
Activity safety: For teenage users' safety in their activities, their location information will be sent to their parents and their teachers when they are having and participating in activities with *ExPeeR*. Their parents and teachers can check their location anytime. If teenagers are exposed to dangers, they can ask for help from their teacher and parents with very simple interface. Because each district will be managed by local organizations and *ExPeeR* also reacts based on users' location, it will contact local organization which can help the users in emergent situations.

Immigration status screen: Because many foreign-born immigrant children's parents do not have authorized legal status, *ExPeeR* encourages connection between teenagers and teachers or other professionals rather than their families. In case of legal issues, professional help is more useful. For this reason, based on users' location, *ExPeeR* will find and suggest non-profit lawyers or other immigration professionals. In an emergency situation, *ExPeeR* will create a virtual place where all information about the situation will be shared with teenagers, teachers, parents, and professionals through *ExPeeR*.

Register
For teenage users' safety in the app and their activities, there are some steps to activate users' accounts. After entering personal information which is required to sign up, they must be identified using their phone number and then connect their accounts to both their teachers and their parents. Without personal identification, users will not be able to use any services in ExPeeR. Once the personal information is entered, functions related to posts, such as creating posts and checking posts, are available to them. However, if they do not have connection with either their parent or teacher, they cannot use functions related to event participation. The connection with a parent and a teacher will create a new relationship between them which will be useful if a teenage user encounters an emergency situation.

Personal Identification
Personal identification is the first step for users to sign up for ExPeeR. Users have to put their phone number, and they will get a verification code through their SMS. Without the personal identification, users cannot enjoy ExPeeR. This is because the personal identification is one of the most effective way to manage online and offline safety. Even though there are many functions which can be used anonymously, users are required to pass this step to enjoy ExPeeR.

Teacher Authorization
Teachers who can manage teenage users' activities are authorized by ExPeeR. All teachers must be from schools and educational organizations, and these organizations will be ExPeeR's partner. This is because educational organizations for immigrant children usually have good relationships with not only children but also with their parents. They are also good at both English and a foreign language, such as Spanish. Additionally, they have connection with other educational organizations and other organizations which specialize in different things, such as settlement, legal issues, and job placement. They have abilities to solve various issues and problems when users are in trouble.

Parent Authorization
Users also have to connect with one of their parents. Without parents' authorization, users cannot enjoy functions related to events including sharing and using coupons, checking event information, participating in events, and getting rewards. After parents' authorization, parents will get their child's information, such as their decisions to participate in events and their location information when they are participating in events through SMS. Text messages are provided in two languages based on their preferences. Differently from teachers, parents do not have to sign up for ExPeeR.

Function Availability
Even though anonymity in ExPeeR is designed to protect users, it was also necessary to consider negative effects of anonymity. For this reason, functions have been divided into two types, functions which can be used anonymously and functions which can never be used anonymously. To be specific, users can create and comment on posts either anonymously or openly, but they cannot post event information anonymously. Users can check information about local events anonymously.
However, the most important thing is that even though there are many functions which can be used anonymously, this anonymity is only between users. Users are not anonymous to ExPeeR.

Report
Cyber harassment is an issue easily expected to happen in the virtual space, and this will be regulated by the report system. All users have the right to report users who harassed them virtually or in person. After verification, users with bad history will be not only banned but also accused of a crime when the level of his or her harassment is serious enough.

This report system also affects users' achievement score. Users with bad history in messaging and/or posting will not get compensation and benefits on their achievement. Racism and sexual harassment in the virtual space will

also be dealt in this scope. Because users who have reported cyber bullying have contributed online safety, they will receive activity scores based on the number of reports. The scores reflect only verified reports. Incorrect or false reports will not be counted.

Safety in the app Such as preventing cyber bullying	Safety outside of the app Such as when users are participating activities
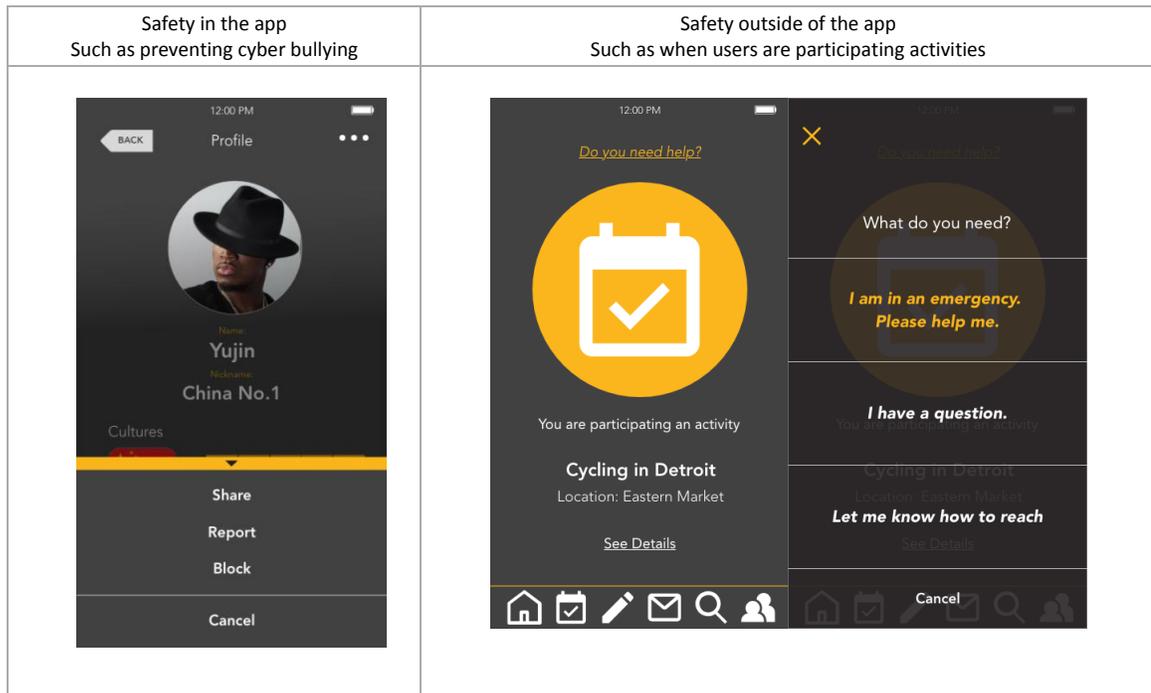
Block

Block is a function to prevent a user without ExPeeR's verification, while report system is to punish cyber bullies. Block does not include any kind of punishment, but it removes all the connection between two users when one user block the other. After you block a user, you will not see anything related the user you block including this user's posts, messages, comments, and profile.

Post Monitoring

All online contents including posts, comments, and event information will be monitored 24/7. There are three essential steps which monitor online contents proactively. First, a word filter which automatically scans users' posts, comments, and messages will change or remove inappropriate language. Second, partners will participate in monitoring posts. They will monitor posts and report bad users and posts while checking the public opinions about their services such as movies and TV dramas. Third, ExPeeR will monitor all contents by itself.

Activity Safety

Information Flow about Teenage Users' Event Participation

For teenage users' safety in local events and activities, information including their location and decision of event participation will be sent to their parents and teachers. First, when a user clicks 'Going' on an event information page, event information including date, location, safety level, and event organizer's information is sent to both parents and teachers with a link. Second, when a user is going to or participating in events, their location information is also sent to his or her parent and teacher, so that they can check on the user's safety anytime. Parents and teachers can also participate to monitor events, and they will have chances to give feedback to ExPeeR and event organizers.

Help for Teenage Users

Teenage users can ask for help through ExPeeR when they are exposed to dangers. With one click, teenage users can let their parents and teachers know that they are in an emergency situation. ExPeeR also informs users of how to reach local events that they are going to and answers users' questions in real time. Telephone counseling is also open to users.

In Emergency Situation

ExPeeR plays a leading role in emergency situations. Connection among teenage users, parents, and teachers is created by ExPeeR in order to prepare for emergency situations. This is because many foreign-born immigrant children's parents do not have authorized legal status, so it can be very difficult for them to appropriately deal with various issues, such as legal issues, by themselves. For this reason, ExPeeR encourages new connections with other professionals and organizations. Based on users' location, ExPeeR will find and suggest non-profit lawyers or professionals from the partnership. Teachers and educational organizations would also have connections with other organizations in local areas. This connection in ExPeeR will help to deal with emergency situations holistically by using all available resources.

Organization and Event Assessment

In order to keep all activities and events safe, there will be three types of assessment. These will be conducted by teenage users, parents, and partners. Teenage users will rate events and activities that they participated in. Parents also can participate in local events and activities and rate if they want. Parents' assessment will be conducted through the website because they do not have accounts in ExPeeR. Partners including teenage users' teachers will have a minimum number of local activities that they will have to monitor in person. Based on these three assessments, each organization will have its own scores and this information will be shown on event information and shared with teenage users' parents through text messages.

Process: Testing

User Test with Program Manager

This user test was conducted with a program manager at *Living Arts Detroit*. This user tested the prototype using a mobile app mock-up with this test structure.

User Test with Teenagers

This user test was conducted with two teenagers attending an afterschool program at *Living Arts Detroit*. The teenagers are from Latino immigrant families. One teenage participant who is 16 years old moved to the United States when she was 2 or 3, and the other teenager who is 14 years old was born in the United States. The users tested the prototype using a mobile app mock-up.

Usability Test with Non-English Speakers

Due to target users' language issues, a usability test with people who have not been exposed to English was conducted consequently. Two Korean people who participated in this test do not have any experiences in English-speaking countries. This test focused on how comfortable they feel with the application and if the graphic interface is understandable. The App design was updated based the results of the first user test, and the test was completed online with a short video and images. This is because these participants are not in the United States.

User Test with an American Student

In order to validate if *ExPeeR* has attractive features for native-born teenagers, a user test with an American student. The participant of this user test is a college student and 19 years old. This user test was completed with the same structure of the previous user tests with Latino teenagers and a program manager at Living Arts Detroit. However, this user tested another prototype which was updated based on the results of the previous user tests.

Findings from User Test

Main Features

Mainly, a function which offers **information about local events** and encourages participation using **supports** and **incentives** is the most popular function for all user participants. Both participants from immigrant families and a

non-immigrant family loved this function, and they said that they would be more motivated to participate in local events due to coupons and incentives. The program manager said that encouragement of local events would be helpful for teenagers to have better experiences in the United States.

In both interviews with immigrant teenagers and an American student, participants liked **anonymity** in the app because it can protect immigrant users from discrimination and issues which come from unauthorized immigration status.

There were two different opinions about discrimination and cyber bullying from showing **cultural backgrounds**. One opinion was that showing users' cultural background would occasionally cause discrimination in the app, so some users with racism would be aggressive toward users from foreign culture backgrounds. However, the other opinion was that those users who are racists would not start to use this app. This is because interaction between teenagers from different cultures is an essential goal of *ExPeeR*. Participants with the second opinion answered that showing cultural background would help users feel welcomed by existing users.

The program manager was skeptical of **incentives** which motivate teenagers to interact with other users from different backgrounds. Even though motivation for activity participation is enough and would work well, incentives for teenagers to make new friends and have cultural interactions are not enough. However, the American student said that cultural exchange would happen if there are local events where teenagers can interact with peers from different backgrounds.

Usability

Teenage users were quite satisfied with the interface of the app. Each function is separated from one another and offers functions independently unlike the new version of *Snapchat* which is getting more difficult and confusing to use than the old version of *Snapchat*. In *Snapchat*, many functions are connected and related now, and teenage users don't like this change.

The main colors grey, yellow, and white are complementary color composition, so this reduces confusion. To sum up, teenage users prefer clear distinction of functions in order not to be confused by various functions in the app.

In two user tests with non-English speakers and an American student, participants said that there are too many icons on the main tap bar, and it is a little confusing. Even though they were satisfied with definite separation of functions, they wanted to see fewer icons on the main navigation bar. The American student wanted five icons including Check Post, Check Event Information, Create Post, Friends, and Message.

The American participant said that there are too many pages which convey similar information, so it is necessary to reduce the number of pages by combining some pages. For example, recommended friends should be shown in My Friend List, and group invitation should be shown in My Group List.

GUI Design

In the case of graphic design, all participants loved the overall graphic design. They liked the logo and its meaning. Latino teenagers said that the contrast of colors, yellow and gray, help them to enjoy the app without confusion. All participants said that all of the icons in the application are easy to understand. However, non-English speakers did not like the composition of darker backgrounds and lighter fonts, so this has been changed in the final version.

Conclusion

This thesis, *Harmonious Integration of Foreign-born Immigrant Children into U.S. Society* is designed to provide enriching experiences which help foreign-born teenagers' better adaption in the United States.

Latino-born immigrant children who occupy the largest number of foreign-born immigrant children in the United States have more risks of mental disorders and lower academic attainment than other children. Not only before and during migration but also after migration, they are exposed to various factors which have negative effects on

Latino families' adaptation and their children's development, such as poverty, economic status, social status, language, and discrimination. When foreign-born immigrant children do not develop and integrate well into society, the negative effects can spread to their second and third-generations(Potochnick & Perreira, 2017). For this reason, it is necessary to offer enriched experiences for their enhanced adaptation.

In this thesis, a mobile application, *ExPeeR* has been designed with an immigrant-centric perspective. *ExPeeR* will not only help foreign-born immigrant teenagers but also native-born teenagers to share their concerns with peers, get help from professionals from various organizations, participate in local events and activities, and interact with peers from various backgrounds. It is expected that *ExPeeR* will:

1. Offer diverse information and support for foreign-born immigrant teenagers to participate in local activities.
2. Encourage the exchange of cultural experiences by enhancing interaction between peers from different backgrounds.
3. Create more opportunities for friendships between teenagers from different cultures.
4. Create a safe place where both immigrant and non-immigrant teenagers share their concerns and have conversations about common interests
5. Enhance foreign-born immigrant families' safety in the United States

-   Target Users' Benefits
    It is expected that these benefits will be created when *ExPeeR* is offered to users.
    Foreign-born immigrant teenagers who are the main target of this project would have:
1. More enriching experiences in the United States
2. New friends from more diverse backgrounds beyond a5mile radius from their neighborhood
3. Chances to exchange their cultural experiences and learn about American culture more effectively
4. A safe place where they can share their concerns and get advice
5. Safer environment which is created by connection with teachers, organizations, and *ExPeeR*
    Native-born teenagers will also get chances to learn foreign languages from immigrant teenagers and develop empathy toward immigrant population.
1. More enriched experiences in the United States
2. New friends from more various backgrounds
3. Chances to exchange their cultural experience and learn about immigrant cultures
4. A virtual place where they can share their concerns and get advice
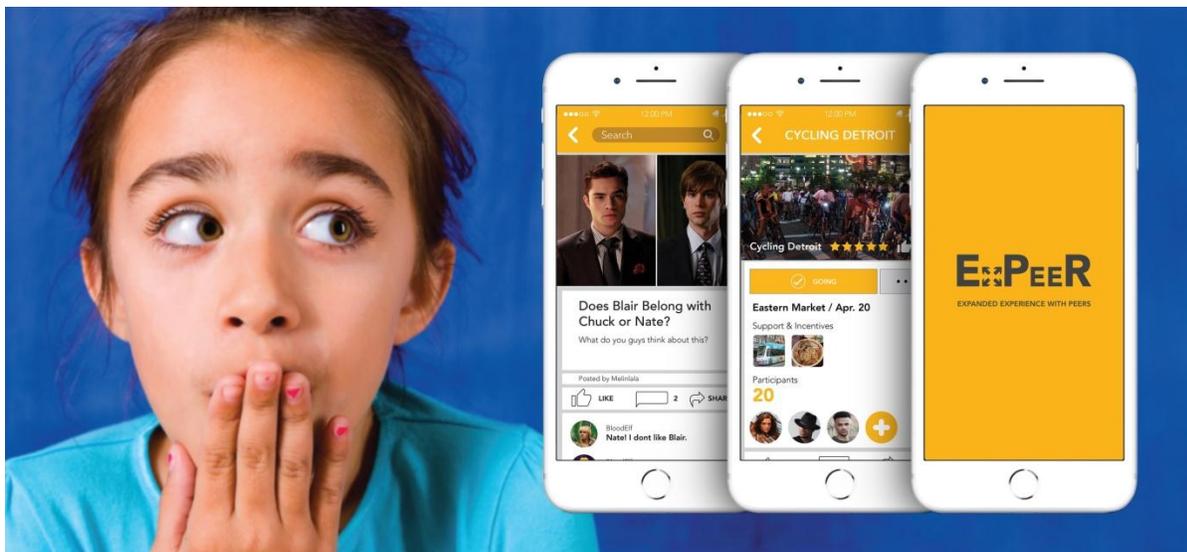
Partners' Benefits

All of *ExPeeR*'s partners will get chances to have society-beneficial brand images.

Entertainment companies such as Netflix: Entertainment companies will get to know teenagers' opinions toward their content, such as what they like or dislike, and what movies and TV dramas are popular among them. Additionally, they will have opportunities to make teenagers' loyalty toward their brand by being close to each other and creating society-beneficial brand images.

Museums and non-profit educational organizations: By offering information about local events, activities, and exhibitions to users in *ExPeeR*, they would gain better public awareness which is the most important motivation for them. This would also be a chance for them to find a new sponsor.

Public transportation businesses: Private businesses would earn a better reputation regarding social responsibility, and public businesses would help teenagers have better familiarity with their services. Considering characteristics of public transportation, the number of users would not drastically affect their expenses. In a long-term view, public transportation would be more familiar to the public, so it could be the first step to make public transportation safe and comfortable.

Schools: Schools will have many chances to have well-educated students with low costs. This will also reduce the costs that they have to spend for underachieving students. Diverse experiences with *ExPeeR* will educate teenagers and help their adaptation in the local areas

AFTER THE SHOCK

PARTICIPATORY DESIGN

Mengya Wang
MFA Integrated Design

Abstract

Over the last decade, China has been one of the top five countries in the world most frequently hit by natural disasters. The features of natural disasters in China are diverse, frequent, affect a wide scope and cause huge losses. Earthquakes are the third most frequent natural disaster in China and cause the most deaths. In addition, because there is no reliable way to predict earthquakes in the short term and no clear endpoint of aftershocks, distress of affected people is increased. Sichuan Province is selected as the context of this thesis project because of its geographical area, the location of major tectonic plates, and population density.

Additionally, based on a study of the psychological effects of earthquakes on people, there are different groups of distressed people with different level of difficulties, and some vulnerable individuals including women, elderly people and children.

In order to decrease the negative effects of earthquakes, people in Sichuan Province have already received information about personal preparedness before an earthquake and effective emergency response during an earthquake. However, in terms of the current condition of mental healthcare after earthquakes in China, there are still many difficulties to overcome.

This thesis project will focus on two problems of mental healthcare in China: the stigma of affected people seeking mental health assistance and the lack of professionals.

Introduction

The effects of natural disasters can be long lasting and the resulting trauma can reverberate even with those not directly influenced by the disaster. Survivors often feel abandoned or forgotten after the initial waves of support fade and they return to normality, but with post-disaster stress reactions.

China is one of the top five countries in the world that are most frequently hit by natural disasters. Specifically, earthquakes are the third most frequent natural disaster, which also cause the most deaths. This thesis provides the background information of the effects of earthquakes and existing mental healthcare after earthquakes in China, to support a design solution to help Chinese citizens have self-involvement in mental health care and support each other to decrease long-term effects and keep stability of the society.

Background

As mentioned previously, China is one of the top five countries in the world that is most frequently hit by natural disasters. Primary facts of natural disasters in China are listed below.

Diverse types: China suffers from many types of natural disasters, including meteorological disasters, geological disasters, marine disasters, biological disasters, and forest and grassland fires, according to a report from Beijing Review.

High frequency: The Beijing Review report also shows that China lies in the region where Eurasian and Indian tectonic plates meet; it is affected by frequent earthquakes due to the tectonic movement. Most of the earthquakes in China are continental, occupying one-third of globally destructive land earthquakes. Additionally, the monsoon climate has a strong effect on China and causes frequent storms. Tropical cyclones occur seven times a year on average, usually impacting the east coast. In addition, local or regional droughts happen almost every year. The Center for Research on the Epidemiology of Disasters states that in 2013 the country was affected by a number of disaster types, such as 17 floods and landslides, 15 storms, 7 earthquakes and one mass movement of geological origin, one drought, and one period of extreme temperature.

Wide scope: Research reveals that more than 70 percent of Chinese cities and more than 50 percent of the Chinese population are located in areas vulnerable to natural disasters. Two-thirds of the land is potentially threatened by floods. Earthquakes have affected all the country's provinces. Landslides are frequent due to complicated geological conditions. Tropical cyclones often hit the eastern and southern coasts. However, droughts often occur in the northeast, northwest and north, with serious ones in southwest and south China as well.

Huge losses: The striking data of Beijing Review illustrates the losses caused by natural disasters from 1990 to 2008. Onan average year, 300 million people were affected by natural disasters, more than three million buildings were destroyed, and more than nine million people were forced to move to other cities. The direct financial losses were more than 200 billion yuan (about 33 billion dollars).

The future of natural disasters: As we know, global climate change is the serious phenomena nowadays, which leads to the increasing risks of extreme weather. The imbalanced rainfall and unusual temperature changes are reasons the increase in floods and droughts. There is more possibility of strong and extra-strong storms in the future. Also, owing to the continuous movements of the earth's crust, the danger of earthquakes will continue to exist. Therefore, the task of protecting people from natural disasters remains important.

Due to the five factors mentioned above, China is seriously influenced by natural disasters. However, earthquakes have proven to be the most severe and important when we take mental health into consideration.

Based on a study by The European Journal of Psychiatry, major causes of mental health issues are the death of loved ones, injuries to self and family members, and the loss of material goods and livelihoods. People who lose family members suffer from significant severe psychological distress compared to those who do not. Earthquakes, which cause many casualties in China, contribute to poor mental health.

The United States Geological Survey stated that no scientist in the world is able to do a short-term prediction of when major earthquakes with occur. The scientific data shows what we can achieve now is a calculation of when potential future earthquakes will occur. For example, estimating over the next 50 years, there is a 70% probability that a major earthquake will occur in San Francisco, CA. Therefore, currently, in some countries frequently hit by earthquakes, there is a switch to focus on the efforts on improving the safety of housing structure and risk reduction methods, rather than try to accomplish earthquake prediction.

Moreover, due to no warning prior to an earthquake, no time for people to make psychological adjustments, and no clear endpoint of earthquake aftershocks, earthquakes are different from other natural disasters, which dramatically increases affected people's psychological distress.

Earthquakes in China

According to the information shown in Disaster and Risk Profile of China from the International Disaster Database, between 1990 and 2014earthquakes are the third most frequent natural disaster in China which contributed to more than 67% of deaths and nearly 25% more economic damage than all other natural disasters. Two major tectonic plates, the Eurasian and Indian, meet in China creating the earthquake belt from the west to southwest.

The map below illustrates Earthquake Epicenter Distribution of China.

中国地震震中分布 (2300B.C.~2000A.D., M$_s$≥4)
Earthquake Epicenter Distribution of China
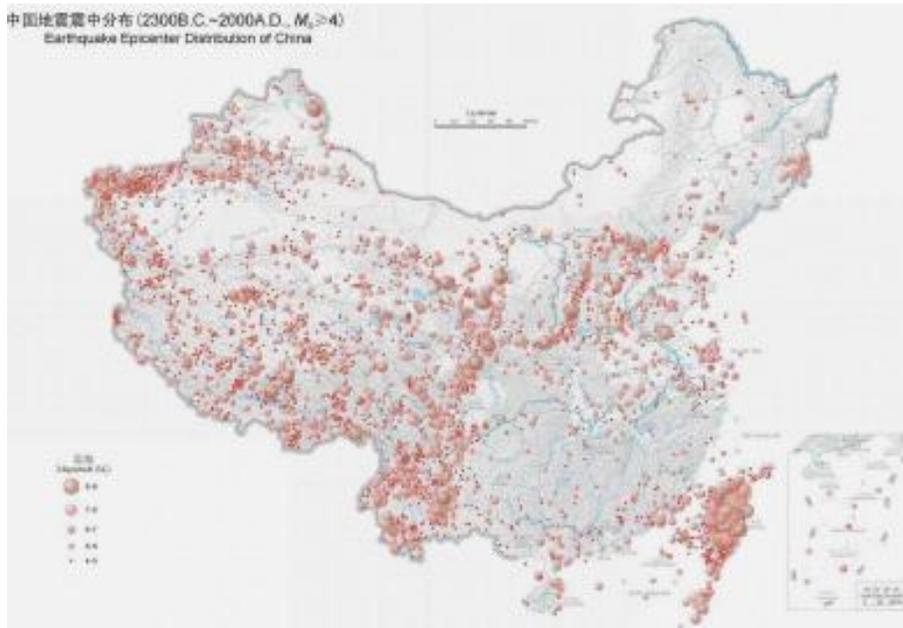
Sichuan Province

The primary research for this thesis was conducted in the area most effected by and exposed to earthquakes in China, the Sichuan Province. Sichuan Province is 189,632 sq. miles, similar in size to California, which his 155,779 sq. miles. However, the population of Sichuan province is twice the population of California, with a density of 424.1 per sq. miles.

Psychological Effects of Earthquakes

Mental health problems have proven to be some of the most common side effects of earthquakes. Many of affected people develop psychological disorders such as major depression, generalized anxiety, and post-traumatic stress disorder after earthquakes. Many more experience non-specific distress, somatic complaints, and other medical health conditions. According to Amanda McClelland, Red Cross Emergency Health Senior Officer, "One feature of mental health issues after the natural disaster is it becomes more apparent as time passes by and can be ignored by people in emergencies". Research reveals that general distress levels

following an earthquake appear to return to normal after about 12 months, but post-traumatic stress reactions do not fade until 18 months after the earthquake.

Distressed People

Based on the report "Integrating Mental Health into Primary Health Care Settings After an Emergency: Lessons from Haiti" by the War Trauma Foundation, the guidelines for providing mental health assistance after disasters differentiate distressed people in three groups:

•Those with mild psychological distress that resolves in a few days or weeks, and needs no specific intervention [estimated at 20% - 40% of the affected population].

•Those with moderate or severe psychological distress, who would benefit from basic non-specialist, psychosocial interventions, such as psychological first aid and interventions that strengthen community and family [estimated at 30% - 50% of the affected population].

•Those with a mental disorder, the incidence of which appears to temporarily double following a disaster. Within this last group, the prevalence of mild to moderate disorders, such as mild to moderate depression or anxiety, would be expected to increase from a baseline of 10% - 20%, while the prevalence of severe disorders could rise from 2% - 3% to 3% - 4%.

About Gender

Women are more vulnerable and more likely to suffer from depression, anxiety, and post-traumatic stress after earthquakes. Some reasons include: women are often caretakers and have the first reaction to take care of children or elderly people, their emergency reaction speed and physical conditions are different from men, and women may have less knowledge of emergency preparedness and disaster occurrences, especially in underdeveloped places.

About Age

A population-based survey of adult survivors of the 2008 Sichuan earthquake clarifies that compared with the younger adult survivors, elderly people were more likely than younger people to have symptoms of post-traumatic stress disorder [22.5% vs. 8.0%], and general psychiatric morbidity [42.0% vs. 25.4%] The survey data shows that mental health effects on children are not stable, however experts still suggest if children present any symptom of mental issues, they also need to be taken for psychological support or counseling to cope with the event.

About Location

Directly affected people that experience the disaster, followed by those in close contact with victims, undergo a more lasting impact than those who only have indirect experiences, like watching news of the disaster on TV or listening via a radio broadcast.

About First Responders

It is equally possible for rescue workers and medical teams to develop mental, psychological and psychosomatic disorders as victims. Exposed to corpses and wounded, mass destruction, and life-threatening situations, often they become unseen victims.

Phases of Communities Rebuilding their Lives After Earthquakes

Search and Rescue Phase | Early Recovery Phase | Community Development Phase

Show mental health problems

Emergency Relief Phase Meeting basic needs

Medium to Long-Term Recovery Phase
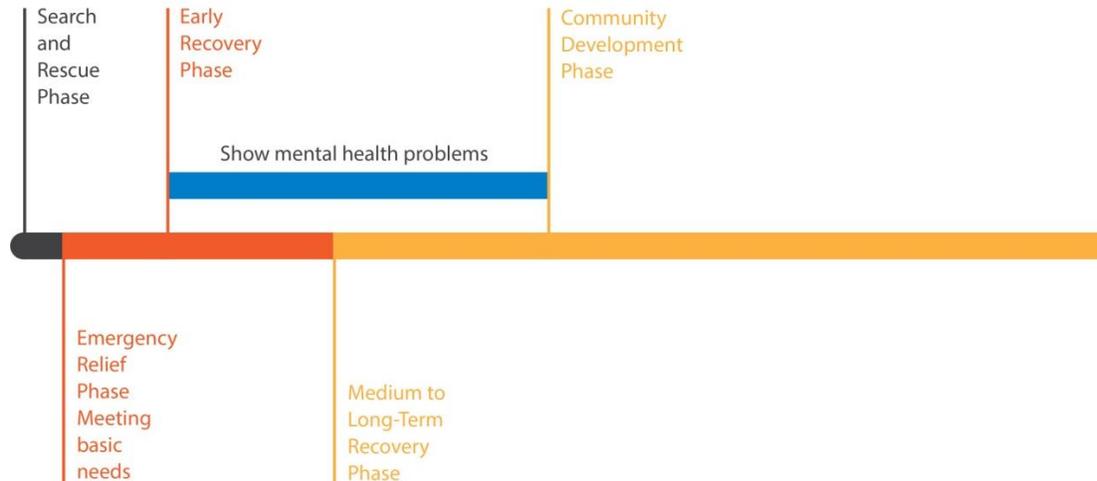
Research illustrates that the search and rescue phase has less of a relation to mental health due to being primarily about saving lives by professional teams. All other four phases related to mental health care and mental health problems of affected people are generally seen during recovery phases. Mental health care after a disaster takes usually a longer period of time, but right after a disaster certain kinds of help can make things easier for affected people.

Early interventions after earthquakes decrease the possibility of more serious mental health problems afterwards, even if not conducted by mental health professionals. According to the American Journal of Psychiatry North China survey:

"the village with a higher level of initial exposure to the earthquake and a higher level of post-earthquake support had a lower frequency of PTSD than the village with a lower level of initial exposure and less post-earthquake support……the comparison involved two communities separated by only 10 kilometers, with comparable socioeconomic and demographic characteristics, and we could reasonably assume comparability between two groups in their baseline physical and mental state. The critical difference between the two groups was the extent of immediate relief and subsequent reconstruction support that they received, although no mental health professionals visited either village before our investigation."

In conclusion, addressing more serious earthquakes with immediate mental care will not only decrease the burden of mental health professionals in the early stage, but also reduce the number people affected by more serious, long term mental health problems.

The Current Condition of Mental Healthcare after Earthquakes in China

Achievements
China's National Committee for Disaster Reduction (NCDR) was established in 2005. It consists of 34 ministries and departments, as well as military agencies and social groups. The integrated system ensures the effective management of resources and rescue personnel from different facilities throughout China. Additionally, there is the integration of military medical resources into the disaster management system. In 2010, China began establishing 22 medical emergency teams to respond to different disasters. They usually provide healthcare services by building temporary field hospitals or offering expert rescue teams onsite.

Challenges

The 2008 Sichuan earthquake led to the collapse of 67.5% healthcare buildings in the most affected areas. Many of county hospitals were destroyed or lost their critical systems and a number of township hospitals and village clinics required temporary facilities to support their response role. Therefore, the impacted healthcare infrastructure become the first challenge for the disaster response.

Hospital evaluation surveys reveal that China is still at the early stages of building emergency preparedness. Health facilities in many areas have a low level of preparedness including low disaster vulnerability analysis, low disaster stockpiles, lack of coordination with other associations and emergency training and education programs, lack of rescue equipment, and few specialized supplies. Western and rural areas are even less prepared.

Triage criteria based on the severity of the disaster and the availability of the health resources. It is found to be wanting in China and is rather vital during a natural disaster. A simple triage and rapid treatment method was built after the Wenchuan earthquake to facilitate triage and injury classification and showed good promise.

However, the standard procedures and guidelines are still missing improvement as most hospitals do not have applied disaster triage procedures but only general procedures. During a natural disaster, there are not enough facilities and professionals for the dramatic increase in patients, such as during the 2008 earthquake. The local healthcare workers were overwhelmed by the large number and severity of casualties. Specifically, the psychological intervention guidelines request two phases for psychological interventions. In the acute phase, general psychological counseling is used to reduce the incidence of post-traumatic stress disorder. In the chronic phase, psychological interventions are focused on issues associated with depression.

The Chinese Government's Attitude Towards Mental Healthcare

Based on the primary research, the Chinese government understands the importance of general mental health care for people's overall health as well as decreasing long-term effects and maintaining social safety. Especially for events like earthquakes, they provide many services for affected people to decrease risks.

The Public Attitude Towards Mental Healthcare

In traditional Chinese culture people are usually reluctant to express psychological distress. Younger generations (people from 18 to about 40 years old) have more awareness of mental health than older generations. Students and teachers know more about mental health care and are more likely to seek help however, people with low educational levels think the they don't need mental health services.

Primary research

In order to have a better understanding of the current condition of mental health care after earthquakes in China, in addition to the secondary research above, primary research was conducted in the selected area of the Sichuan province.

Interview
2 professionals
4 organization members
4 volunteers

11 affected people (5 Male, 6 Female) two 20-30 years old, eight 40-50 years old, and one above 70 years old

Survey
60 affected people in total
52 responses(34 Male – 18Female, 20-40 years old)

Main Issues Insights

Lack of professionalism

Based on this study the number of trained mental health professionals in China is inadequate to meet the mental health needs of the population. China has smaller mental health workforce per 100,000 residents compared with other developed countries. The research shows that among psychiatrists, 29% only had a technical school degree and 14% had no academic degree at all; among the nurses, 46% had no academic qualifications.

As this situation cannot be changed suddenly, other groups of helpers [non-specialists, such as volunteers with other professional backgrounds and volunteers from the society] help during the disaster emergency. As consequence, many people think that most professionals and volunteers lacking professional skills are becoming a burden on affected areas and have a bad influence on affected people.

The stigma of seeking mental health assistance after earthquakes

Even if 88% earthquake victims in Sichuan Province said mental healthcare after earthquakes is important, affected people don't really seek help for two main reasons:

- As the mental health assistance after earthquakes are usually provided in transitional shelters or in open spaces, they feel uncomfortable with the lack of privacy. Everyone will know they are receiving mental health assistance.

- People are usually reluctant to express psychological distress. Longitudinal Study of Earthquake-Related PTSD in a Randomly Selected Community Sample in North China by The American Journal of Psychiatry reports that "If they experience problems in functioning that might be associated with psychological distress, they tend to attribute these problems to physical or external origins."

Design Solution

Target audience

The target audience is the women in Sichuan Province. According to the China Sex by Age Data of the Census in 2010, nearly half of the population in China is female. Around 40 million people of a population of 81 million in Sichuan Province are females 18 to 65 years old. Women, who are natural caregivers, are usually more sensitive and vulnerable when earthquakes happen. Women's first reaction to take care of children or elderly people, and are willing to help them after earthquakes.

Web Channels

Sichuan Province Emergency Office will introduce the new initiative to the Sichuan Province Women Federation and will coordinate the support from the mental healthcare professionals.

Coordinator

Website → Sichuan Province Emergency Office

Content Refinement ← Website

Network

Sichuan Province Women Federation ← Support ← **Knowledge** Mental Healthcare Professionals
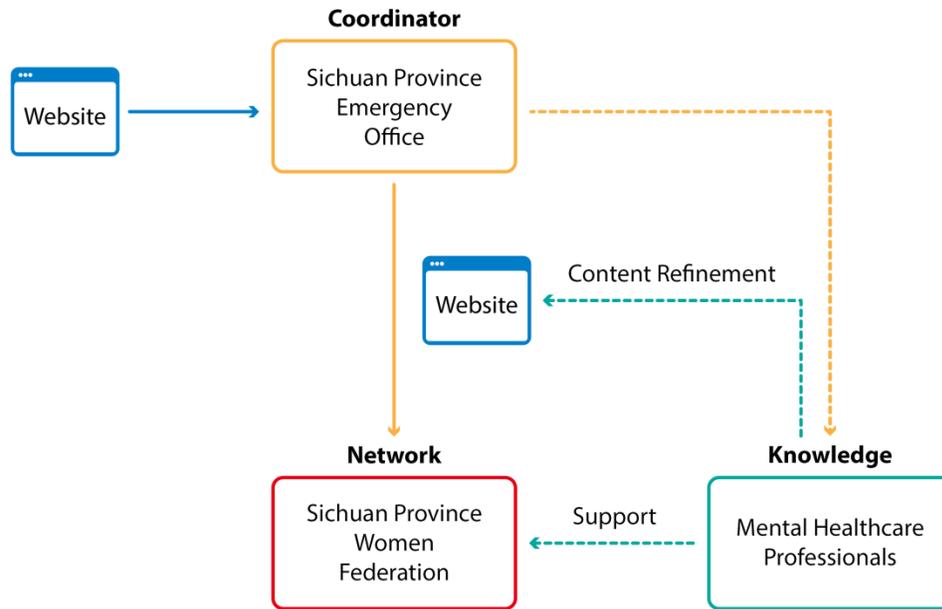
Solution Main Components

Before the earthquake

Based on **China Women Federation**

Build awareness that feeling stressed, sad, upset are common reactions to earthquakes
Clarify signs when they need to seek mental health assistance

Encourage women to learn skills of mental health assistance, and pass test, get badges **to be helpers**

EARTHQUAKE

After the earthquake

Obtain more efficient and private help

In person, through phone call or text message

Emergency Relief Phase
Early Recovery Phase

China Women Federation

National Women Federation Office
Provinces Women Federation Offices
Cities Women Federation Offices
Counties / Districts Women Federation Offices
Towns / Streets Women Federation Offices
Villages

The China Women Federation is a non-governmental organization with the mission of safeguarding the rights of women. The main tasks of this group are supporting education for women and children, preventing domestic violence, providing information related to women's health, and offering women friendly activities for their daily lives. Women Federation leaders in villages and communities have the most communication with women in villages and communities via text messages, phone calls, and in person visits, and they usually have activities with different purposes five to ten times per month.

Local Women Federation leaders will have access to the website to download the "Participatory Learning" document to prepare for the participatory group learning activity. Theoretically speaking, 100% of local women will receive the invitation through text message, phone call, or in person visit and join in the participatory learning. The activity is designed for teams of eight to twelve women of different ages, occupations, and educational backgrounds.

PARTICIPATORY LEARNING MAUNAL

Activity Instructions:

- 20 minutes to explain activity aim and introduction

- 90 minutes session for building awareness, sharing feelings about earthquakes and co-creating a poster about the group selected feeling. The finished poster with the website address and location or the learning book will be distributed in the village or community.

- Approximately 60-120 minutes to clarify signs of depression and anxiety

- Approximately 60-120 minutes to discuss early warning signs of more serious distress after

earthquakes and practical tips

- Encouraging women to become volunteers

01 Participatory Learning

Introduction

20 minutes, earthquake and mental health

Note

EFFECTS OF EARTHQUAKES

The leader goes through the information below quickly. Pay attention to your tone, describe the fact, but don't scare the audience.

No reliable short-term prediction of earthquakes in the world, this fact limits the ability of disaster victims to make the psychological adjustments that can facilitate coping. Earthquakes are possible to kill people, trigger injuries, and cause the loss of material goods and livelihoods, it both do harm to affected people physically and mentally.
No endpoint of aftershocks increases the distress of affected people.

BRIEF INTRODUCTION OF MENTAL HEALTH

Mental health is a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively. In this positive sense, mental health is the foundation for individual well-being.

Mental health includes our emotional, psychological, and social well-being. It affects how we think, feel, and act. It also helps determine how we handle stress, relate to others, and make choices. Mental health is important at every stage of life, from childhood and adolescence through adulthood.

Many factors contribute to mental health problems, including:
• Life experiences, such as trauma or a history of abuse
• Biological factors, such as genes or chemical imbalances in your brain
• Family history of mental health problems

Trauma results from an event like an earthquake that is experienced by an individual as physically or emotionally harmful or threatening and that has lasting adverse effects on the individual's functioning and physical, social, emotional, or spiritual well-being.

(00)

## 01 Participatory Learning

Introduction

Note
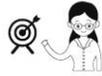
THE GOAL OF THE SESSION

■ Help participants to build awareness that feeling stressed, sad and upset are common reactions to earthquakes. You are not strange if you have those feelings.

■ Clarify early warning signs of more serious problems both for children and adults.

■ Bring some tips to relieve stress, encourage people to find their own ways to relieve stress and help children or teenagers.

■ Encourage people continuing showing signs of stress to reach out for extra help.

■ Encourage people to accept help from others after earthquakes, and invite women with ability (with higher educational level, related backgrounds) to learn more knowledge and skills to be volunteers to help others.

■ This session is not to provide professional mental health consultation.

(00)

03 Participatory Learning

Early warning signs

60-120 minutes
Recognize and pay attention to early warning signs of more serious stress, find out your own ways of relieving stress

Note

1 | Hand out cards with early warning signs

Excessive worry

Crying frequently

Overwhelmed by sadness

An increase in irritability, anger, and frequent arguing

Wanting to be alone most of the time

Increased alcohol and/or substance use
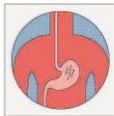
Digestive problems

Difficulty in sleeping

Increased physical (aches, pains) complaints such as headaches, stomachaches

Having trouble thinking clearly and concentrating, and difficulty making decisions

(00)

PARTICIPATORY LEARNING MAUNAL
Content:
Overall dos and don'ts for preparation
How to approach by phone call
How to approach in person
Providing help
Practical tips
Caring for yourself
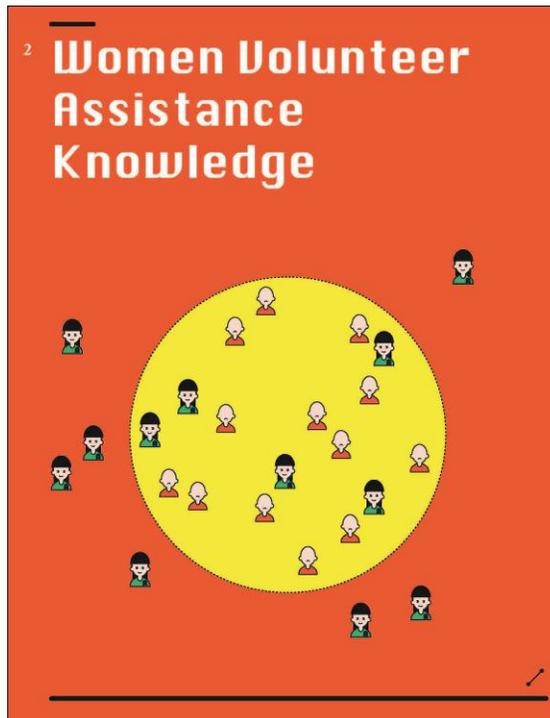
06

Caring for yourself

Even if you are not directly involved, you may be affected by what you see or hear while helping. As a helper, it is important to pay extra attention to your own wellbeing. Take care of yourself, so you can best take care of others.

Before you do the confirmation of the help

Learn about crisis situations, and your role as a woman volunteer.
Consider your own health, personal or family issues that may cause severe stress as you take on a helping role for others.
Make an honest decision about whether you are ready to help in this particular crisis situation and at this particular time.

Main sources of stress

Overwhelming responsibilities, may feel responsible for people's safety and care
May hear stories of other people's pain and suffering
Lack of a clear job description for every step, every detail
Poor communication or management
Working in areas which are not secure (if on-site), may witness or even directly experience terrible things, such as destruction, injury, death or violence
Long working hours

Note

Women Volunteer Mental Health Assistance Knowledge   01

03

How to approach by phone call

If the person answers the phone call

Approach the person respectfully.
Introduce yourself by name and organization (Women Federation).
Try to use the voice calm and soft.
If possible, ask the person to find a safe and quiet place to talk.

Ask if you can provide help. Although some needs may be obvious, always ask what the person needs and what his or her concerns are.
Find out what is most important to the person at this moment, and try to help him or her work out what his or her priorities are.

If the person answers the phone call, but does not want to talk

Do not force help on people who do not want it, but tell the person you can be reached later if they need help. No matter if people accept or reject the help the first time, it is ok for women volunteers to have recurring text messages or phone calls in every two weeks or a month to check if they are fine or need any help.

If no answers for three times

Tell your Women Federation Leader.

Note

Women Volunteer Mental Health Assistance Knowledge   01

04

Provide the help

Encouragement

Get enough rest.
Eat as regularly as possible and drink water.
Talk and spend time with people you trust.
Do activities that help you feel relaxed.
Do physical exercise.
Find safe ways to help others in the crisis and get involved in community activities.

Discouragement

Don't take drugs, smoke or drink alcohol.
Don't sleep all day.
Don't work all the time without any rest or relaxation.

It has been shown that people who feel they have good social support after a crisis cope better than those who feel they are not well supported.

Help the person to contact friends and relatives so he or she can get support.

If a person lets you know that prayer, religious practice or support from religious leaders might be helpful for him or her, try to connect him or her with their spiritual community.

Encourage affected people to get together to help each other. Remind women of the knowledge and skills learned in participatory learning activities. Especially, link individuals without family to community members.

Note

| Victim name | Date | Volunteer name |

Women Volunteer Mental Health Assistance Knowledge   01

02

Preparations

① **Get help request from Women Federation.**
3-5 days after the earthquake
Through text message, phone call, or in person visit

② **Do a confirmation I am able to provide the help.**
Through text message, phone call, or in person visit

③ **Be assigned at most two affected people to help.**
You will get their phone numbers and addresses.
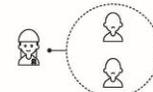
④ **learn about what happened.**
Through Sichuan Province Earthquake Department website or from Women Federation Leaders
Kind reminder:
If you are not certain about the safety of the crisis site, then do not go. Communicate with people in distress through phone call.

Note

Women Volunteer Mental Health Assistance Knowledge   01

Conclusion

Trauma from events like earthquakes are experienced by an individual as physically and/or emotionally harmful or threatening. Natural disasters can have lasting adverse effects on the individual's functioning and physical, social, emotional, or spiritual well-being. Relying on the existing China Women Federation members which are social pillars for Chinese women in their society, these two booklets are designed to help provide effective and widespread assistance to the rural Chinese society after earthquakes. The participatory learning session helps participants to build awareness about common reactions to earthquakes such as stress, sadness, and feeling upset and clarify early warning signs of more serious problems in children and adults. When terrible things happen in the communities, people want to reach out to help who are affected. The Volunteer Assistance Knowledge document provides supportive and practical help to volunteers helping fellow human beings suffering serious crisis events. It gives a framework for supporting people in ways that respect their dignity and abilities.

KNOWLEDGE REDISTRIBUTION

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Abstract

Approximately191millionpeoplemigrate.Economicinequalityisonemainreasonsthat prevents migrants from developing in their original countries because of the lack opportunities to become more competitive and have a better life.

This thesis is focused on combining knowledge and wisdom from a developed country aging population, in this case, the United States,toprovideskillstailoredtoadevelopingcountriesyoungergeneration's needs, in this case, Guatemala.

The aim is to create a platform that allows the connection between both cohorts, where the knowledge exchange will provide a new form of meaningful engagement for aging population and a great support for skill development of the young generation.

Introduction

The focus of this study is the potential connections between two groups: the individuals that were born in a setting of poverty and refuse to accept their fate, and the more fortunate aging population that desires to remain active in developed countries.

The youngest in the world

Nowadays 90% of the population between the ages of 10 and 25 years old live in developing countries. 3.3% of the world population migrates due to economic, political and educational opportunities. This increasing migration is an issue of economic inequality, fueled by income inequality, a moral issue of our time. This economic inequality can be found in various measures of economic wellbeing amongst individuals in a group, groups in a population, and amongst countries.

Even with the current migration level, a great majority of these young people stay in their original countries. At home, they lack opportunities for a better future due mostly to the lack of access to education. The population in developing countries has6.5 years of formal education versus an average of 12 years in the developed countries which creates a massive knowledge gap.

The oldest in the world

Nowadays8.5% of people worldwide, about 617 million, are aged 65 and over. This percentageisprojectedtoreach17%oftheworld'spopulationby2050and will represent 1.6 billion of people. This increase will occur mostly in developed countries where fertility rates have fallen creating a dramatic demographic shift. However older people have different expectations these days, and that will continue to change. They will play a bigger role in society making the best use of their skills, knowledge, and experience.

Background

Aging population
Globally, the aging population is growing faster than any other segment of the population but this aging process is not happening homogeneously in the world. It began decades ago in developed countries and it has started more recently in countries that are developing. This aging population increase is estimated to increase the government spending five times by 2050 in the developed nations, raising the debt by 190%.This same population segment will experience rising healthcare costs, increasing living expenses, and inadequate financial planning. These factors will force the elderly to work longer.

International migration and global economic inequality
According to the World Bank, increasing immigration by a margin equal to 3% of the workforce in developed countries would generate global economic gains of $356 billion. The reasons for the global annual flow of around 15 million migrants are divided in four main categories: economic, education, family reunion, and refugee/asylum. By 2050 there will be another main reason for migration: the scarcity of basic resources such as water/food due to environmental disasters that have increased threefold in the past 30 years with devastating effects mostly in the developing world.

Currently there is a great debate about how economic inequality affects migration. If thereareapproximately244millionmigrantsaroundtheglobe,thenumberofindividuals that stay are lacking the opportunity to be a productive and competitive workerbecausetheyarenotsufficientlysupported.Therefore,globalinequalityisnotonlyabouteconomic factors,itisalsointhegivenopportunities.

Relationship between poverty and insufficient access to quality education
Itiswellknownthatchildrenlivinginlowincomehouseholdsaresignificantlylesslikely to be successful than middle and upper-class counterparts. According to UNESCO,264millionchildrencan'tgotoschool. Some of the main reasons are the following:
- Living in war zones
- Gender enrollment gap [females not allowed to receive education]
- Disabilities
- Child marriage
- Natural disasters
- Lack of proper schools or teachers
- Poverty
- Child labor

In many of the poorest countries the government doesn't fulfill their dutyofprovidingbasiceducation.Often,thegovernmentlackseitherthefinancialresourcesorthepolitical will to meet their citizens' educational needs. In extreme poverty, students drop-outofschoolbecausetheyareunabletopayschoolfees,transportationcosts, or children might be contributing to household labor.

Inequality of education in developing countries
According to a report by the United Nations Organization for Education Science and Culture(UNESCO),20%ofyoungpeopleindevelopingcountriesfailtocompleteprimary schoolandlackskillsforwork.Theyalsoaffirmthat250millionchildrenofprimary school age can't read or

write whether they are in school or not. 71 million teenagers that are of secondary in school age aren't going to school missing the essential skills they need for future employment. One in three children that live in developing countries, which comprises of 193 million, reach primary school having had brain development and education prospects impaired due to malnutrition. Due to the lack of opportunities that people in developing countries face, they choose to move away in order to look for new and better opportunities.

Migration in developed countries

International migrants account for a small share of the world population comprising about 3.3%.In 2015, a total of 120 million people migrated from developing countries to developed ones.Between1990and2015,thesizeofthe international migrant population grew in 169 countries or areas, while it declined in 63 others. United States of America experienced the largest increase migrants with a total of 23 million.75% of the migrants were between the ages of 20 and 64 and 15%were under age of 20. The remaining 10% was over 65 years old. Between 2010 and 2015, Australia, Canada, Germany, Lebanon, Turkey and the United States of America were the countries with the highest levels of immigration, whereas Bangladesh, India and Mexico ranked among the countries with the highest levels of net emigration in Europe, North America, and Oceania.

When supported by appropriate policies, migration can contribute to inclusive and sustainable economic growth and development in both home and host communities. In 2014, migrants from developing countries sent home an estimated US $436 billion in remittances, which is used to improve the quality of life of families and communities through investments in education, health, sanitation, housing, and infrastructure. Despite the many benefits migration can bring, it is now considered a crisis and these migrants are extremely vulnerable, being the ones that lose their jobs first, work more hours for a less pay in worse conditions than the local citizens, and endure abuse and discrimination.

Guatemala as case study

The name of Guatemala means "land of forests" and comes from one of the Mayan dialects spoken by the indigenous people at the time of the Spanish conquest in 1523. Guatemala is famously known for being the core of the Mayan culture until it was conquered from Spain in the 16th century. In 1821, Guatemala officially obtained the independence.

Since the 1950's Guatemala has experienced a severe period of instability due to dictatorships, civil war, and massacres. Since 1996, thanks to the support of the United Nations, Guatemala has experienced economic growth, however, it still struggles with high rates of poverty, crime, drug trade, and political instability.

According to the human development index, Guatemala ranks 31st of 33 Latin American and Caribbean countries.

Geography and natural disasters
Guatemala is the third largest country in Central America. The landscape is predominantly mountainous and heavily forested with narrow coastal plains and humid rainforests. Guatemala is located between the Caribbean Sea and the Pacific Ocean, and the fact that it is a volcanic land makes the country vulnerable to several natural disasters, now more than ever due to climate change.

Some of the more threatening natural disasters are:
-Rainy season/ landslides: Guatemala's winter is characterized for being extremely rainy on a daily basis. Heavy rains usually cause landslides and flooding that collapses roads and bridges.

-Volcanoes: Currently, Guatemala has four active volcanoes. One in particular, Pacaya, has been very active since 1965 and has erupted several timed causing an ash fall in the capital Guatemala City.
-Earthquakes: Guatemala is subject to tremors and earthquakes. September 8, 2017, an earthquake with a magnitude of 8.2 struck Mexico, which caused severe damage in Guatemala.

Because of this high exposure to natural hazards, there is a constant threat on social programs that are investing in the country. Many resources end up being used for disaster response activities.

Economy and sources of income

Even though Guatemala is a developing country, is one the strongest economies in Latin America. However, at the same time, it has one of the highest inequality rates with huge poverty rates, maternal and child mortality, and malnutrition, especially in the rural areas. According to a study performed by the World Bank,it had a poverty rate of 54% in 2014. Of all the people living in poverty, 52% are indigenous.

Guatemala is a very fertile country exporting vegetables, fruits, exotic flowers, sugar cane, palm oil and now corn thanks to the high demand for bio fuels. Even with Guatemala exports, remittances from Guatemalans that live in the United States is the largest source of foreign income (10% of GDP). Another main source of income for the country is tourism. Guatemala welcomes around 2 million tourists per year with a great interest in the Mayan archaeological sites, culture, and art.

Thanks to the rapid economic growth Guatemala has a great opportunity to reduce poverty but public investment is essential to achieve it.

Telecommunication industry
The telecom industry is fairly modern in the urban areas, but it remains inadequate in rural areas. Mobile phones have been a fast-growing market making it the most developed telecom market sector in Guatemala. Guatemala has three main telecommunication companies in constant competition, which has helped to improve services and keep the prices low for end users.

Access and limitations
Internet access is widely accessible by computers and smartphones throughout most of Guatemala. There are more than 19 million active mobile phones in Guatemala, which is more than Guatemala's population. However, the 50% of Guatemalans who live in rural areas have limited access. Nowadays fixed-line investments are concentrating on improving rural connectivity.

Rural areas lifestyle
In rural areas, traditional ways of living have persisted over time. In the rural family, men work the fields while women take care of the home, provide care for the children, and weave traditional textiles. Their diet consists of beans, corn, fresh vegetables, rice and chicken. Pork and beef are not affordable.

Education
While primary education compulsory and provided free by the government, the average schooling is only 5.6 years per student. Despite the efforts made by the Government of Guatemala and society at large to give all citizens access to quality education, there is a deep and ongoing disparity between the educational

achievement and opportunities available for urban children of European descent as compared to children of Mayan descent living in the rural areas. This disparity is amplified when comparing the education of boys and girls across all ethnic and socioeconomic factors.

The current state of education in Guatemala, while improving, still remains significantly underfunded and it is estimated that less than 15% of all classrooms nationwide meet minimum standards for classroom space, teaching materials, classroom equipment and furniture, and water/sanitation.

Education challenges in indigenous communities
Indigenous communities face several challenges in education. While education is one of the six mandated areas of the United Nations Permanent Forum on Indigenous Issues, many indigenous citizens suffer from educational underachievement caused by the lack of access to early childhood education and systematic racism and marginalization.
There is a demand in indigenous communities' education to take indigenous culture into account. The indigenous cultural heritage involves a holistic approach, where traditions and knowledge are embodied in songs, designs and stories as well as in the land and the environment.

At the same time, there is awareness that pursuing this objective can create a limitation in their knowledge. For indigenous communities, the solution is a combination of the best traditions from both cultures by increasing the participation of indigenous parents and community members, increasing the professionalism of teachers with knowledge about those cultures, and providing training skills that will improve their life in addition to academic knowledge.

US aging population as case study

Currently, the US population is 323 million people.
In 2016, people 65andover reached the 15.2% of the total population, mainly theaging baby boomers.

Projected Population Growth for Seniors
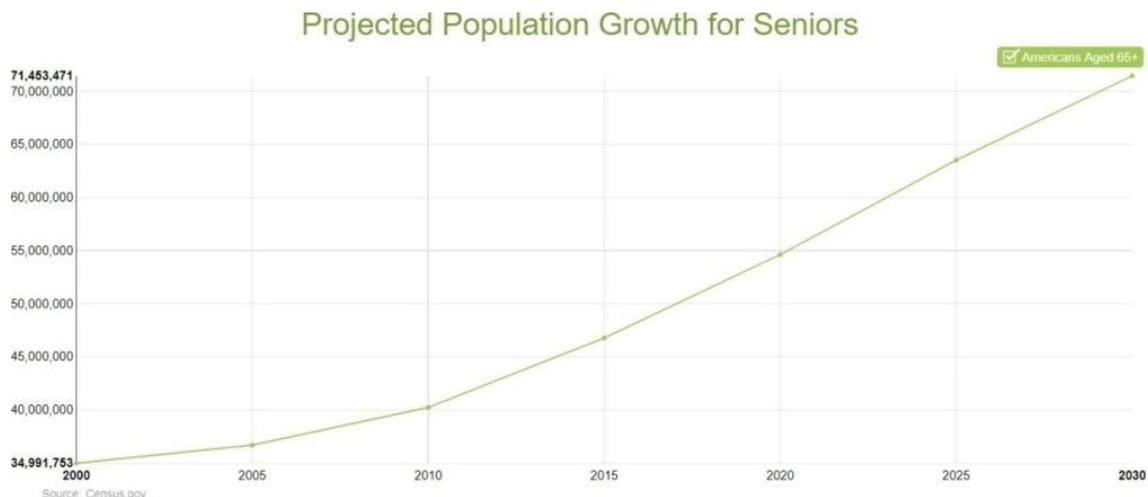
Ethnic groups and immigration
Americans are more racially and ethnically diverse than in the past, and the U.S. is projected to be more diverse in future.

The distribution in the different ethnicities are:
- White 72.4%
- African American 12.6%
- Asian 4.8%,
- Hispanic or Latino 16.3%

The United States has no official language but English has been recognized officially in 32 of 50 states. The distribution on first languages in the US is the following:
- English79%
- Spanish13%
- Indo-European3.7%
- Asian and Pacific Island3.4%
- Others1%

By 2050, the U.S. will not have a single racial or ethnic majority. The main reason of this change is and will be driven by immigration: 1 of 5 Americans will be an immigrant. While the US population is now about 323 million, by 2050 it is expected to grow by 95 million.

82% of the increase will happen due to immigrants, thus dividing the total US population in the following distribution:
- 47% Non-Hispanic white population will make them officially a minority
- 29% Latino
- 7 % African American
- 7% Asian and other races

Contrary to what is believed, Latin American immigration has leveled off in the last few years, and while is still a large percentage of the US population growth, in fact Asian population the biggest sources of.

Education

Education is the US is provided by public, private and home school. The state and national governments share power over public education, with the states exercising most of the control. The U.S. federal government exercises its control through the U.S. Department of Education. Education is not mentioned in the constitution of the United States, but the federal government uses the threat of decreased funding to enforce laws pertaining to education. In 2013, approximately 87% of school-age children attended state funded public schools, 10% attended tuition and foundation funded private schools, and roughly 3% were home schooled.

Relevance

The synthesized findings of the study are highly relevant for this thesis for the following reasons:
- US population as provider of knowledge. The American population is a perfect example because their aging population is growing fast.
- American population is very cosmopolitan, so finding the right connection between student and mentor is easier to accomplish.
- American aging population has decades of experience in different knowledge and skills, and because they are retired, they have time to participate in this system.
- Human interaction has been proven to be necessary to truly engage on the long term in the learning process. There is the possibility of engaging the student that desires to acquire knowledge and the mentor (US aging population) who desires to be active and to interact.
- US healthcare provides a good quality of life, which will allow to the provider to remain active.

Primary research

USA:

Interviews

6 individuals, average age of 63 years old.

Survey

54femalesand21males,average age of 71 years old

Guatemala:

Interviews

Human Resources CEO company " Consultores de DesarrolloHumano"

School director/teacher

Analysis

In order to achieve our goal of redistributing knowledge, the solution resides in offering a tool that will allow the connection between the aging population and the young individuals in need.

According to the primary and secondary research, aging population even with some limitations are the best candidates because it will give them a sense of fulfillment. Nowadays young generations often overlook the elderly community. Due to their decreasing physical and sometimes mental abilities, it is easily forgotten how much experience and wisdom they have and all the knowledge they offer is soften pushed aside being left alone. It is important, now more than ever, for aging populations to fulfill their inner desire to give back.

For the Guatemalan individuals, obtaining knowledge and skills that they can apply on a daily basis will encourage their motivation, as well as their communities' economy.

As a Guatemalan citizen, I was able to experience the educational deficiencies of the country. The education that Guatemalan citizens have available, while valuable, doesn't adjust to their lifestyle, and it doesn't provide what they need to prosper in their lives.

Design

This service provides a full solution to connect, organize, and share information. It integrates this service through a mobile application, which is the best technology for both cohorts of the population.

Based in the retrieved information, the solution should include 3 main sections:

SEARCH TOOL	CONNECTION TOOL	SOCIAL NETWORK
Search for projects	Schedule organizer	instant messaging
People search filter	Information sharing	

Business model

Current educational providers and the government education department would be the main clients of this app. By motivating them to invest in this app, they would be able to deliver to a much higher percentage of population. INTECAP in Guatemala is the technical institute for training and productivity, and one their main purposes in to find out the educational needs and techniques most demanded by the labor force and by the Guatemalan population. Their support would be very beneficial to be able to specialize the application according to these needs and to expand their services to areas where they have no access. Having the support of the three main internet companies in Guatemala, would increase the impact of the application by providing free or discounted internet access while using the application.

Potential partnerships

WhatsApp is installed on over 90% of iPhones in Latin America making this application the leader in the market for its ease of use regardless of age or educational level. While this application is not as famous in the United States, it will be interconnected with the platform for ease of use and to avoid using additional memory and slowing down the performance of the cell phone.

Media Channel

Even though Guatemala is a developing country, it has approximately 1.2 mobile phones per capita. Guatemala's cellphone companies have a market penetration of 119.54%, with an estimated population of 14,700,000 citizens, making a mobile app the best way to deliver this service.

UI Color & fonts

Color psychology varies according to age, geographic and cultural differences (between other variables). While soft and mid tones color palettes are meant to calm and relax, high contrast colors create an impulse to perform an action or series of actions, which is what this apps intends to do.

Additionally, high contrasting colors were selected because they are key when eye sight weakens due to age.

Helvetica UI TEXT - Light - 24 pt.

Helvetica75 UI TEXT - Bold - 26 pt.

Caviar Dreams Display text - Bold - 36 pt.

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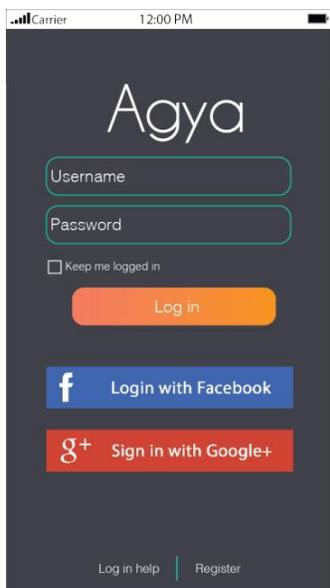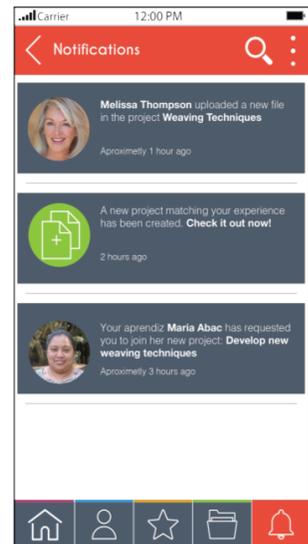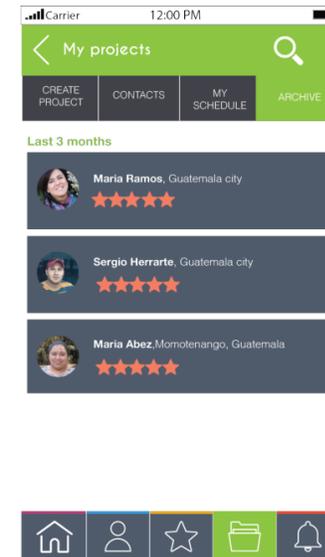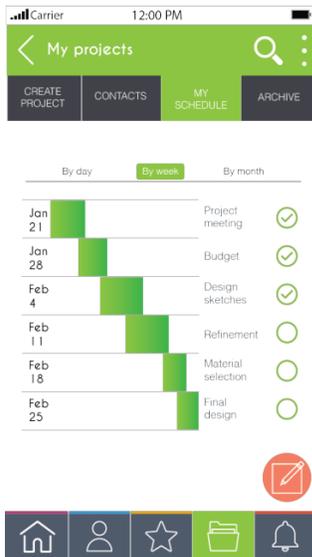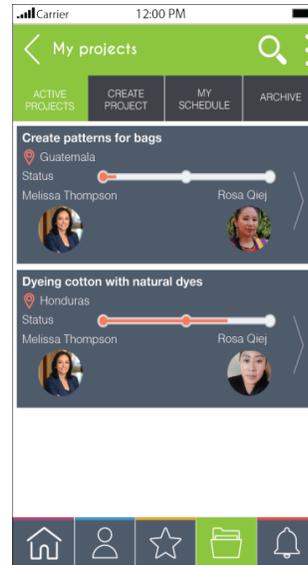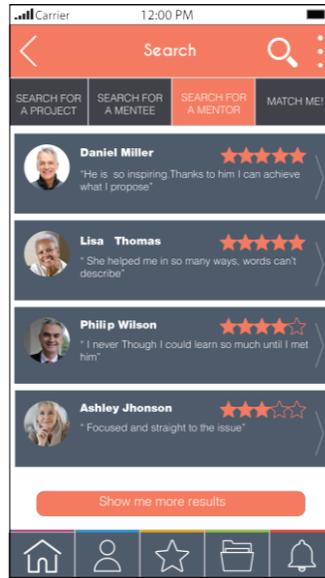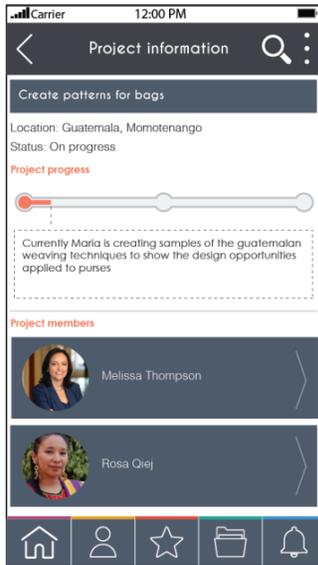
HOW WILL INDIAN MILLENNIALS AGE?

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Abstract

"By 2050 Indian millennials will age differently as compared to their other global counterpart's due to the changing global trends and societal influences"
The world population is on the edge of an extraordinary transformation. The millennial population around the world in 2 billion which makes up to 27% of the global population. By 2050, the millennial population will be more than 4.5 million accounting 50% of the total global population. Indian millennials make up to 0.8 billion out of the 1.2 billion population in India. By 2030 more than 60% of the Indian population will be millennials. In paradox, the world population is aging and these millennials will be a part of the growing aging population. India with a rapid social and economic growth is going to experience aging differently as compared to the global counterparts. The objective of the research is to understand the connection between Indian millennials and the global trends, Urbanization, Climate change and Technological innovations on the home, work and health environment. The research will also examine its effect on the Indian Society and the lifestyle of the aging elderly millennials.

Introduction

Millennials are a generation confident, self-expressive, upbeat and open to change. They are more ethnically and racially diverse. Millennials are defined by their ubiquitous use of technology and belief that an education in technology will ensure personal future success. Technology is the new gender gap as Millennials are impacted by it differently. The term "Generation Y" is widely used to refer millennials other than in United states. ((Amaria, 2015))
Indian Millennials worldwide are unique when it comes to their values and lifestyles. Some common traits in the global millennials is being connected to the world around them. The introduction and evolution of internet, WiFi and smartphones has had a fundamental effect on this generation. They are highly concerned about their work environment and is one of the top priority to be selective about the companies to work with. Many millennials have one foot out of the door. 44% millennials would quit their current employer to work in any organization or to do something different. (The 2016 Deloitte Millennial Survey Winning over the next generation of leaders. , 2016)
Per researcher's millennials are "unattached" as compared to the generations before them. They do not feel close ties to their jobs or the brands to which they give money. (What Millennials Want From Work and Life, 2016) Millennials in developing countries are unique due to their surrounding social economic and maybe cultural environment. They believe in being satisfied, goal oriented, and prefer Work-Life Balance & Flexibility and career advancement. There is a significant digital divide between developed and developing countries, which shapes the contrasting approaches to technology and internet. By 2030, less than half of the developing world population will be online. In the developing countries, the environment is not as digitally advanced as in the west. The consumption of goods populates on the model that "popular in west, becomes popular for the rest".
Millennials are more connected to technology than any other generations before and believe that their relationship to technology makes them unique. Computational processing power has doubled every year since computer were incorporated in our lives. Under these trends millennials have come of age in a world where technology have been limitless. With the arrival of creating and

disturbing content online created opportunities for millennials to excel in production as well as consumption of technology

Apart from the 1.8 millennials worldwide, India is home to the 700 million millennials.

India is a major market for social media with over 9 in every 10 internet users. India's internet penetration has been increasing gradually from 13% in 2013 to 15% in 2014 and 16% in 2015. On the contrary internet access through mobile has increased from 63% to 82% in the form first quarter of the year to the last quarter in 2014. (McKinsey, 2012)

India's rapid climb to one of the world's most technologically-advanced countries has been particularly fueled by the country's massive economic growth over the past decade and a spirit of entrepreneurship supported by world-class innovators, engineers, business leaders. India's leading technology companies have changed the global marketplace challenging the traditional labor market and business processing systems.

Methodology

Secondary research

To understand the following came from journal and report for the following topics:

- Indian millennials and how are they different form their global counterparts.
- Technology adoption in India as well as how does it percolate to the various social structures within the Indian society.
- Global trends changing the face of technology and their impact on Home, health and work environment
- How will global trends impact the developing countries such as India.
- Senior Living in India.

Primary Research

To understand the role of enabling technologies and how this will fit in the Indian Millennial lives, and how these could enable experiences that match their values. Question asked:

What is the perception of aging?

How is work environment different with technology?

Is life better and healthier?

The future of everyday things

What does it mean to be a millennial in 2050

Survey

Qualitative research:

- Questionnaire survey of a total of 50 respondents to understand Indian baby boomer and How are they aging in presence of technology.
- Interviews with two groups of millennials living in India,
- age 18-24: high educational level + high income family
  medium educational level + medium income family
- age 24-34: high educational level + high income family
  medium educational level + medium income family

Qualitative as well as quantitative approach

- "A day in 2050" – 45 minutes video calls
- Expectations from the future – survey (questionnaire will be formed based on the earlier preliminary interviews).

Analysis

The geographic location and the social economic backgrounds make the millennials diverse. By 2030 more than 60% of the Indian population will be millennials. In contrast, the world population is aging and these millennials will be a part of the growing aging population. The elderly millennials in India will be aging not only with technology but with social, cultural and traditional values and lifestyles.

This translates that Indian millennials will struggle for a better quality of life to have a secure and stable future after retirement. Their top worries are financial stability, environment and health concerns.

The research indicated that Indian millennials want to be engaged in work after retirement, thus there is a need to help them see the future and make a better planning before.

With the growing global and societal changes, the lifestyle of an elderly Indian millennial is going to change drastically. The physical, emotional and financial wants, need to be planned urgently. Envisioning a life after retirement and making necessary savings and investment in terms of lifestyle, work and health for a mentally secure future is the inference of the primary research. To survive the pressure of the changing societal, economical and global influence, Indian millennials are looking for a plan to stage their next steps.

There lies a deep need to device a tool to help the millennials see their future after retirement. If the Indian millennials seek for a future with their family what will be the known and the unknown situations to be prepared after retirement. There lies a need to plan for financial security in order to have enough savings for a self-sufficient and self-reliant retirement. Not only in the terms of finances but retirement in India is more about community, connectedness and social life. How can these aspects be leveraged to give the Indian millennials a better future and a happy retirement?

Thus, the research indicates the following aspects which could be leveraged in creating a solution for the elderly millennials:

- The need to provide a tool to predict the future for the millennials based on changing global trends, urbanization changes, environmental changes and technological innovations. A solution to place themselves in best possible setting.
- A tool to help Indian Millennials identify the gap between the existing and the future developments in terms of finances to evaluate the sufficiency of funds and need for an urgent planning towards the future.
- Making this platform available to the Indian millennials at an early stage so they can evaluate the best out of their expected future, their choices and make amendment as per individual needs.

Business Model

The product vision is to provide the millennials with a tool to help see their future as per their personal preferences. It will act as a tool to connect with a platform by playing with the different variables. The web /app based scenario design will act as a learning tool for the Indian millennials placed in a specific situation and timeline.

Partners

The potential partners for this application will be the Human resources of companies and multi-national companies. They will be the key in distributing the application to young millennials. The application can be promoted as an employment benefit helping the millennials

starts saving for their future and give them the ability to see the possible future. Investment anks; can advertise the app acting as a promotional tool.

In India, real estate companies have a big potential to dive in and partner with this concept. Companies such as Tata Housing and Ashiana group are one of the major contenders in providing senior living. These can be the real estate partners or team ups. To attract users, this platform can be tailored to their needs. These companies can be potential team ups to cater to the saving needs of Indian millennials to invest in future.

Key Resources

The interaction within the app will be fed by an external big data about cities and urbanization in India, trends forecast on housing, economy lifestyle and social environment.

Reports by Ministry of Urban Development, India, reports by Ministry of Finance on Indian economy, health and welfare plans, 15-year development plans, Indian census on family, household and societal developments will be the data indicators for the scenario. Social media and promotion will be an important resource for the working and promotion of the application.

Customer Segment

The potential customers for the app are Insurance companies, Financial companies and Private companies. Insurance companies helping to invest in saving and retirement funds will be the ideal customers. The product can be used by the leading private insurance company such as Birla or ICICI to appeal to younger millennials. The value lies in obtaining a detailed profile of an Indian Millennial to make them aware about the future and help them with a retirement plan which is financially secure.

The possible replicability of this concept can be applied to any other region or country. Scenario generation framework will remain the same with the changes in cultural, demographic and societal variables. Personal variables will also change as per cities, societal trends and forecasts.

Revenue Stream

The revenue for the application can be in two ways

A freemium Model: A business model that allows a user to receive basic services for free, but requires them to pay for any service considered to be premium. In the same way, the basic likely scenarios can be the part of the free model, whereas to see the unlikely future of the user can be a premium feature.

Infomediary business model: Trusted third-party reseller or provider of goods or services, competitor information, or research data. Infomediaries are the modern-day brokers who help a client make better investment or purchase decision. Also, called knowledge broker. This will be the ideal business model for the application. Thus, the application can act as an infomediary to the potential insurance companies.

Scenario Design

"Scenarios Design to help Indian Millennials predict at best their future after retirement." Scenarios are a narrative that tell or interpret a story through a series of instances in a specific environmental situation. The scenarios are used as a system to understand and communicate activities to reach an end goal.

The scenario design aims to portray a picture of the life of millennials after retirement in a situation with global, personal and societal influences. The scenario design is flexible and detailed throughout the experience. The design unfolds from "whole to part" gathering small details about the user.

The scenario is placed within a context changing as per the user's choices. This is mainly used to capture the diversity of the user and the play with the possible iterations. The scenarios will narrate the Indian millennials all the possible variations in their future. The design not only

portrays their possible social and business requirements but also their personal choices and preferences.

In this design, the set-ups are a plot and the personas are the characters staging actions which results into a future artifact. The scenario design is in the form of a web/app based responsive design. It will give the user the flexibility to access the platform from any device.

Understanding the Scenario Design for Indian Millennials

Goal: The user aim is to carry out actions based on a series of specific situations to achieve a scenario for his future after retirement.

The user navigates himself through three stages in the design

Information: The user identifies himself based on his basic information such as age, gender, expected retirement age and marital status. The series of questions aim towards gathering information about the user in a global context.

The main goal of this stage is to understand the physical and psychological preference of place and environment to get an understanding about the possible place of retirement based on the input.

City : Where will you live? - This question aims to understand the preference to live in a city which is highly, moderately or low populated. This question is one of the important indicators to provide a suggestion for a city of preference after retirement.

Climate- What climate you prefer?- this question aim to understand the user's physical capabilities to live a specific environmental situation. It is also an indicator of health and comfort after retirement.

House- In which house will I live – this indicator is indirectly connecting to the city. The preference of living in a small house (1 bedroom) or medium apartment (2-3 bedroom) or a big house will be an indicator of the Indian economy. Urbanization will fuel the growth in big cities and raise the standard of living, in this scenario tier II or tier III cities might be the preferred cities to stay after retirement.

Technology- Amount of technology usage will I want after retirement? Technology will be one of the crucial infrastructure in cities. They will fire growth within cities, infrastructure and employment opportunities. This preference is closely connected to economy.

Family Choice- Will you live with your kids or without?
The personal preference to choose to live with your children or not, is a derivative from the primary research. Preference of place of stay will indicate the number of savings and support needed

Health Preference – What help will you need when old?
This question aims to gather information about the physical capabilities to do certain activities. This will help make informed decisions about the finances needed to cover these expenses.

Retirement Business – What kind of a retirement business will you do?
To understand what the user wants from his future is important. This will help planning a scenario for the best suited city, giving ample opportunities for investment in future.

MY Scenario – this gives the user the scenario for his future in a timeline of 10 years. The overview will give the user the best and the worst reasons to be in the city. The overview to the future after retirement is in terms of climate, housing market, lifestyle and expenses.
The Unknown Future: The unlikely scenario possible after retirement gives the user the flexibility to choose the variables which might alter his existing scenario due to an unlikely happening such as loss of partner, health issues, living condition, medical or non-medical care, living with friends or family. This feature helps to tweak the existing scenario to be able to see the unlikely possibility.

Explore my Scenario
This stage will help the user to share, compare and match his scenarios with other users. The user will also save all his scenario, the number of attempts to see the best possible option.
-Compare
Comparison within profile will give the user the flexibility to compare scenarios with friends and favorite people. The app allows to add other users from the contacts and make a comparison of scenarios. The design allows to see compared preferences and adjust personal preferences based on the evaluations. After comparison, the user can also share the same information within friends through social media.
-Match my Scenario
Is an estimate of the possible living expense till retirement? It will account for the needed saving based on the existing salary and savings. The best match will compare markets for the retirement year and provide an estimate for the expected or target savings. The best matching plan will help the user to connect with a more suitable plan of investment and connect him to the insurance company.
Through the design the user will also be informed about the possible risks of savings with his existing saving percentage.

User testing
The users were tested with the look and the feel of the app. The style of the test screen for the app was simple and minimalistic. Some suggestions from the testing were to add a hint of tradition to make it more Indian. The users felt an overall playfulness throughout the app, as the look is illustrative.

Conclusion
India is still in its formative ages when it comes to technology adoption, but technology will change the life of elderly millennials. The Indian millennials aging in 2050 is a scenario with a

mix of values, culture, family and technology. This study has weaved all the social global and personal influences together to generate a robust solution for the future. Indian millennials are unique and different as compared to their global counterpart's due to the strong presence of cultural, social ties and family bonding. Indian millennials are smart, connected and they value their values and traditions. Even though there is a conflict between culture and technology, millennials will find ways to mitigate the needs and desires. This study has investigated the in-depth perceptions of the Indian millennials on their future, specially their lifestyle. The design will in a way provide a sense of achievement and satisfaction keeping the social interaction and networking central to the development of Indian millennials.
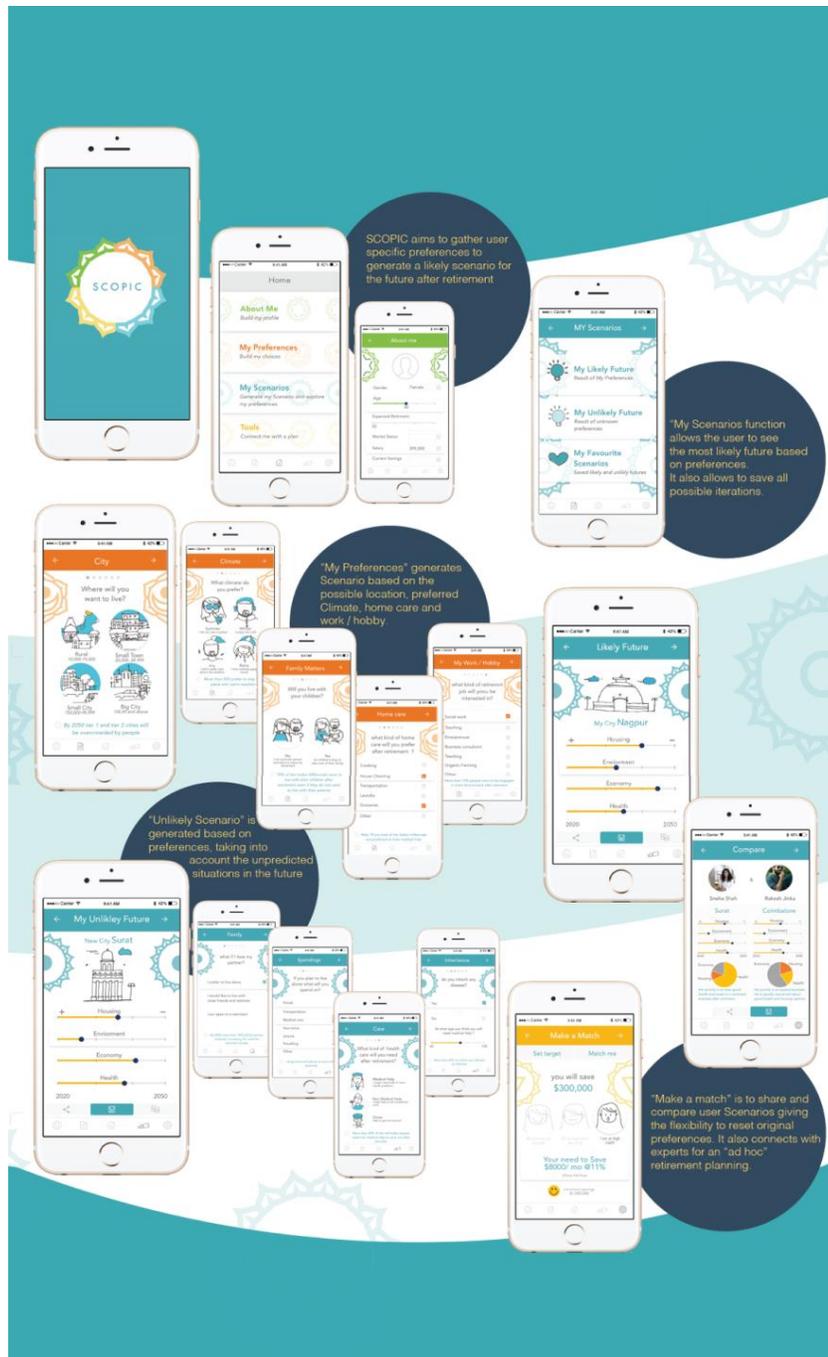
Ant tribe

Zhenmin Li
MFA Integrated Design

Abstract

The "Ant tribe" is a group of young Chinese from rural areas with college degrees, low income, and living in small crowded spaces. They have moved to Chinese megacities to find jobs; however, social condition effects their social life, status, and lack of confidence.

This study aims to fully understand the Chinese Government's effort to enhance the level of education, especially encouraging postsecondary education in the rural population. Education used to be the main route to social mobility for centuries in China, however today there are more college graduates than jobs in China's large cities. Among them, college graduates from rural backgrounds are suffering the most.

Background

Historical and sociological factors

1958-1978: Hukou System

The *Hukou*system is a household registration system. When it was first implemented in the times of the Xia Dynasty (approx. 2070-1600 B.C.), it served as a family registry, but later it developed and acted as a differentiation between clans and tribes. Throughout Chinese history, the authorities used it as a foundation for taxation systems.

Hukou is a system of population registration whereby individuals are identified as either rural or urban residents. The system was initiated by the Communist Party to control population movement, resulting in the division of Chinese society into two classes by a consistently widening gap. Those with urban registrations enjoyed welfare benefits which are typically withheld from rural registration holders. When restrictions on urban migration were lifted, rural peasants were able to move to larger cities and support China's heavy manufacturing and export orientated economy, while remaining a low-cost workforce. However, as rural Hukou holders, they still had less access to welfare, education, jobs, wages, and training opportunities. The social consequences were – and are – sometimes tragic.

Their Hukou status denied them many of the opportunities of their urban counterparts. In terms of recruitment, rural migrant workers are often placed by staffing agencies for short term or non-contract work. Rural migrant workers are rarely considered for long-term contract work. Among the 12 firms interviewed for this paper, eight of them said they take Hukou status into account when recruiting staff. One state-owned enterprise said that 'Alternate Rural Workers' cannot be employed as permanent staff as they have to return to the countryside after five to eight years according to state policy.

There is a conventional belief that rural migrant workers should be relegated to jobs described by the 'three Ds': difficult, dirty, and dangerous. This was enforced by regulatory policy in the past which directed state-owned enterprises to recruit rural migrants for hard, dangerous and temporary jobs. Rural migrant workers also get paid significantly less than urban Hukou holders; the wage of rural migrants was 33-85.7% of that of urban employees. Sometimes it was common to pay them the local minimum salary level. In fact, migrant workers contracted from staffing agencies could even be paid

based on the minimum salary level of their undeveloped hometown. Some firms even try to justify this by claiming that rural workers do not need to be paid so much because they have another income source from the land in their hometown, and have much lower expenditures because most of their families are in rural areas.

The system's function of limiting mobility was practically abolished. However, it still remains a serious problem for the migrants. Direct factors limiting mobility are no longer viable, but the indirect limitations are valid even today.

1978: Urbanization & Economic Reform

In 1800, only 2% of the global population lived in the urban clusters; this had not changed for thousands of years. As of 2008, the percentage of people living in the cities reached 50%. There are more people living in the cities around the world than there are living in the countryside. The dynamic development of urban clusters in emerging and developing markets in Africa and Asia contributed greatly to this phenomenon. It is estimated that by 2050 even as much as 75% of the global population will live in the cities. The process of urbanization will not slow down.
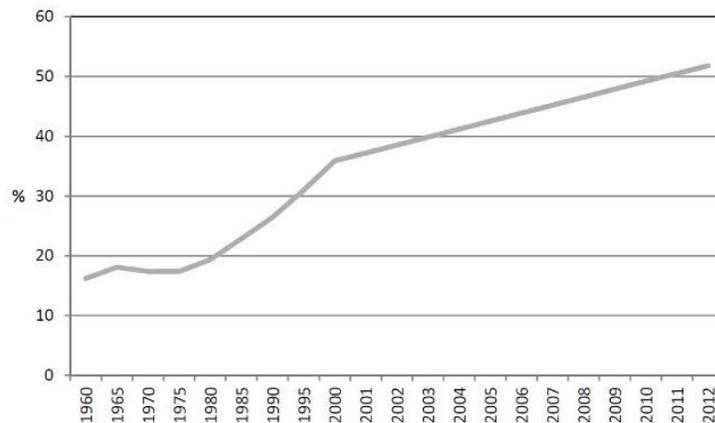
Figure 2. Urban population in China in years 1960-2012 (Urbanization index, in %)
Source: Own compilation based on the World Bank data.

According to the World Bank, in 2012 just over half of the Chinese population lived in urban areas. Until 1981, the percentage of people residing in cities has remained under 20% but grew steadily over the next decades. The 30% barrier was breached in 1994, and the 40% barrier was broken ten years later, in 2004.

This unprecedented growth is said to be greatly influenced by economic reforms. Nonetheless, the main driver of the Chinese urbanization was, and still is, the migration of masses from rural to urban areas, and from inland to the coast cities, like Shanghai, Guangzhou, and Shenzhen.

Since 1978, economic reform has accelerated the pace of Chinese economic development. The unexpected growth of both enterprise reformation and market economic system pushed the market economy development to a much higher level. It accelerated the pace of manufacturing, labor productivity, and the process of urbanization. In 1949, the proportion of urban population to the total population was only 10.64%. Under the planned economy, the urbanization process was slow. By 1978, the urbanization rate was 17.92%, only a seven-point increase in thirty years. In 1984, the Central Government issued a new household registration system that allowed farmers to bring their own family and business and settle in the city. The Ministry of Civil Affairs readjusted the standard for townships,

which increased the number of cities and towns. In 1992, at the 14th CPC Congress Conference, governors established a socialist market economy which also known "Socialism with Chinese characteristics". They decided the city would be the center of regional economic development, and its status and role has attracted a great degree of attention. During this period, China's urbanization and city development become truly alive. Since China began its economic reform, the urbanization rate increased to 34.78% in 1999. At end of 2008, China's urbanization rate reached 45.7% of the entire population, with 607 million.

Unsurprisingly, the urbanization process has brought poverty and the unemployment in cities which is caused by poor collaboration between the inflowing labor force and the demands of the labor market.

Demographic Shift & Chinese Labor Market Transformation

China's rural migrant workers therefore plays a significant part in the country's urban labor force, and they are arguably key to China's continuing economic development. According to the 2012 revision of the United Nations' World Population Prospects, the working-age proportion of China's population is projected to decrease. Some commentators even state that China's workforce already peaked in 2010. Whether or not China maintains the same level of productivity in the coming years will depend to some extent on whether it still has a large stock of surplus rural labor. Chinese megacities are the first areas to complete this demographic transition, but also the first regions to encounter the aging population. They undoubtedly have a large demand for young workers to sustain its economic development, but the one child policy and high expenditure of living, low fertility rate, and late maternal age gradually reduced the young population. However, the fast-economic growth needs many young people to support the labor force.

The gradual opening of China's economy led to rapid growth in urban centers and a boost in demand for workers. Rapid social and economic changes in China since the economic reform and open policy promoted the mobility of labor. The rapid development of coastal cities against the background of economic globalization and industrialization required a huge and lasting demand for labor. The shift is mainly from rural to urban, from the less developed places to the better economically developed regions. Policy change liberalized farmers to work in urban cities and reduced their limitation and risks. Agriculture modernization improved agricultural productivity and reduced labor intensity, therefore, less farmers were in demand. High income levels and GDP per capita of urban areas are the main factor to attract the inflow of labor. Income in rural areas amounts to less than half of the average urban income, even after having taken into consideration the differences in the cost of living between cities and villages.

The reason why Chinese millennial migrants leave their hometown to work in the city is to broaden their vision and learn advanced techniques. They are more concerned about their future development and improving their skills. The more attractive reasons for young people to stay in the large city in addition to employment opportunities and room to develop are the city's public policies, health services, quality of life, and multi-cultural environment. In addition, future education for their next generations has also become a main factor of why new immigrants choose to stay in the city.

1999: College Student Expansion Policy
Under the Chinese planned economy model, all college students' employment was managed by Chinese Government from 1949 to the early 1990s. It's was called "guaranteed job assignment". There was no freedom to choose job positions, only to listen to the leaders of each department.

From middle 1990s to early 2000s, the "two directions, self-selected jobs" employment policy was published due to the Chinese government changing its planned economic model to market economic model. New college graduates are no longer under the protection of "guarantee job assignment", however, there was more freedom to make decisions about jobs. Because of high demand and short supply, employment rate was still very high at the time.

The initial plan of Chinese higher education expansion has a complex background. In 1998, the Asian financial crisis occurred and China suffered. At the same time, a reform in China's state-owned enterprises (SOEs) created a severe problem of unemployment. A Consideration of Effective Approaches to Stimulate China's Economy was proposed for the government to consult.
This proposal included a policy of college student expansion and listed five reasons:
1) College student expansion could increase household consumption by 100 billion RMB, which would contribute 0.5% to China's GDP growth rate per year;
2) It could relieve the recent unemployment by postponing the entry of millions of high school graduates into the labor market;
3) Colleges could accommodate the doubling number of students by increasing investment and the number of lecturers;
4) Chinese people could afford increasing tuition fees with the help of national student loans;
5) It could have a profound effect on improving people's educational quality to meet the increasing demand for highly educated workers and the nation's competitiveness in the future.
Several subsequent policies were affiliated with college student expansion implementation, such as the plan to increase enrollment by 25–30% per year, the implementation of a student loan program, and the design of affordable college tuition fees.

At the end of 1998, A Plan of Education Revitalization for 21st Century was enacted by the Ministry of Education. The proposal aimed at an increase in the gross enrollment ratio in tertiary education, an increase in the student–teacher ratio, and an increase in state educational funding. In 2004, A Plan of Education Revitalization 2003–2007 was passed by the Chinese State Council. This plan focused on the improvement of teaching, mainly for universities on the '985' and '211' lists. It emphasized the design of subjects, the reform in the teaching and evaluation system, and the implementation of the Improvement of New Graduates Employment Program policy.

The implementation of the 'College Enrollment Expansion' policy in 1999 dramatically increased the number of college graduates. It rose from 0.8 million in 1999 to 6.1 million in 2011. Unfortunately, the shortage of qualified teachers and the decrease in educational funds have resulted in a huge number of incompetent college graduates.

With economic reform and the increased number of college students, the Chinese government lowered the level of subsidies for higher education gradually. The expenditure on education ranked the first in total household expenditures in the 10th 5-year-plan (CYCRC, 2007). The high tuition level causes some families to face severe financial constraint, meaning that some students from poor families had to give up the opportunity to attend college. This also means that the poor families benefit less from the expansion policy.
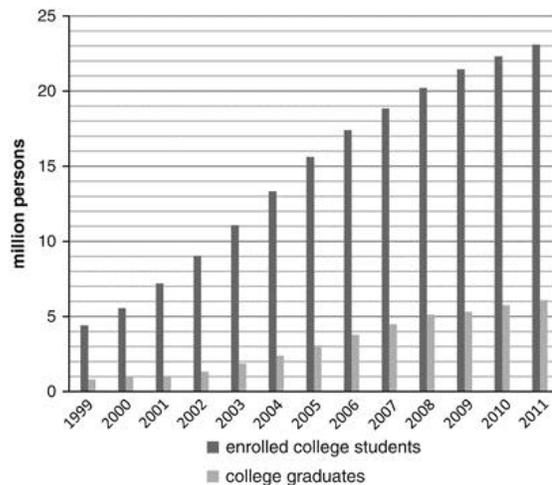
The number of enrolled college students expanded from 4 million to 23 million and number of college graduates increased from 0.8 million to 6.1 million from 1999–2011. In 2020, the total number of enrolled college students is predicted to reach 33 million. This implies that the expansion of higher education will continue for at least another 10 years.

College Graduate Unemployment
The unemployment rate of college graduates was estimated at more than 10% from 2007 to 2010. According to a survey, nearly 100,000 new college graduates could not find jobs in 2011. In 2013, nearly 7 million college graduates poured into the labor market, described as 'the hardest time to find jobs'. Many graduates work in unskilled jobs with low pay. While many new graduates initially anticipated decent jobs, their hopes were soon crushed by reality.

The city population has increased rapidly and college enrollment expansion, which produced many low-quality students, poured them into a labor market has an unequal balance supply and demand. The "Ant tribe" phenomenon is the consequence of many young humans suffering from this "existential mobility".

2012: Chinese Dream
Early in November 2012, Chinese president Xi Jinping articulated a vision for the nation's future that he called the Chinese Dream. The Chinese Dream integrates national and personal aspirations. In advancing the Chinese Dream the government is uniting people around a shared mission and driving change, especially people in lower-tier cities and rural areas, as they experience increased affluence and opportunity. Xi also believes a nation will be prosperous if its young generation is ambitious and reliable, he encouraged young Chinese people to dare to dream, work assiduously to fulfill the dreams and contribute to the revitalization of the nation. He asked all levels of the Party Committees and the government to create favorable conditions for young people's career development. Xi also expects the young generation to make great accomplishments and encouraged them to work at the grassroots and the front line in order to hone their skills and enhance abilities required in their career. The "Chinese dream" concept should play a role of inspiring young people to strive for a better life and a stronger nation, said Zheng Changzhong, a scholar with the School of International Relations and Public Affairs at Fudan University.
The American dream and its influence in the world is an objective reality. Since the founding of the United States of America, with unique natural resources and geographical environment, creative transplantation of progressive European ideas of equality and liberty and a powerful union of

individualist values, many people have made or are making their dreams come true. Xi's Chinese dream incorporates a dream that has been cherished by the Chinese people for over a century. The desire to do better and break out of the protracted state of poverty and weakness has become China's national dream. In other words, the so-called Chinese dream actually represents a desire to be free of suffering and misfortune. The Chinese dream is first of all a collective concept where a rich country and strong army are paramount. Such a collective appeal and vision is quite different from the individualist values of the American dream.

Definition of "Ant Tribe" Based on Multiple Factors

"Ant tribe" definition
The new term of "ant tribe" originated in 2009 from Dr. Lian Si, a young Chinese scholar. It refers to those young people who were born and raised in the countryside, who are low-income college graduates, and are in search of work and livelihood in the big cities. They are young graduates who live in "humble abodes", the squalid, low-cost housing located in urban villages or in the rural-urban fringe zones of the big cities.

"Ant tribe" population
According to "The Chinese Talent Blue Book "(Pan C., 2010) a conservative estimation of the "ant tribe" had more than 100,000 people in the Beijing area alone. In addition, this phenomenon of the ant tribe not only exists in the first-tier Chinese cities like Beijing and Shanghai, but has also spilled into the second-tier Chinese cities such as Wuhan, Guangzhou, Xian, Chongqing, Taiyuan, Zhengzhou and the economically developed third-tier cities. It is estimated this social group has already surpassed 3 million, with a rapidly increasing rate of 0.2-0.3 million people a year.

Demographics
The majority of the ant tribe were born after 1980; 50.3 % are men and 49.7 % are women. 95.4 % of ant tribe are under age 30. The average age of men is 24 years old, the average age of women is 23.9 years old. In terms of marital status, 86.25 % of the people are unmarried and married couples account for 11.375 %. In conclusion, the ant tribe is made up of an equal number of unmarried men and women under age 30.

Family Background
Most of the "ants" come from the rural and economically underdeveloped areas. Those from rural areas account for 60.6%, those from county-level towns account for 27.3%, and those from small and medium-sized cities account for 12.1%. They can be called the "poor second-generation". They don't have registered permanent address in the city of their current residence. According to the current Chinese population administration system, ants don't have city accounts and only have a "temporary residence permit" in the city they are working in or seeking work in, and their permanent residence is registered in their hometowns. The majority of families agree with their children's decision to migrate to a large city.

Family attitude about children migrating to large city

Other, 17%

Don't Agree, [VAL...

Agree, 76%
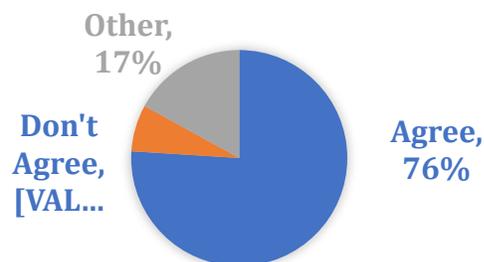
Parents' job sector
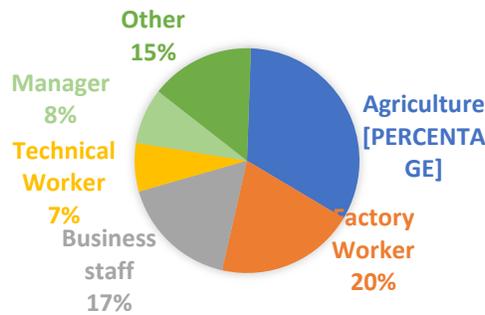
Parents have jobs with little influence and they are not able to help their children find a job.

Education

The "Ant Tribe" are the first-generation university graduates in the vast majority of families. Many of their parents are farmers or migrant workers, town enterprise workers, or small vendors.

Unfortunately, ants are the products of universities enrollment expansion in recent years. In terms of majors, 38.1% chose Engineering Science, Agriculture and Medical Science as their major; 35.6% of them studied Marketing, Economics, Management and Law; and only 26.25% studied History, Literature, or Social Sciences.

Since the job market is not very optimistic, many college graduates decide to pursue a higher degree. However, in the current educational situation, there is a lack of training in practical professional knowledge and social networking skills. The proportion of postgraduates with a master's degree among ant tribe has increased from 1.6% in 2009 to 7.2% in 2010, rising 3.3 times. A commenter in a Chinese Internet "Forum of Postgraduates" said: "Even the postgraduate degree holders will have descended to the 'ant tribe' group, and the proportion is rising, this explains the high degree is no longer a high income, high treatment marks". The Ant tribe has learned that a good-looking diploma is no longer strong enough to compete with others for jobs.

Employment

The ant tribe illustrates a drastic mismatch between China's educated youth and its economic boom. This mismatch partly came from China's existing economic model, which is heavy on trade and investment in infrastructure but slow to produce white-collar jobs. Manufacturing, mining and construction still represent 47% of China's economic output (twice the share in the United States). Recent national research showed that among people in their early twenties, those with a college degree were four times as likely to be unemployed as those with only an elementary education. The ant tribe members are mainly working in private and individual enterprises. The nature of work is chiefly in retail of technology related products, such as computer and mobile phone stores, IT service industry, product marketing, and the service sector. Most of them have no insurance, have a labor contract is short with low and unstable income, and job-hop frequently.
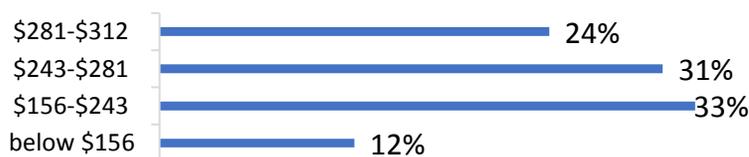

Dr. Lian's survey, the "ant tribe" monthly income in Zhengzhou

Job category
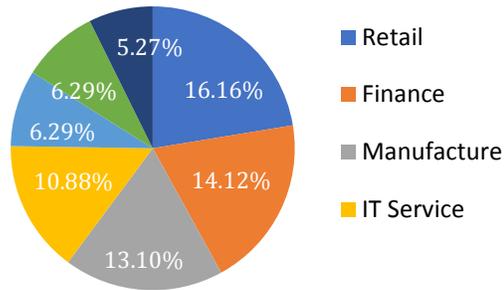
Dr. Lian Si, *Ant tribe*. 2009

"Ant tribe" employer type
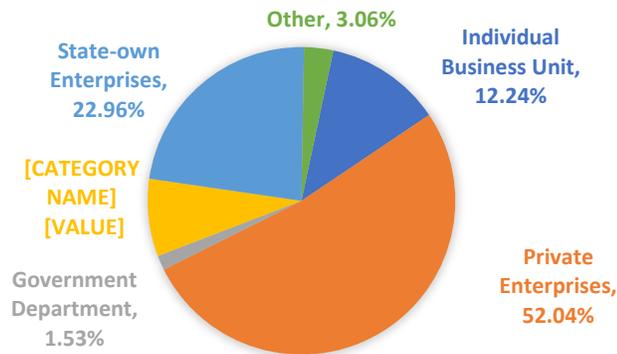
Liu Hongci, *The Research Report on Chinese youth human resources*, Luojia Management Review No.1, 2012(Sum.10)

Reasons of staying in large city
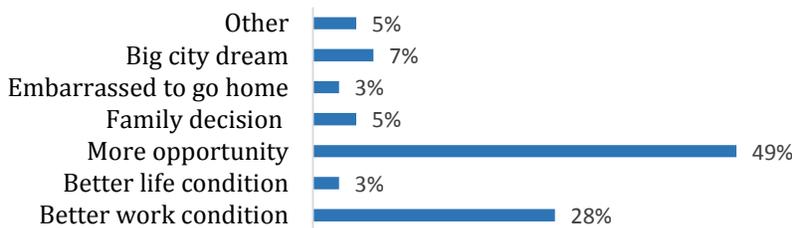
Zhang Xiaosong, *China's "Ant Tribe" Present Social Survival Situation and Personal FinancialAdvice*

Many of the young people who came from underdeveloped regions have an embedded mindset that is "a bed in Beijing is better than a house somewhere else". This indicates young people don't want to go back home or somewhere that is not well developed.

Ant Tribe Villages

The phenomenon of the ant tribe in China appeared in Beijing, Shanghai, Guangzhou and other big cities first and then began to emerge gradually in the capital cities of provinces. Now it has spread to medium-sized cities and some economically developed zones. County-level towns and underdeveloped cities

have not yet experienced this phenomenon. The "ant tribe" group lives mainly in urban-rural areas on the fringes of big cities or urban villages, where the streets are narrow, there is limited living space, and it's generally noisy and the streets are filled with garbage. The dingy accommodation is without a central heating system and hot water. However, room rents are cheap, the cost of living is low, food at the street stalls is affordable, and transportation located nearby. Most ant tribes think the community is safe, but are not satisfied with the sanitary condition.

Quality of Life and Lifestyle

The ant tribe is a group that are over qualified for their job and have a low income but they live a self-determined life. With the exception of a few who need parental financial support, or a few who need support their large families (aging parents, siblings, grandparents), most of the "ant tribe" members live a life of relative financial independence as their families back home are self-sufficient.

Many "ant tribe" respondents have not the habit of eating breakfast because 88.1% of them control their daily meal cost to a maximum of $1.50, and the majority of people consider $0.75 for a meal is too expensive to eat. Some ant" appear malnourished and have chronic fatigue syndrome. Physical health concerns are another big factor that causes quality of life.

Chasing Dreams with Fighting Spirits

With the ant tribe problem in front of us, the general public subconsciously thinks the appearance of this social phenomenon is the result of the university graduates not working hard enough, being lazy, and lacking the fighting spirit. Most of the ant tribe thought that as long as they work hard enough, this kind of social phenomena will disappear. However, they have discovered regardless of how much time and effort they put in, they are still struggling. In a survey, less than 10% of people believed that their present living predicament is shaped by themselves. The majority of respondents said, "Some people think that the 'ant tribe' gathered in the cities due to our own problems, but we do not agree." The reasons for the current situation are not the result of personal causes, but are due to the city's high-price housing, university education system, and university graduate employment policy. The ant tribe slowly pick up a general mindset that "The reasons of we get into trouble not due to ourselves. We must stick it out in this difficult position, because we have a dream".

When Dream Meets Reality

Just out of university, the vast majority of the ant tribe, although they have met contradictions between ideals and reality, are driven by their aspirations and believe that their own efforts can change their life predicament and look forward to achieving a middle-income lifestyle within the next five to ten years. About 70% of the ant tribe pursues their ambitions for their future and are certain of their success. There are more than 50% who believe that they will become the elites of society in 5-10 years.

There is no doubt that big cities have more opportunities and also the promise of greater dreams, however, as the cruel reality unfolds before them via fierce labor competition and rising living costs, they realize that only a select few can become the elites, and those reaching white collar class prosperity with housing and a car would not exceed 20%.

When they find after several years of struggle their own economic status has not changed much and the problems of housing needed to be eligible for marriage and family are becoming more urgent, the pressure as well as anxiety increase. Without holding a decent economic position, the frustrations of love, failure, impulses of sexual deprivation and loneliness are intertwined together, resulting in depression, and sometimes mania, anxiety, irritability, hostility, and even despair. Optimism and pessimism coexist, anxiety and expectation mix together**.** So, here the ant tribe members over 30 years old are rarely stay and they leave the "colony" for many reasons and for different options. Some of them may toast to the success, while others may leave with tears of failure. Whether older members of the ant tribe's psychological state are in critical condition, as well as their success after leaving the tribe, and the potential effects, would require separate research in the future.

Places to Look for Help

According to the data, the ant tribe mainly relies on family members and friends' help when they face any trouble and they are relatively independent. When they encountered troubles, 34.15% of them will seek help from family or relatives; 35.46% will ask help from colleagues and friends; 28.33% will not seek for help but work it out by themselves. The remaining 2.06% will ask help organizations or online media.

Primary Research

Survey results

In order to find real end users and collect useful insights, a survey with 30 questions was published online, and 36 surveys with useful data were selected by filtering for migrants who moved from village or third-tier city to first or second-tier cities. The majority of them are 22-29 years old. Because they were born and raised in rural regions, more than 60% of them don't have either Hukou or property in large cities. Many rural individuals got into universities which are located in large cities, and they decided to stay and search for jobs because they believe large cities have more opportunities and they don't want to waste a chance to make a change for their lives. In addition, they had four years of familiarity with the city compare to the newcomers.

No matter how much they complain, they still have a strong willingness to live in large cities. According to the survey results, these people really care about their social status, find happiness and confidence by having close friends, loved ones, a stable social network, and wide connections. As far as work is concerned, they will be proud of themselves if their future career development goes well, such as achieving a job promotion and higher income and learning new skills. In addition to their work and social life, they care about their physical body and mental health condition.

What makes them confident and happy?

Learn new skills/get achievement	33.33%
Stable social network/wide connections	36.11%
Salary increase/job promotion	36.11%
Live independently/good time management	41.67%
Body/mental health	41.67%
Have close friends/love ones	50%

What makes them dissatisfied and disappointed?

Lost future direction	41%
Crowed daily traffic	41%
Lack of exercise	38%
Poor time management	29%
Helplessness	25%
Work Pressure	22.22%

Barriers to living in a large city

High cost of living	63%
Loneliness	55%
Polluted air quality	47%
Low income	39%
No hope for future	30%
Unfair treatment	5.00%
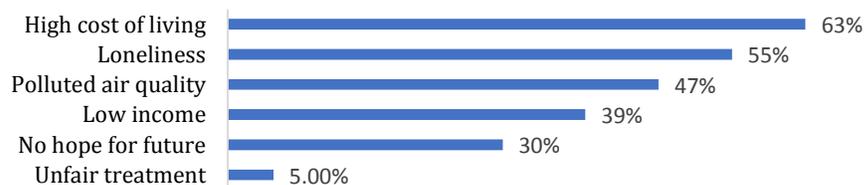
Only 27% of people paid close attention to the future Chinese job market; 66.7% only know a little bit. This information indicates those young people only care about what happens around themselves. They didn't have access or knowledge to look at the bigger picture of Chinese future development which also explains why they are stuck and lost direction in their current life. Even though it is difficult to survive or live in large city, it has various advantages and benefits to attract many young people to come and stay there. The survey shows in next 5 years, 66% chose to stay in their current city and 5% of them will move to an even better and larger city. Only 13% of the people decided to go home or to a low-tier city.

Interview result

Interviewee: five young people, five females and three males, with bachelor's degrees born in rural areas were interviewed.

In terms of education and work, more than half of their majors didn't match their job positions. They didn't consider major job prospects and they aimlessly picked a major which they thought would be interesting to study. They did not receive guidance or assistance from their parents in choosing their path of study. Even though their current job positions are not what they studied in universities, they believed they learned and improved many useful skills, such as: business process, communication with colleagues, and time management.

Seven out of eight interviewees know some young entrepreneurs but none of them have actually considered starting their own business in near future. They don't want to take the risk of losing their current job which they already became accustomed to and find potential future development. For male interviewees, finding a promising job, building strong social connections, finding a beautiful girlfriend, and buying an apartment are the primary tasks for themselves.

Many of the interviewees have a great deal of pressure from their parents, because their rural parents hope them acquire a very good job and quality of life. However, they think parents' guidance and support will increase their sense of security and life happiness.

Analysis

According to both secondary and primary research, the ant tribe phenomenon is the consequence of previous government decisions including:

1)   Hukou system

Hukou system had divided Chinese society into two classes and rural Hukou holders lost out on many social benefits and suffered a low quality of life.

2)   Chinese economic reform brought unexpected urbanization

The city population has increased rapidly and widened the gap between rich and poor.

3)   Education expansion leads high underemployment rate

College enrollment expansion produced many underprepared students and pushed them into labor market that an uneven balance between supply and demand. Many graduates are either unemployed or underemployed.

4)   Chinese Dream encouraged more city dream chasers

This made the labor market more competitive and difficult to find jobs.

"Ant tribe" vicious loop

Because of the ant tribe's the low income, there are limited fund that can be invested in education and training to improve their self-quality and abilities, which largely constrained the potential for self-development. There is vicious loop that the ant tribe has fallen into: a low income caused little self-investment and less input and caused the ant tribe only have low ability and self-quality; less self-development brought them low income again. There is no way for the ant tribe to break this loop unless someone stands up to help them by providing more access to opportunities and resources.

Poor Social network

Ant tribes don't want be left out or feel loneliness in a new environment. They find happiness and confidence by having close friends, a significant other, and a stable social network. However, members of the ant tribe barely have any friends or work connections in large city, so they have strong sympathy and heavily rely on each other. Ant tribes will provide help and support for each other.

Large Family Pressure

Ant tribes feel very guilty because their parents fully supported them and expect them to earn a better life in large city. However, the ant tribe can neither maintain a good life in large city nor pay back anything to parents. Due to the college student high unemployment rate, education is a high input and low return industry that seems worthless from an economic perspective.

**Poor Physical and Mental Health**

The ant tribe wants to care about their physical and mental health, but the stressful and low income job prevents them having healthy meal every day. The ant tribe is very conscious about time and their goal is to make their life as efficient and productive as possible. They are also the generation who cares about fairness, justice, and responsibility. A strong stubbornness in their hearts keeps them from moving away from a large city even if life here is really difficult.

Aimless Job Hunting

Most companies don't want spend time training new employees, so the ant tribe has to be ready and prepared for 'battle'. After many failures, the ant tribe will desperately take any job opportunity and easily enter a wrong working field or career path. With a mindset of luckiness, the ant tribe will blindly search for a job without any professional guidance, knowledge, or work experience.

In addition, most of the ant tribe is suffering from the high living expenditure and don't care or know too much about future Chinese job market development. Exploring a way to utilize government and school databases to help the ant tribe to be aware of the job market information and calculate every cities' living cost is very important. A few successful student entrepreneur examples had stimulated and encouraged many young people, but without any professional guidance, social connections and public support, it is still very difficult to replicate for members of the ant tribe who barely have enough income to sustain a quality life.

User opportunity window
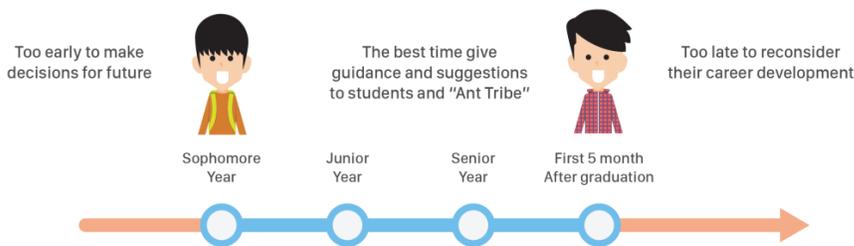
After studying the ant tribe phenomenon, it can be defined as a great social issue. The ant tribe isn't the only actor in this system. It is necessary to consider the early stage of the ant tribe and other actors, such as government, school institutes and entrepreneurs.

First Stage: Senior Students in High School and Freshman in College:

At this stage, it is necessary to educate and guide both parents and students about the importance of exploring each individual's interests, the future Chinese job market, and choosing college majors carefully. However, it is still too early to decide on a career due to the unpredictable future job market in next four

years and students' changing interests during their college studies. In addition, high school graduates who barely have any work experience can hardly predict where they will be and what they will do in next four years. Rural parents might not be able to help students because they don't have any knowledge besides agricultural work experience.

Second Stage: Sophomore, Junior, and Senior Students in University and Recent Graduates:
At this stage, students have at least two years of academic study and possibly some internship work experience. They will have a much better understanding of their own individual skills and personal interests and they should have some ideas about the future since they will soon graduate. In terms of time, they are only one or two years away from graduation, so the future job market is much easier to predict. At this stage students still have time to modify, improve, and discover their interests, capabilities and direction. All their decisions made during this period will easily effect their future development.

Third Stage: Ant Tribe More than Five Months Post Graduation:
This group of student will have less time and less of a chance to make any modifications to their plans for the future because they don't have free time as they are busy writing resumes and interviewing. Life and family pressure make them aimlessly and desperately search for jobs which might lead them to an unsuitable or unpleasant career path. Without school's backup, their life will become very unstable and they will move frequently.

Design Solution

To redistribute young labor force away from first-tier cities' competitive labor market by delivering government official policies and information, the design solution is a social platform to reduce college student and ant tribe career confusion by offering experienced and successful individual guidance.
User have to input real personal information to setup a profile. By inputting hometown, major and school, it will automatically match users who shared commonalities. In this way, users can bound together quickly and help each other as a group.

In this platform, the Chinese government and schools play the role of delivering the current and future policy information and entrepreneurs can share their successful stories and latest business opportunities with college students, the ant tribes. In this way, students and ant tribes will have a clearer direction to plan their career and life path.

College students, members of the ant tribe, and entrepreneurs can exchange information with questions and answers. Suggestions, knowledge, and tips from entrepreneurs and experienced members of the ant tribe can be very helpful to those students.
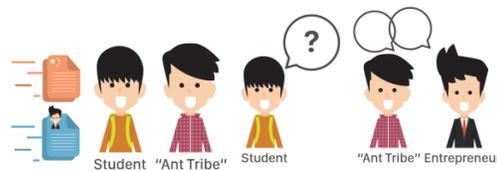
If the ant tribe is being helpful, they can collect "**like**" from students to participate a ranking system. Based on how many "**likes**" they have, the ant tribe can exchange them rewards that are provided by government.
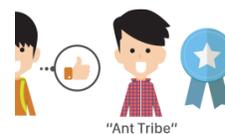
Rewards are tickets to different lectures/conferences, such design conferences and TED talks, where the ant tribe could learn new skills and expand their social network.

Additional motivation for the ant tribe being inside the ranking system is that they have a higher chance to expose themselves to entrepreneurs. Only ranked groups can have their resumes accessed by entrepreneurs, which possibly lead to a new connection and job opportunity.

Target users

Rural college student

Rural college students are still impetuous and emotionally immature. Without real work experience and unpreparedness for upcoming challenges, many of them mismatch their talent and work field, and countless failures heavily strike their confidence and esteem. They cannot spend significant amounts of time, money and energy to search for jobs, especially in a large city and overcrowded job positions. These graduating college students desire each other's direction and suggestions to avoid inconveniences and troubles.

Ant tribe

Because of the unbalance in the labor market, most of them have an unstable job and uncomfortable life in a large city.

Partners/Supporters

Private entrepreneurs

In large cities, there are numbers of job openings for blue-collar but many recent college graduates don't have either the skills for those available jobs require or the willingness to do blue-collar work.

Government/School Institutes

The high unemployment rate among recent college graduates caused the voice of complaint to rise rapidly. Even though the ant tribe is not currently involved in group actions, that does not mean they don't have a tendency to engage.

Media Channel

Both college students and ant tribes are familiar with technology and application usage and most of them own a smartphone.

Business viability

Why not LinkedIn

LinkedIn is very successful in the U.S. market, but in China can only attracts people who speak English, who have some overseas background, and who have worked in multinational corporations. Therefore, LinkedIn isn't the right platform for those low-class and rural-background students and the ant tribes.

First Test insights

After a couple rounds of testing, from students and ant tribe's perspective, many of them liked the application because it's quick and simple to get tasks done, such as launch or find a question and answer. It is also very convenient to address the government policy information in big news section. Some of the concerns come from entrepreneur side. A few of them didn't find the too much value to help the ant tribe because there are many others who face a much more difficult situation. However, others thought it was

a good way to help ant tribe find jobs. They all agreed that the entrepreneur will not provide any money involved in rewards, because they consider themselves as businessman, not as a charity. So, they agreed on the idea of having the government sponsor those reward tickets to top users. They wish the ranking system could be more private or anonymous, so that the ant tribe won't dislike each other for some reason.

Second Test insights

Accessing the application as an entrepreneur, there are few incomplete functions, such as how-to referral and sending the top ranked ant tribe resumes to other entrepreneurs and how the entrepreneurs will get question notifications are still in progress. Testers and I discussed how the resume should be uploaded. Should it be a link to other website or user have to create during the register section?

Design Goal

UI Design

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F05363   EF3C5C   4566B0

Gotham Medium

San Francisco Display Medium

Work Flow

College Student   Employed   Entrepreneur

Page
Link
Other App page
View only information
Option
Action
Input
Notification
System Background

A1.0 Log In
Cellphone number/Email
Password
Log in
Help
Register

A 2.1
A 2.0
NO / YES

B 1.0
Junior/Senior Student
Ant Tribes
Entrepreneur

B 1.0
B 1.1

A2.0 Register
First name
Last name
Home region
Link with social network
Back
Next
A 3.0

A2.1 Help
Cellphone number/Email
Call Customer Service
Back
Next
A 3.2
A 3.1

A3.0 Status
College Student/Graduated
Current School name
Employed: Ant tribe
Current Company name
Company Owner
Company name
Back
Next
A 4.0

A3.1 Verification
Send verification code
Input verification code
Back
Next
A 4.1

A3.2 C. Service
Call
Back
Dial Page

A4.0 Verification
Upload photo
Cellphone number/email
Create Password
Send verification code
Input verification code
Back
Confirm

A4.1 Password
Input new password
Reinput new password
Back
Complete

B1.0 Q&A
Economic/Management
Science/Engineer
Sociology/Literature
Art/Design
Other
Ask question
Questions list
User picture
User name
Question title
Amount of comments
Search
Big News
Profile
B 2.0
B 2.1
B 2.2
C 1.0
D 1.0/1.1

B1.1 Q&A
Economic/Management
Science/Engineer
Sociology/Literature
Art/Design
Other
Top 5 questions list
User picture
User name
Question title
Amount of comments
Big News
Profile
B 2.1
C 1.1
D 1.2

B2.0 Ask question
Economic/Management
Science/Engineer
Sociology/Literature
Art/Design
Other
Type box
Send
Back to Q&A
B 2.1

B2.1 Question title
User picture
User name
Question content
Save/unsave favorite
Answer question
Back to Q&A
B 3.0
B 3.1

B2.2 Search
Economic/Management
Science/Engineer
Sociology/Literature
Art/Design
Other
Type box
Search
Back to Q&A
B 1.0/1.1

B3.0 Friend request
User picture
User name
Message
Send
Cancel
D 2.1

B3.1 Answer question
Question content
Type box
Send
Back
B 4.0

B4.0 Question title
User pictures
User names
Question content
Answer content
Like
Reply
Save/unsave favorite
Answer question
Back to Q&A
B 3.0
B 3.1

C1.0 Big News
Economic/Management
Science/Engineer
Sociology/Literature
Art/Design
Other
Information list
Information title
Amount of Views
Search
Q&A
Profile
C 2.0
C 2.1
B 1.0
D 1.0/1.1

C1.1 Big News
Economic/Management
Science/Engineer
Sociology/Literature
Art/Design
Other
Information list
Information title
Amount of Views
Upload/Share
Search
Q&A
Profile
C 2.0
C 2.2
C 2.1
B 1.1
D 1.2

C2.0 Information title
Information content
Save/unsave favorite
Back to Big News
C 2.0

C2.1 Search
Economic/Management
Science/Engineer
Sociology/Literature
Art/Design
Other
Type box
Search
Back to Big News
C 1.0/1.1

C2.2 Upload/Share
Economic/Management
Science/Engineer
Sociology/Literature
Art/Design
Other
Type box
Publish
Back to Big News
C 1.1

D1.0 Profile
Conversation list
User picture
User name
Contact list
My Favorite
Setting
Q&A
Big News
D 2.0
D 2.2
B 1.0
C 1.0
D 2.1
D 2.9

D1.1 Profile
Amount of "Like"
Conversation list
User picture
User name
Contact list
My Favorite
Ranks
Resume
My Box
Setting
Big News
Q&A
D 2.0
D 2.2
D 2.4
D 2.9
B 1.0
D 2.1
D 2.3
D 2.5
C 1.0

D1.2 Profile
User picture
User name
Ant Tribe Ranks
My favorite
My message
Setting
Q&A
Big News
D 2.6
D 2.8
B 1.1
D 2.7
D 2.9
C 1.1

D2.0 Conversation
Search Bar
Chats
User picture
User name
Time
Friends' Favorites
Back to Profile
D 3.0
D 3.1

D2.1 Contacts
Search Bar
Chats
User picture
User name
Friends' Favorites
Back to Profile
D 3.0
D 3.1

D2.2 My favorite
Questions list
User picture
User name
Question title
Amount of comments
Information list
Information title
Amount of Views
Unsave
Back to Profile
B 2.1
C 2.0

D2.3 Ranks
Economic/Management
Science/Engineer
Sociology/Literature
Art/Design
Other
Amount of "Like"
User picture
User name
Reward info
Back to Profile
D 3.2

D2.4 Resume
Edit
Resume content
Back to Profile
D 3.3

D2.5 My box
Message
Message list
Reward
Conference names
Time
Redeem
Amount of tickets
Image
Delete
Back to Profile
D 3.4
D 4.0
Website
I/F

D2.6 Ant tribe Ranks
Economic/Management
Science/Engineer
Sociology/Literature
Art/Design
Other
Amount of "Like"
Ant tribe pictures
Ant tribe names
Resum title
Back to Profile
D 3.5

D2.7 My favorite
Questions list
User picture
User name
Question title
Amount of comments
Information list
Information title
Amount of Views
Resume list
Ant tribe picture
Resume title
Ant tribe name
Unsave
Back to Profile
B 2.1
C 2.0
D 3.5

D2.8 My message
Message list
Delete
Back to Profile
D 3.4
I/F

D2.9 Setting
Reset password
Chang cellphone/email
Home region
Push notification
FAQ
Legal
Customer service
Confirm
Back to Profile

D3.0 Chats
User picture
Time
Type box
Upload
Send
Friends' Favorite
Back
Camera/Photo
D 3.1

D3.1 Friend favorite
Questions list
User picture
User name
Question title
Amount of comments
Information list
Information title
Amount of Views
Back
B 2.1
C 2.0

D3.2 Reward info
Conference names
Time
Amount of tickets
Image
Link to conference website
Back
Website

D3.3 Edit
Link/website
Input info
Upload
Delete
Save
Back
Camera/Photo
I/F
D 2.4

D3.4 Message list
Message content
Previous Message
Next Message
Reply
Delete
Back
D 4.0

D3.5 Resume title
Resume content
Share
Send Message
Rate
Save/Unsave
Back
D 4.1
D 4.2

D4.0 Reply
Type box
Send
Back
D 3.4

D4.1 Share
Phone contact list
Wechat contact list
Back
Phone Contact list
Wechat Contact list

D4.2 Send Message
Message type
Type box
Send
Back

Letter from the Chairman's Desk
By Sunil Bhatia PhD

I was appointed by government for supervising for safe evacuation, collection of rubbles out of depleted, abandoned and ruined building because it should not hurt anyone who was working for razing the building and I found a hidden treasure in an unexpected area in metallic container of gold ornaments was in fact jackpot. That very moment I realized those who kept that wealth for future designed concept of 'hiding' by burying underground in such a way , it should not be noticed by others. It was an act of hiding and it might be possible of beginning of practice when something considered being useful but limited and seekers were more or it quickly got spoiled in open or placed in open invites calamities or more trouble .Sometime it is involuntary action when someone wishes to notice or tries to snatch our holding items it is the other person's hands moves back for hiding or it is noticed when someone to protect the privacy moves to cover the chest or slip in between the tightly close thigh to avoid the exposure of modesty . Art of stealing has come into the existence as people learnt the art of hiding the valuables.

In modern times smugglers conceal or hide such items which are of high value but require less space and local government bans for certain reasons and they try slipping into hiding in such a way as if it should not be noticed by authorities for commercial gains. Gold or other valuables can be easily concealed because their volume is less and easy for hiding. I have never come across people are smuggling of cotton bales which have large volume and their value is low. The way our technologies are improving it is attacking individual's privacy even it is not sparing states and act of hiding gets nearly impossible. Earlier nature of crime or method of hiding was different so investigations were different. Digital world has changed the hiding the identity as well nature of crime so nature of investigations. It is difficult for any country to hide the nuclear program or any such activities that are objected by other countries and it is willing to do so with hidden way without arising any suspicion because every inch and moment is under surveillance of satellites or other sophisticated devices can detect after effects or test shock waves tremor the earth and that has been continuously under monitoring by different agencies of the world. They locate the incidence with high precision.

There was practice among low income group of people who have small savings, faith in well trusted philosophy 'cash in hand is real power and money in other's hand makes life on mercy' and they suffer with less resources for investment for keeping in safe or strong room but prefer in hiding where no one can notice like false electric switch board that appears as it is functional for hiding the cash or valuables and relied on either use of deceptive techniques or buried where no one can imagine.   Even housewives hide small savings in containers of pulses or under plastic or paper placed on kitchen shelves of that helps in for proper management of their houses as well as keeps it away from the eyes of head of the family who faces difficulty in running of the house and feels short of money and children look for extra money for meeting requirement of their lifestyle and she discloses in extreme emergency. When common people were failing in hiding the money and risk factor was high then a few select thought of starting concept of bank for money as well management of valuables. I noticed young girls are hiding love letters under social pressure of not to be noticed by other family members by wrapping under hair's bun or keeping in book pages or such places where no one can think.

Women have special instinct of hiding those items appear ugly in such a way that no one can imagine or house wives hide life style items those are necessary for maintaining hygiene or satisfying physiological needs but help in precaution of not conceiving products should not be noticed by their growing children that may arise curiosity, these help in distracting their immature minds from their objectives and believe certain knowledge should come to their minds with maturity. They hide broom behind the sofa. I have never seen duster or broom or even vacuum cleaner are taken as decorative items and placed in drawing rooms but these are placed in hideouts where notice by guest is difficult. Design of Tawa for cooking loaf come into existence because they understood that direct heat invites accidents, to avoid it should be hid the heating flames with metal sheet without compromising with heat for cooking that has given us concept of indirect cooking medium.

Why do we need act of hide? What did make Adam and Eve to use fig leaf for hiding? Why do we get averse of naked person? Is it not reflecting our survival instinct? Is it not improving our imagination or curiosity 'what is behind it?' A journey of fig to modern dress and that too for designing for exposing different body parts for attraction of opposite sex is interesting and what to hide and what to expose form are modern dress sense. Modern man is advanced and knows the art of hiding as well same time make it attractive for getting attention of others as we noticed in designing of undergarments for highlighting the assets. Idea of designing of concealed pockets in dresses is basically for hiding the valuables for safe transportation.

Primitive people were using natural survival instincts of hiding behind the dense bushes not to be seen by attackers and similar instincts was visible in animals where they feel attack by enemies hide beneath the sands or jump into water or change the color of skin according to environment or look for possible places where they can hide and avoid possible attacks. Act of hiding behind the trunk of the tree from possible threats or hide by living safe inside the cave by closing the entrance with heavy stone prevents from attack of wild animals. Even hiding behind the fire for safety was a common practice that helped in designing fire torches as well used smoke for catching the animals for foods by smoking out from their hideouts. That practice is still noticed to take out honey from beehives by smoke for allowing bees to escape and leave behind stored, guarded, hidden honey. Some people feel threat was close and nothing to hide behind they submerge into nearby water reservoir like river or pond holding their breath not to be noticed by attackers where water act as a shield for hiding behind for protection. Survival for hiding was mostly with using soil or bushes or water but discovery of fire has changed their hiding techniques. Night helps in hiding and most of the attacks are executed keeping darkness in minds of attackers . Light is the tool that uncover hidden and even modern police uses flash light to catch hold the hidden criminals by making them temporarily blinds with light and no opportunity to escape in dark. Army advances hiding behind the smoke screen for not to be noticed by enemies. Fire personnel wear fire resistance dresses for hiding their bodies behind it for meeting challenge of fire. Bomb squads hide behind the special dress for lowering the impact of explosion. Killing of large animals and skin was also used to hide reason was it was helping in hiding by covering that scared the animals and later it helped in designing various products that helps in hiding. Design of masks of various animals is an ancient practice was result of concept of hide and I am not entertaining idea of reason of birth whether it was for rituals or scaring the other attackers.

 Nature hides the unripe fruits and grow with color of leaf and as it ripens it turns to attractive color for real hidden agenda for getting notice for purpose of seeds should be scattered properly and get new lease of life. Animals lay the eggs or delivers offspring at such places where possible attackers should not notice their presence and helps in not to be prey for food. It is one kind of natural instinct of hiding develops in every mother of the world for growing children till they stand firmly in world to meet the challenges. Children express their emotional psychology by hiding behind the mother or hugging her. Those natural techniques of hiding help in survival and   provide longevity as well maintain the ecology. Night envelops and makes the attackers to strike their prey for food difficult unless and until nature has given capability to see in darkness.

Even our ancestors were aware about stagnant water stales quickly and turned into unfit for consumption .They designed the containers for storage that has come to their minds because of concept of hiding from eliminating

the chance of not coming under attack of reason of spoiling. It was further enhanced by adding covering with lid not to come under influence of foreign elements. Even covering the foods was an act of hiding from rodents or insects and avoid the possible reach because of its aroma indicates the presence of food or presence in open was clearly visible and taken as open invitation.

Not to hide technique also helped in designing various products and generally used for trap for catching the birds or animals by spreading the grains for attraction over spread net. Those old techniques are still prevailing but in modern times threats are no more identical with those of primitive times so our techniques are changed but basic psyche remains the same. Army men wear the dress that matches with surroundings that help in hiding. Even do the body paintings for hiding in surroundings. They hide behind stack of sands bags from possible attacks of enemies. Design of Swiss knives for army personnel was result of hiding various items need in battlefields as well help in lowering the carrying load. They carry the folding tent for housing or mosquito net to hide under from attacks of harsh weather as well bite of mosquitoes. Design of shield allows to hide for saving from the fencing. Design of rat trap is designed on principle where it can be noticed easily and not on hiding and place food attract for movements of lever for shutting the door.

Design of umbrella helps in hiding by placing under it from sunshine or rain. Design of house helps in hiding behind wall and roof from saving from vagaries of weather as well attacks of wild animals. Design of shoes or gloves are designed to hide the foot or hand from any possible eventualities from weather or external forces. Design of shade for limited hiding of glare of light and extension is goggle that hides the eye from sunlight. To hide the eatables from the children mother hides in such a way it should not be easily noticed by them or should be out of reach by keeping over shelf. Design of makeup is to hide the body part that appears not in proper shape or real expression hide behind make up. Even celebrities go beyond this and go under knife for cosmetic surgery for hiding their real age. When a person applies dye for hair coloring that is attempt of hiding real age and for proving others still potential and fertile. A few select groups are trained for hiding the real expression or personality to slip into enemy country for gathering information and hide it in such a way it becomes difficult to locate and that profession is spying. To communicate the secret message not to go into the hands of enemy who designed various techniques of hiding the message.

Lubricants, paints are hiding the items surface from fast wear and tears. Carpenter introduces the aesthetic sense in product with hiding the head of the screws or nut bolts or nails with such a way it appears as one piece without joints. Bonnets hide the engine of automobiles. Concealment with washers or linings in engine is nothing but attempt of proper hiding otherwise seepage may invite accidents.

Open wounds attract the insects or flies' as well on other elements that further deteriorate the condition. We have learnt hiding helps in fast recovery that led in designing bandage or band aid. Hiding has given us new products and ancient people might thought cane sugar juice or fruits juices were valuable for survival, storage and preservation techniques were unknown or in absence of it, people might have attempted in hiding the fruits or juices from the others by burying underground in container and as time passed natural fermentation has given concept of liquor. Similarly concept of compost by hiding the agriculture waste in pit by covering with soil helps in both ways. One it controls the breeding of insects and another it does not stink as well turned to maneuver. It is old practice in nursery where seeds are sowed for germination in protected environment for saplings and biggest fear that seeds are food for birds and to protect they hide by covering with dry bushes.

When I was child there was game of hide and seek or some time it was called 'I spy' where my friends were hiding in open ground and for winning the game I had to locate rest of the players who were hiding in their possible hide out. Magician entertains the audience by hiding the items visible by telling it is disappearing but reappeared from unexpected place. Card players are holding the cards in that hands in a special way for hiding that opponent player should not see the cards. But in chess nothing is hide and that is the beauty of the game. Similarly prompters in theatre hide in such possible manner he should be close to actors but not easily visible to the audience. Fall of

curtains after the act hide the theatre that flare the curiosity among the audience what is going to happen. There are group of experts in the world who are in search of hidden treasure.

It is great honor that Prof. Maria Luisa Rossi of College of Creative Studies has invited her students for contribution of articles from student fraternity and this issue is no less than our milestone special issue of 150th. She has done a complete justice with this special issue and our readers will definitely enjoy reading it and personally I feel like to stand and salute her.

LAMBERT Academic Publishing has published book "Design For All, Drivers of Design" author Dr. Sunil Bhatia of Design For All Institute of India and it is available on **www.morebooks.de** one of the largest online bookstores. Here's the link to it:

https://www.morebooks.de/store/gb/book/design-for-all/isbn/978-613-9-83306-1

This book is dedicated to our esteem readers, contributors and well wishers.

With Regards

Dr. Sunil Bhatia

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Forthcoming Issues

August 2018 Vol-13 No-8

Sameera Chukkapalli (1992) is currently a fellow at the FabCity Research Laboratory, Barcelona, Spain. She founded needlab, a non-profit organization to create a model of optimized practice to deliver maximum impact with the objective of making a difference to the communities. She was the project director and tutor for the Needlab_Kuwait Matters, India Matters, Vietnam Matters. She is working as Space Designer with CARPE LA Augmented Reality project in Los Angeles, USA, funded by the LA2050 program, to eliminate gray zones in public parks and to make them user-friendly. She has represented needlab and lectured in five countries on three continents, actively initiating a conversation about Human Centered design with Policymakers.

Sameera graduated, with MA Arch in Digital Matter and Construction, and completed Open Thesis Fabrication, on Large-Scale Natural additive construction using robots, from IAAC, Barcelona, Spain. Obtained B. Arch degree from BMSCE, Bengaluru, India, and the University of Berkeley, USA; Worked with External Reference Architects in Spain; Worked with VTN Architects in Vietnam, on the Tokyo pavilion "Bamboo Forest" for Japan and "S House"(low-cost housing prototype) for Vietnam.

September 2018 Vol-13 No-9

Dr.Bijaya K. Shrestha received Doctoral in Urban Engineering from the University of Tokyo, Japan (1995-'98) and Master in Urban Design from the University of Hong Kong, Hong Kong (1993-'95). Having professional experiences for almost three decades he had served to numerous organisations – Government of Nepal, educational institutions, private sector and United Nations Centre for Regional Development (UNCRD): Disaster Management Hyogo Office, Kobe, Japan, besides consulting works for ADB, UNICEF and UN-Habitat. His contribution in establishing Post Graduate Department of Urban Design and Conservation at Khwopa Engineering College in 2007 is noteworthy, where he served as Head of

Department for two years. At present, he is engaged in ADB supported projects and research works in different Architectural Schools, besides editing international journals and conference papers. He is the recipient of numerous gold medals and prizes for his excellent academic performance. He was decorated by 'Calcutta Convention National Award 2006' by Indian Society for Technical Education for his best paper at the 35th ISTE Annual convention and National Seminar on Disaster – Prediction, Prevention and Management. He has already contributed more than ten dozen of papers, published in various forms: book chapter, international journals, conference proceedings, local magazines and journals including in local newspapers. He is regular writer for

October 2018 Vol-13 No-10

Dr. Sugandh Malhotra has over sixteen years professional experience in industrial design and automotive styling industry. He has worked on design projects for marquees in the industry that include Honda R&D, Hero Global Design, Hi-Tech Robotic Systemz Ltd., SETI Labs Berkley, Aprilia Motors Italy, Bombardier Canada and most of the leading automotive and consumer brands of India. He has been instrumental in design of over 18 techno-commercially successful launched products at a pan India level. He has won many International and National level design awards. Dr. Malhotra takes keen interest in teaching design and has been mentoring students from many leading institutions such as IIT Delhi, IIT Roorkee, SPA Delhi, Lady Irving College, IILM, Pearl Academy among others. Currently, he is working as an Assistant Professor and the Coordinator of MVD program in IDC School of Design at IIT Bombay. His research interest areas include design research methods, future design possibilities, trend research and design forecasting and intelligent mobility systems.

November 2018 Vol-13 No-11

Asst. Professor Yasmeen Abid Maan (Associate MIAP, MPCATP) PhD Scholar (College of Art & Design, University of The Punjab) M-Phil (Arch), University of The Punjab, B Arch (UET, Lahore) has accepted our invitation for Guest Editor.

December 2018 Vol-13 No-12

 Robert Nichols , an Owner of Nichols Design Associates, Inc., Washington, DC has been extensive experience in Architectural Design and Universal Design for over 35 years. His expertise within this area of specialty includes building surveys and ADA Accessibility checklist for the public and private clients. He is President and Chairman of the Board of World Deaf Architecture, Inc. (WDA), a new knowledge group of American Institute of Architects (AIA), since a non-profit organization was established in 2016. Received B.Arch. & M. Arch. degrees in Urban Design under the leadership of Prof. Colin Rowe from Cornell University will be our Guest Editor.
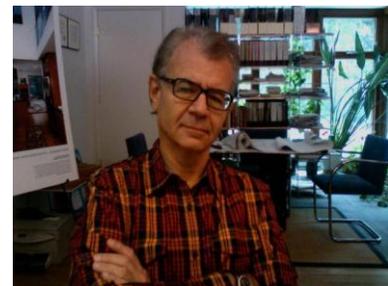
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Expression of gratitude to unknown, unsung, unacknowledged, uninitiated and selfless millions of heroes who have contributed immensely in making our society worth living, their design of comb, kite, fireworks, glass, mirror even thread concept have revolutionized the thought process of human minds and prepared blueprint of future. Modern people may take for granted but its beyond imagination the hardships and how these innovative ideas could strike their minds. Discovery of fire was possible because of its presence in nature but management of fire through manmade designs was a significant attempt of thinking beyond survival and not

doubt this contributed in establishing our supremacy over other living beings. Somewhere in journey of progress we lost the legacy of ancestors in shaping minds of future generations and completely ignored their philosophy and established a society that was beyond their imagination. I picked up such drivers that have contributed in our progress and continue guiding but we failed to recognize its role and functions. Even tears, confusion in designing products was marvelous attempt and design of ladder and many more helped in sustainable, inclusive growth.

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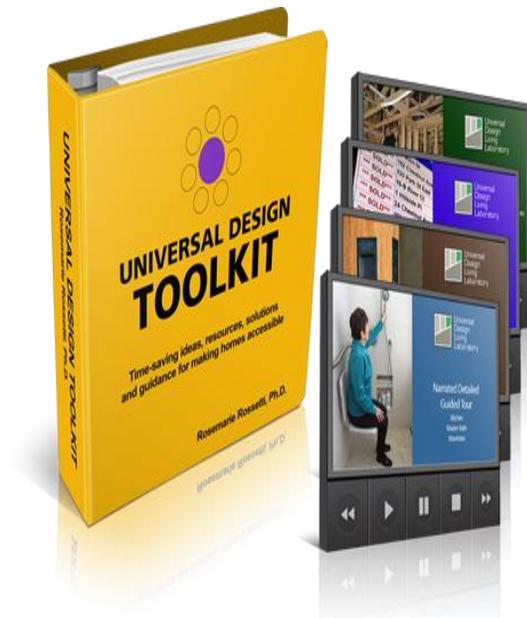
The Ultimate Resource for Aging in Place With Dignity and Grace!
Are you looking for housing options that are safer and more accommodating for independently aging in place? Do you want to enjoy comfort, accessibility, safety and peace of mind – despite your disabilities, limitations and health challenges? The help you need is available in the Universal Design Toolkit: Time-saving ideas, resources, solutions,and guidance for making homes accessible.

This is the ultimate resource for individuals and professionals who want to save time, money and energy when designing, building, remodeling or downsizing a home. The Universal Design Toolkit will help you take the steps to design homes for your clients or yourself while eliminating the costly trial and error challenges you'd inevitably encounter if faced with this learning curve on your own.

Rosemarie Rossetti, Ph.D., teamed with her husband Mark Leder in creating this unique Toolkit. They bring ten years of research, design and building expertise by serving as the general contractors for their home, the Universal Design Living Laboratory– which is the highest rated universal design home in North America.

Within the Toolkit's 200 richly illustrated pages, you'll find:

Insights that distinguish *essential* products, services and resources from the *unnecessary*.
Proven, realistic tips for finding the right home.
Home features you need to look for. Nothing is assumed or left out.
Handy home checklists and assessments.
Interview questions to help you hire industry professionals with knowledge and experience.
Photographs that provide a frame of reference to inspire, clarify and illuminate features andbenefits.
Valuable resources to save you time, money and energy.
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If you want useful, dependable advice and easy to implement ideas from respected experts who know the ropes, you'll love Rossetti and Leder's perspective. As a speaker, author and consultant who uses a wheelchair, Rossetti has helped hundreds of people design their ideal homes. Now her comprehensive Toolkit is available to help and support you!

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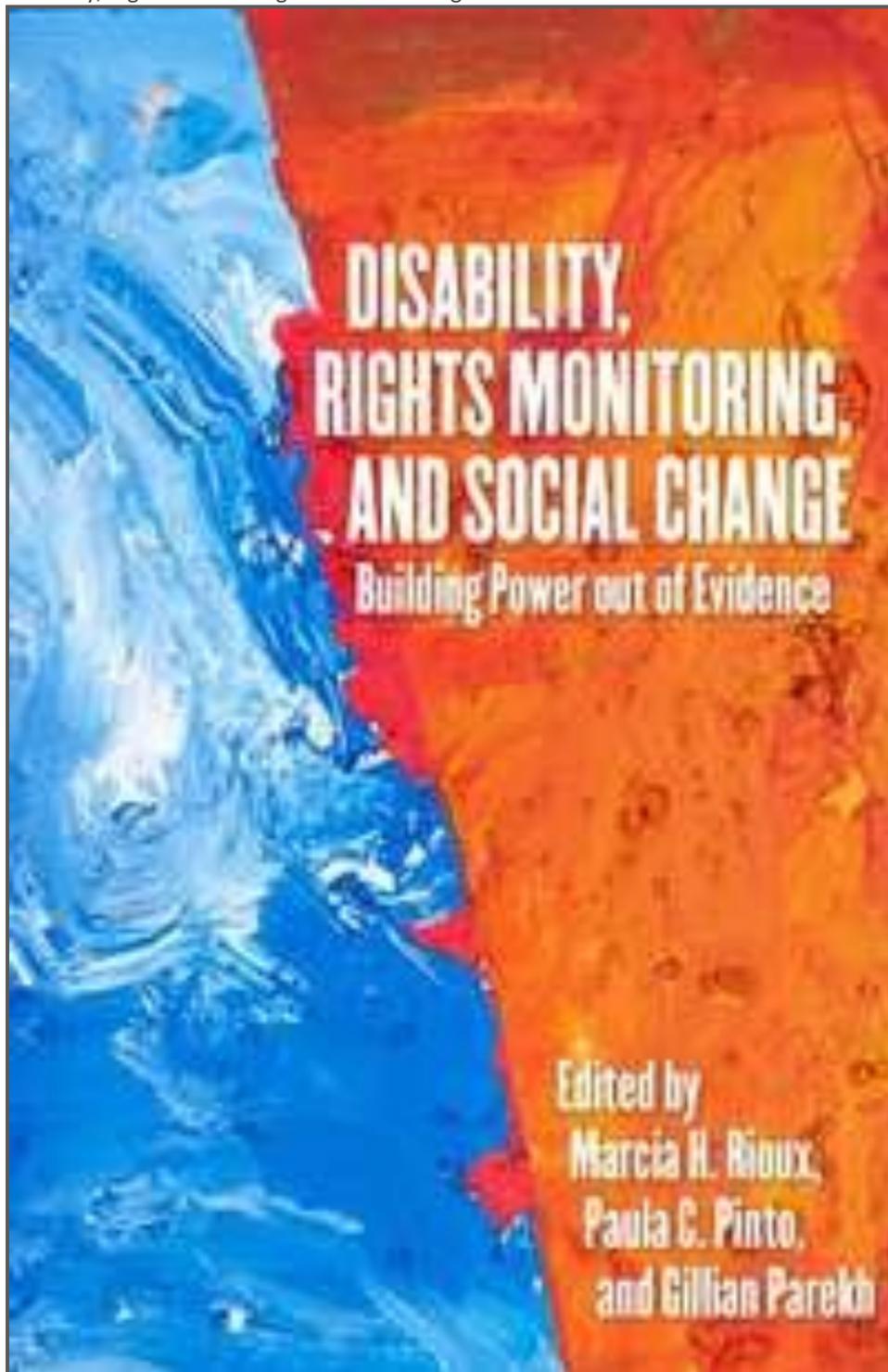
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Product Description

In this book, Elivio Bonollo takes us on a 'learning journey' about design including a scholarly explanation of the characteristics and power of the design process. It provides valuable insights into the attitudes, knowledge and skills that underpin the design discipline at an introductory level of expertise, and has been developed to meet the needs of aspiring designers in many areas including industrial design, design and technology, art and design and architecture. Elivio uses an operational model of the design process - along with related educational strategies, learning outcomes and an ordered set of design briefs - to develop a systematic, problem-based method for learning design from a first principles viewpoint. The beauty of this approach is that it brings structured learning to aspiring designers whilst being mindful of diverse cultures and backgrounds. Each part of this book encourages self-expression, self-confidence and exploration: it is has been carefully designed to take the reader on a highly motivating journey of design thinking and creativity, supported by excellent sample solutions to design problems, lucid discussions and extensive references. These solutions, developed by design students, serve as novel examples of how to solve real problems through innovative design without restraining creative freedom and individual personality. The design learning method and strategies in this book will greatly assist design and technology teachers, students of design, aspiring designers and any individual with an interest in professional design practice.

I cannot recommend this book highly enough, it was a complete lifesaver throughout my undergraduate studies and honours degree and now continues to serve me well as I move into industry practice. The content is easy to understand and follow, providing a practical guide to understanding design principles and every aspect of the design process. It includes great project examples and reflects the wealth of knowledge and experience possessed by this accomplished educator. I have purchased multiple copies of this book for peers and would suggest any student who is studying a design discipline to pick up their own copy as this has quickly become the most useful book in my design collection.

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⭐⭐⭐⭐⭐ A 'Must Have'.
By Amazon Customer on 7 April 2016

As a Design Education professional of many years standing, I endorse this book without reservation. It is comprehensive, lucid and above all, useful in a very accessible level at the coalface. Professor Bonolo has an enormnous cache of experience as an engineer, designer and design educator and his experience is well demonstrated in this book. A 'must have' for anyone in the business of educating or being educated in the product design arena.

Tapping into HIDDEN Human Capital

How Leading Global Companies Improve their
Bottom Line by Employing Persons with Disabilities

DIS **ABILITY**

Debra Ruh
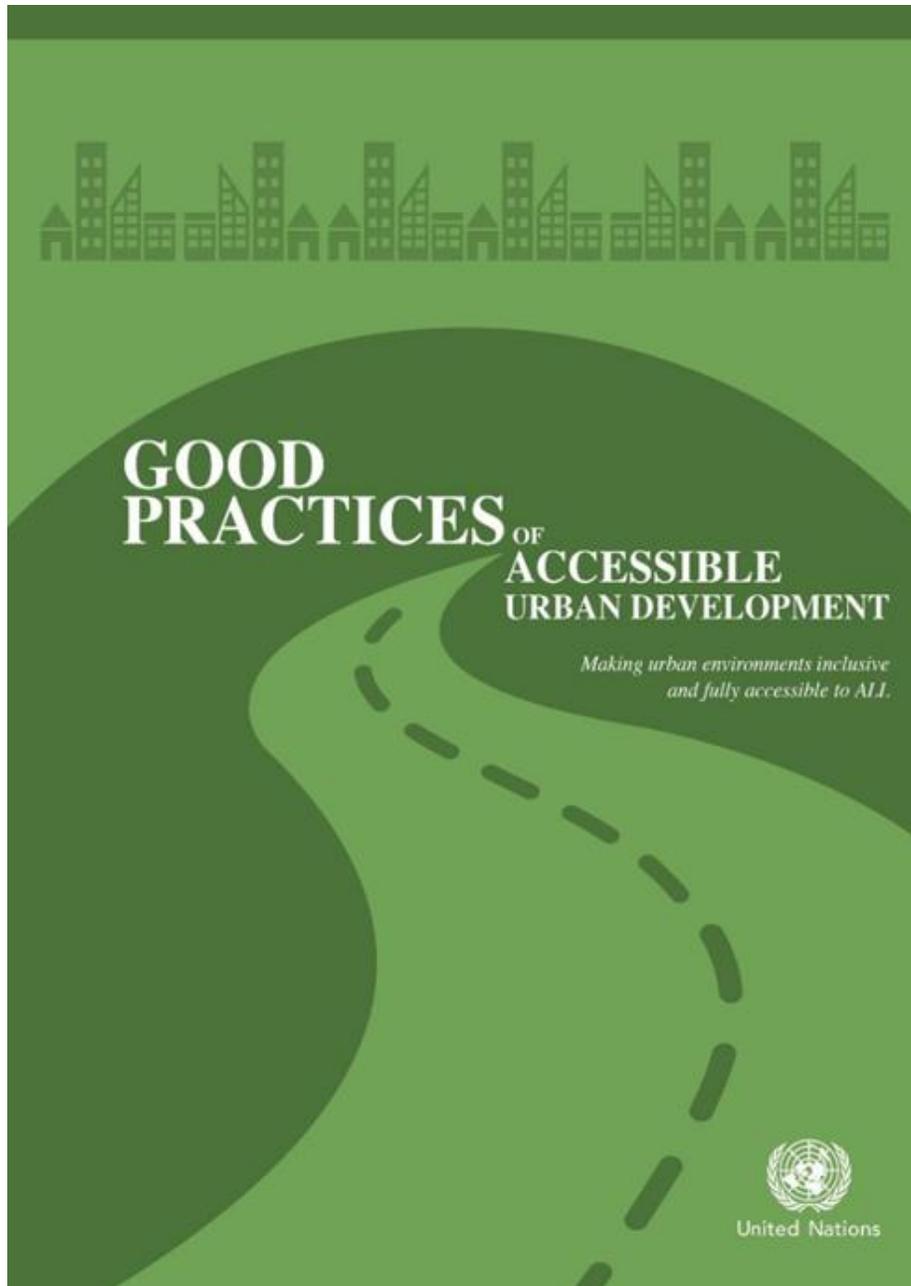
In light of the forthcoming United Nations Conference on Housing and Sustainable Urban Development (HABITAT III) and the imminent launch of the New Urban Agenda, DESA in collaboration with the Essl Foundation (Zero Project) and others have prepared a new publication entitled: "Good practices of accessible urban development". The publication provides case studies of innovative practices and policies in housing and built environments, as well as transportation, public spaces and public services, including information and communication technology (ICT) based services.
The publication concludes with strategies and innovations for promoting accessible urban development.
The advance unedited text is available
at:**http://www.un.org/disabilities/documents/desa/good_practices_urban_dev.pdf**

FROM MODULARITY TO EMERGENCE

A PRIMER ON THE DESIGN AND SCIENCE OF COMPLEX SYSTEMS

Chih-Chun Chen and Nathan Crilly

CUED/C-EDC/TR.168
Engineering Design Centre
Department of Engineering

UNIVERSITY OF CAMBRIDGE
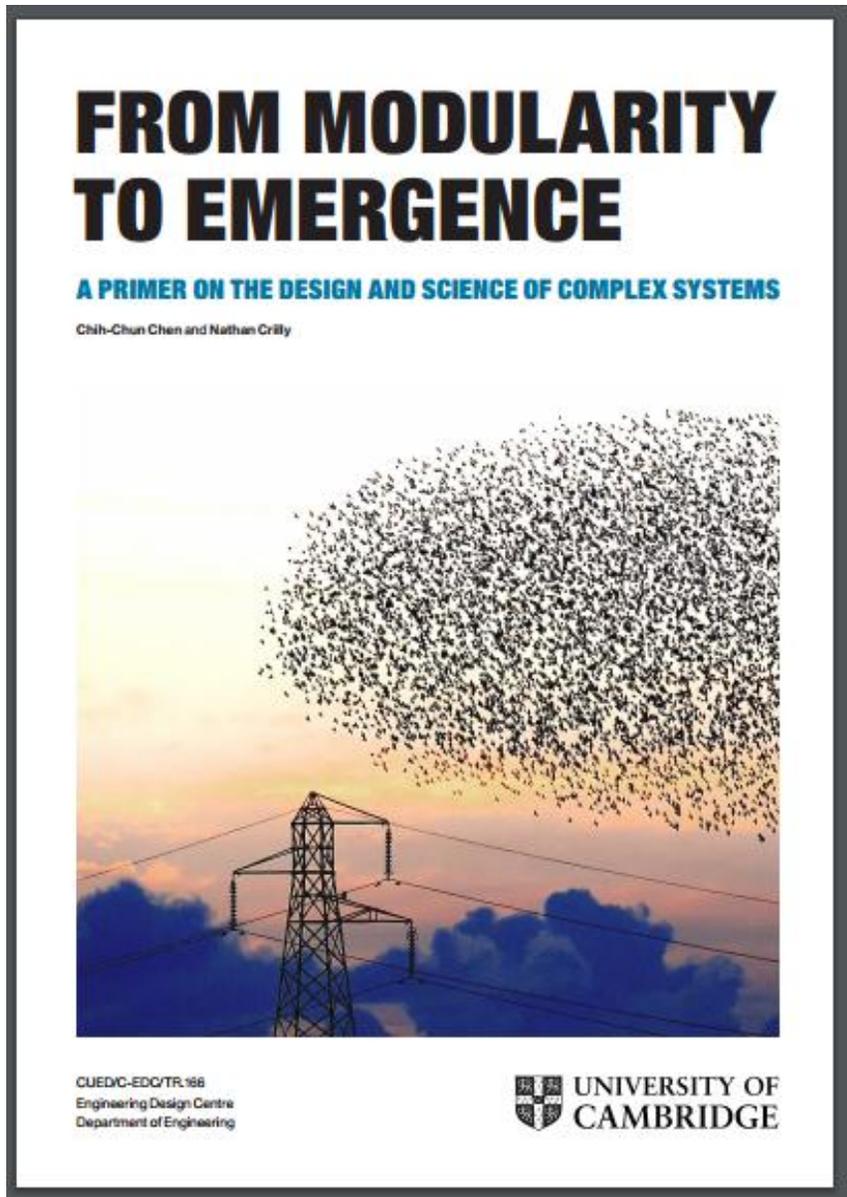
Dr Chih-Chun Chen and Dr Nathan Crilly of the Cambridge University Engineering Design Centre Design Practice Group have released a free, downloadable book, _A Primer on the Design and Science of Complex Systems_. This project is funded by the UK Engineering and Physical Sciences Research Council (EP/K008196/1). The book is available at URL:

http://complexityprimer.eng.cam.ac.uk

Changing Paradigms:
Designing for a Sustainable
Future

Editors:
Peter Stebbing
Ursula Tischner

CUMULUS THINK TANK
Publication No 1 of the Think
Tank Series from the Cumulus
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Changing
Paradigms:
Designing for a
Sustainable
Future

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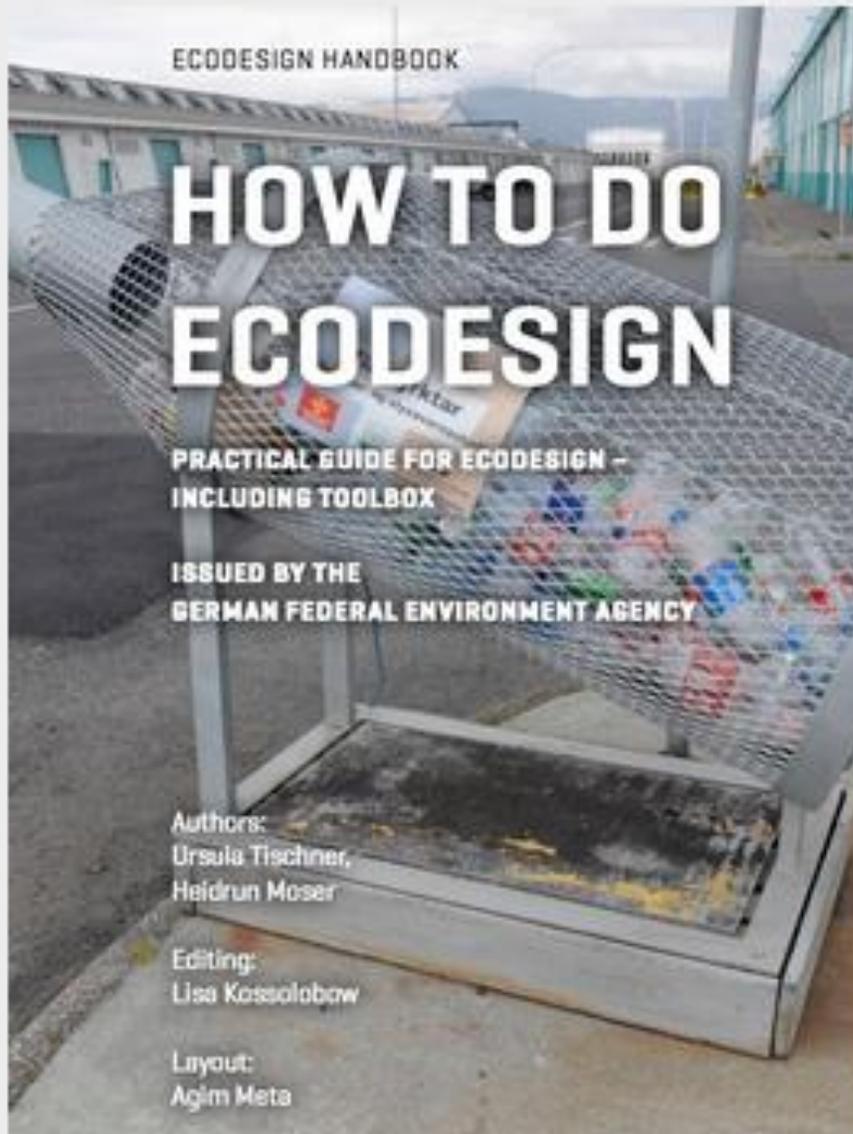
Practical Guide for Ecodesign – Including a Toolbox
Author: Ursula Tischner
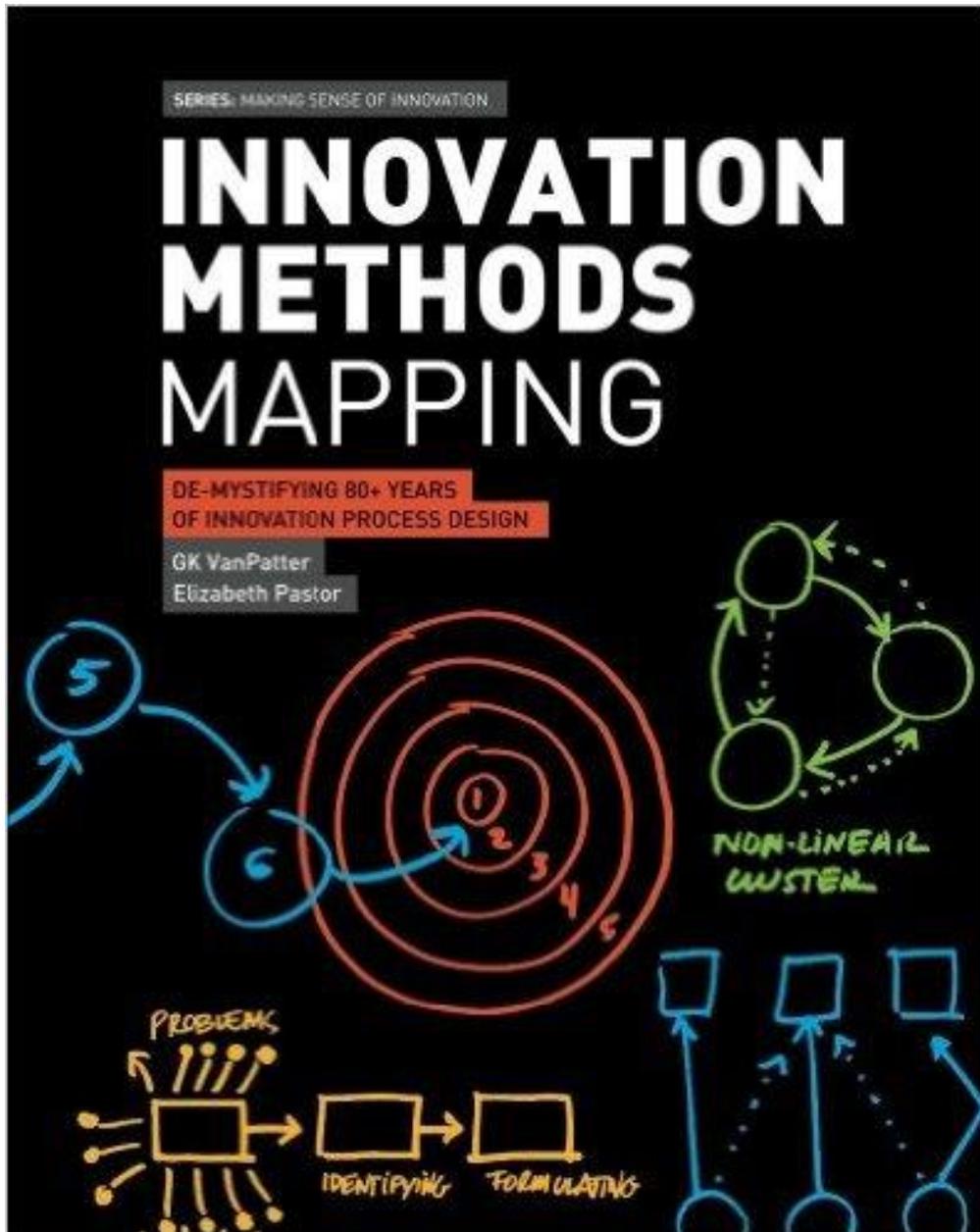
Humantific's new book: Innovation Methods Mapping has just been published and is now available on Amazon.
https://www.amazon.com/dp/1540788849/ref=sr_1_1?ie=UTF8&qid=1482329576&sr=8-1&keywords=Humantific
You can see the preview here:
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TRANSFORMATIONS
7 Roles to Drive
Change by Design

Joyce Yee / Emma Jefferies / Kamil Michlewski

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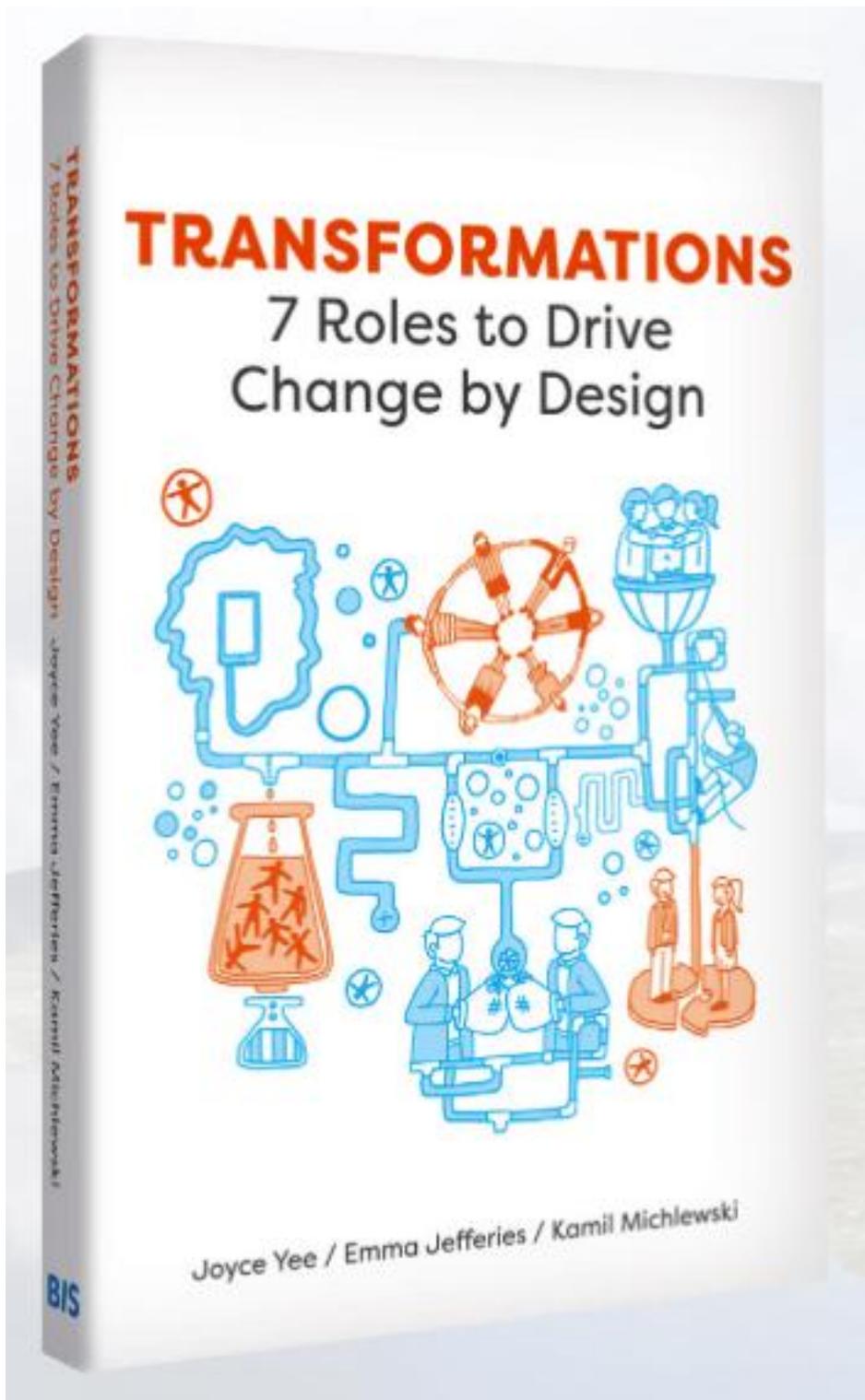
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Thank you for your interest in the book, 'The Design Journey of Prof. Sudhakar Nadkarni'. Few limited copies will be available for purchase on the day of IDC Alumni Meet, on June 11th, Sunday, 5:30 to 6:30 pm. Rest of the book orders will start shipping June 25th, 2017 onward.

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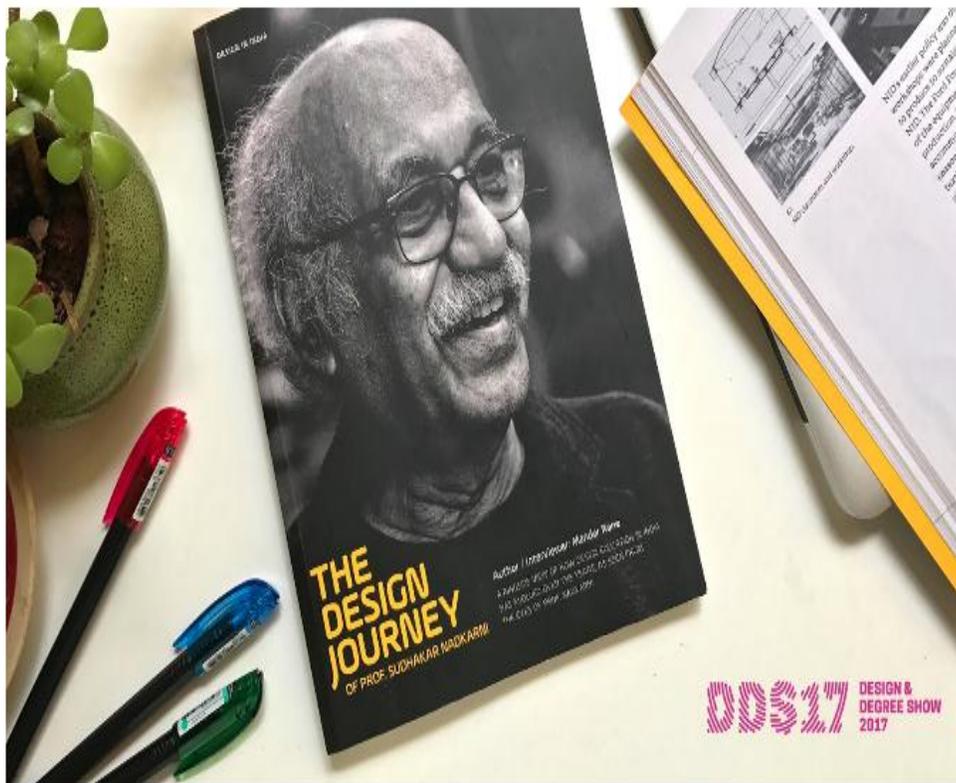
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Arnar Árnason and Sigurjón Baldur Hafsteinsson

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Universal Design: The HUMBLES Method for User-Centred Business
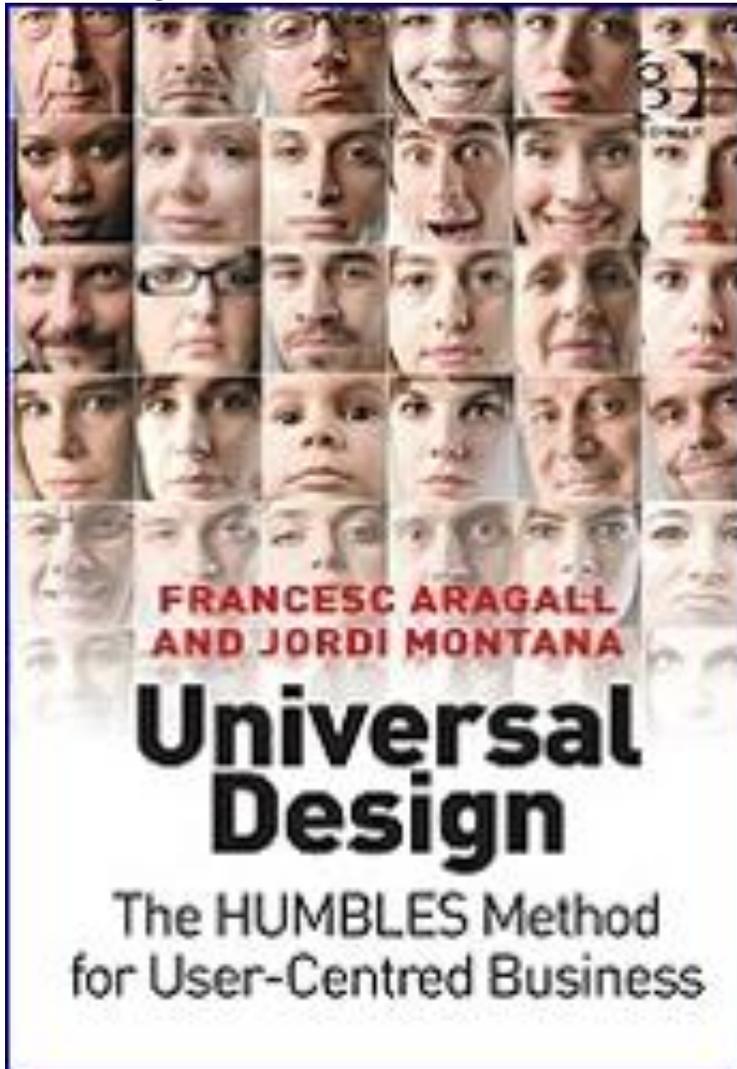
"Universal Design: The HUMBLES Method for User-Centred Business", writtenbyFrancescAragall and JordiMontañaandpublishedbyGower, providesaninnovativemethod to supportbusinesseswishing to increase the number of satisfiedusersand clients andenhancetheirreputationbyadaptingtheirproductsandservices to the diversity of their actual andpotentialcustomers, takingintoaccounttheirneeds, wishesandexpectations.

The HUMBLES method (© Aragall) consists of a progressive, seven-phaseapproach for implementing Design for All within a business. Byincorporating the user'spoint of view, itenablescompanies to evaluatetheirbusinessstrategies in order to improveprovideanimproved, morecustomer-orientedexperience, andtherebygain a competitiveadvantage in the marketplace. As well as a comprehensiveguide to the method, the bookprovidescasestudies of multinationalbusinesswhichhavesuccessfullyincorporated Design for All intotheirworkingpractices.

According to SandroRossell, President of FC Barcelona, who in company withotherleadingbusiness professionals endorsed the publication, it is "requiredreading for thosewhowish to understandhow universal design is the onlyway to connect a brand to the widest possible public, increasing client loyaltyandenhancing company prestige". To purchase the book, visiteither the **Design for All Foundation website**
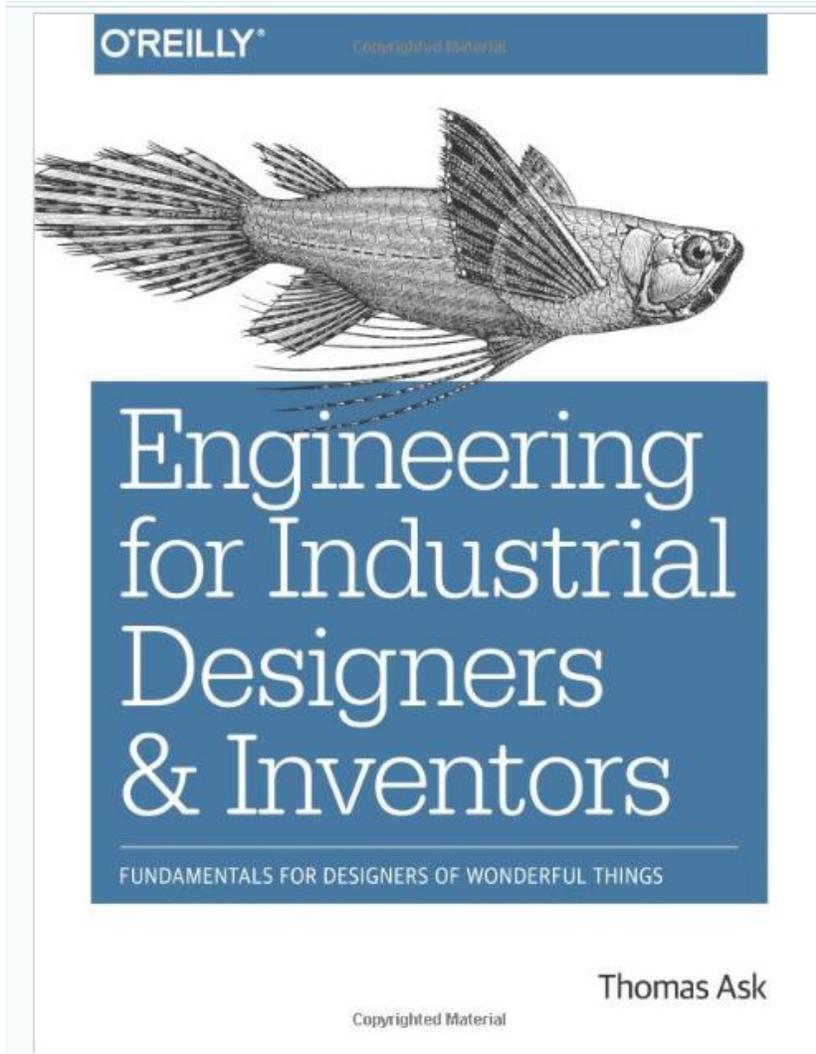
I have a new book that presents fundamental engineering concepts to industrial designers that might be of interest to you. This is the

link:

https://www.amazon.com/Engineering-Industrial-Designers-Inventors-Fundamentals/dp/1491932619/ref=sr_1_1?ie=UTF8&qid=1506958137&sr=8-1&keywords=engineering+for+industrial+designers+and+inventrs

News

1.

How Can We Design Truly Gender-Neutral Work Places

Dr. Pragya Agarwal Contributor**i**

The societal perceptions of gender are changing. Traditional male and female identities and roles are being questioned and re-defined. In the current gender and identity landscapes, it is very important that design of workplaces supports and enables the ownership and acceptance within this discourse of gender-fluidity.

Universal design encourages and promotes the accommodation of varying individual needs and preferences. Unfortunately, much of office design is still rooted in conventional parameters, particularly promoted by the Modernist movement, where most Architects were male, and

most leaders in organisations and in the boardroom were men. When there is a dominant group, the design is targeted at that particular group. There has always been a male bias in how offices are designed, how they look and how they feel.

UnsplashALVARO REYES

The solution is not, however, to create "feminine" spaces by using colours and typography that apparently appeal to women.

Research that shows that women work better in open plan offices is not universal. These kind of sweeping design decisions are once again pandering to gender stereotypes. We need gender-conscious design parameters that allow people to choose and express their individual preferences rather than segregate and discriminate as per gender or draw attention to differences.

UnsplashUNSPLASH

A clearly defined process for implementing a gender-diverse and gender-conscious design strategy can include the following:

1. Evaluate and review the existing workplace as per standards. Different countries have different building standards and best-practice regulations. Additionally, Universal Design principles provide a suitable

framework to start developing a gender-neutral design strategy, and to ensure that the design enables equitable use.

MORE FROM FORBES

2. Include consultation prior to, during and after the design process. It is important for the staff to feel heard. This will also ensure that there is open-mindedness around gender issues and identity in the workplace. Appropriate training for staff and awareness training ensures that they are able to prevent any potential conflicts.

3. Include signage that supports inclusivity, is clear and positive. Language can create confusion and miscommunication. Careful use of language that reinforces the gender-conscious and inclusive ethos, such as that emphasising the function of space rather than gender identity of users is important. Other ways to create inclusive language is by using phrases as per local social and cultural context, use of pictorial rather than verbal signage, and use of phrases that educate the users about shared spaces such as universal washrooms. Other ways to be careful is to employ and include transgender staff within the consultation process so that appropriate terminology is employed at all times.

4. Create a strategy for open active and passive monitoring. A regular review and evaluation process ensures that the staff demographic is updated and diversity is monitored.

UnsplashDESJARDINS

An inclusive workplace that offers the same opportunities for growth and productivity to all members of the staff, irrespective of gender, has to start from the top, and actively encourage this within its design as well as the company policies and ethos. The discussion has to begin from a clear understanding of what gender diversity and inclusivity truly means, and how that can manifest in the design of the physical environment.

It is also critical that there is flexibility to change and adapt as the community grows so that needs of different groups can be met.

Dr Pragya Agarwal
Creative and Social Entrepreneur, Designer, Writer and Speaker
CEO, The Art Tiffin
CEO, Hedge And Hog Prints
Advocating for equality, diversity and inclusivity

(Courtesy Forbes)

Programme and Events

Access Israel's 6th Annual International Conference on Innovation & The Future of Accessibility

29 April 2018 - Israel

Avenue Conference Center - Airport City

The DesignEuropa Awards celebrate excellence in design and design management among Registered Community Design (RCD) holders, whether they are individual right holders, small businesses or large enterprises. The Awards seek to recognise companies and designers that have brought outstanding design to the market with the support and protection of the RCD.

DESIGNEUROPA awards 2018

APPLY UNTIL 15 MAY!

Submit your application or nomination before 15 May 2018.

Voices of Good Design - What is Good Design?

Australia's only international design award program is open for entries, across 10 design disciplines and over 25 sub-categories.

Join us for the **2018 EDRA49 Annual Conference** in the **Oklahoma City, Oklahoma!** Walk along the streets of Oklahoma City, home to an attractive variety of historic buildings. Eye-catching religious buildings, and magnificent structures of great architectural and historic significance. **Stay tuned for registration to open in late Fall.** Check out what OKC has to offer, click here.

The weather in Toronto has warmed up and the IFA is preparing with anticipation to host over 1200 delegates from more than 75 countries in August 2018.

Human-Work Interaction Design (HWID'18) - Designing Engaging Automation
5th IFIP WG 13.6 Working Conference
August 20-21, 2018

Aalto University, Espoo, Finland

In continuation with the series of the Human Work Interaction Design working conferences, the fifth edition will take place in Espoo, Finland, on the 20th and 21st of August, 2018. The venue is the brand new building of School of Arts, Design and Architecture in Aalto University, Otaniemi campus.

Important dates:

Full paper submission deadline: April 2nd

Poster submission deadline: April 30th

Acceptance notifications: May 11th

Early bird registration deadline: May 31st

Conference: August 20-21, 2018

Theme, Scope and Focus:

This year's theme is Designing Engaging Automation. While we do not exclude other aspects of work analysis and designing interactions for work contexts, we encourage authors to share especially their research on human aspects in workplace automation in the 2018 edition of HWID conference.

Interaction design for work engagement has lately started to gather more attention, especially in designing tools for employees. Work engagement takes usability of interactive systems to the next level by providing employees pleasurable and meaningful experiences via the tools used at work. The theme of HWID'18 emphasizes the need for providing these experiences also when parts of the work are automated.

Examples of relevant questions include:

Is automation making work less interesting or more engaging?

How to improve work engagement by automation?

How to share work optimally between humans and automation?

How to maintain operator vigilance in highly automated environments?

How to support situation and/or automation awareness?

How to evaluate the impact of automation on work engagement?

This working conference aims to answer these questions to support professionals, academia, national labs, and industry engaged in human work analysis and interaction design for the workplace. We will discuss the tools, procedures, and professional competences needed for designing for and evaluating engaging automation in workplace contexts.

We invite two types of submissions:

Full papers (max 15 pages, excluding references) and

Poster submissions (max 4 pages, excluding references).

For both types of submissions, the authors must use the LNCS templates available from **Springer**. Please submit your work in PDF format to **EasyChair**.

All accepted papers will be published in the working conference proceedings in the form of an electronic copy with ISBN and made available to the participants. During the review process, the reviewers are asked to evaluate whether the paper is suitable for a HWID's Springer book (Springer-Verlag) that will be made available after the conference. We aim at most accepted full research papers to be included here, but also the possibility to have a very interesting perspective from industry or similar represented.

Conference web site: **https://blogs.aalto.fi/hwid2018**

Global Architecture & Design Awards
Architecture | Interior | Landscape | Urban Design | Product Design

rtf GLOBAL ARCHITECTURE AND DESIGN AWARDS 2018

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OPEN TO ALL   ENTRY FREE FOR RTF MEDIA LAB MEMBERS

universal design CONFERENCE

4-5 September 2018
Brisbane
Convention and
Exhibition Centre

TRANSED TAIPEI 2018

15th International Conference on Mobility and
Transport for Elderly and Disabled Persons
(TRANSED 2018)

Mobility for all:
Connecting the World with Accessible Transportation

November **12** ▸ **15**, 2018

TAIPEI INTERNATIONAL CONVENTION CENTER (TICC)
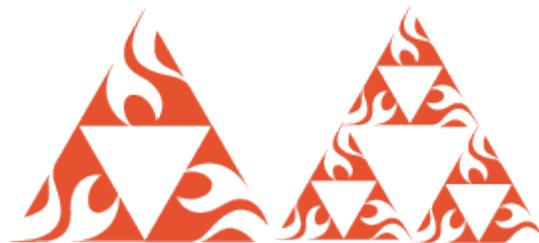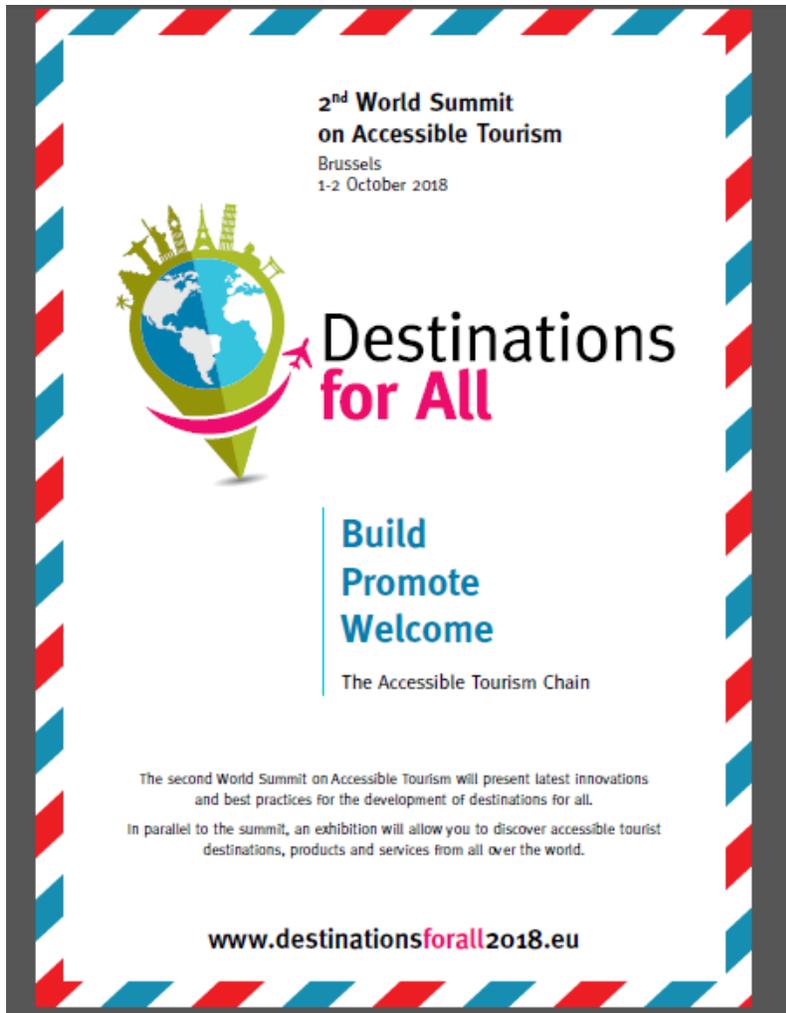
'Expo CD'
3 Day Workshop:
'Communication Design for IT and Media Professionals'
19th- 21st July 2018 from 9.30am - 5.30 pmat IDC School of Design, IIT Bombay

 Introduction:

The course Expo CD is a refresher course on the finer aspects of Communication Design specifically meant for IT

and Media Professionals..

The course will inform the participants about the overall aspects of Communication Design for the Digital Media, a deeper understanding of Communication Graphics, Methods for Structuring and Visualisation of Information as well as exposure to creative processes for solving communication problems.

The subjects covered during the workshop include - Typography for Digital Media, Expressive Typography, Typography for the Web, Information Graphics, Information Visualisation, Communication Graphics, Icon Design, Design Process, Design Methodology, Interactive Design, Identity Design, etc..

The course is scheduled to have lecture and discussion sessions in the morning followed by workshops on Communication Design related creative problem solving sessions in the afternoon

International Architecture Awards

One of the most famous Architecture Awards across the globe, International Architecture Awards hosted by Architecture Podium brings its winners to the top in the industry. Some of the previous winners include Aedas, TerreformOne, Rockwell Group, Pepe Gascon Arquitectura, Nadaaa etc. International Architecture Awards offer 30+ Categories under three groups' i.e.; Architecture, Interior Design and Product Design.

Participate Now

The Aga Khan Award for Architecture

The Aga Khan Award for Architecture

The Aga Khan Award for Architecture (AKAA), established by Aga Khan IV in 1977, is awarded every three years to an architectural project that meets the needs and preferences of Islamic societies. The Award seeks to identify and encourage architectural concepts in the fields of community development, area conservation, contemporary design, preservation of the environment and landscape design.

Participate

SparkNewsNow · Live Large · Enter Today · Spark Awards · All Design · All Designers

Spring Edition - 05/01/2018 - New York, Seoul, Paris & Milan

2018 Spark Design Awards Are All Underway

All the various Spark Awards are welcoming entries now. They include 12 design specialties, so there's sure to be a good fit for your work.

GLOBAL ARCHITECTURE AND DESIGN AWARDS 2018

Schedule:
Registration Begins. 15 Mar, 2018

International Architecture Awards 2018

After the huge success of previous International Architecture Awards, Architecture Podium is announcing IAA 2018. Architecture Podium created one of the largest awards in architecture and design with some of the esteemed studios as winners like Aedas, TerreformOne, Rockwell Group, Pepe Gascon Arquitectura, Morphogenesis, Dada & Partners, Nadaaa, XTEN Architecture, Mecanoo, ABIBOO Architecture and many more from across the globe making IAA one of the most successful awards.

The GQUAL Campaign, the International Disability Alliance and the International Disability and Development Consortium call upon States Parties to promote gender balance as well as quality and independence among the experts within the elections for the Committee on the Rights of Persons with Disabilities (CRPD Committee). On June 12th, 2018, during the XI Conference of States Parties (COSP) to the Convention on the Rights of Persons with Disabilities, States Parties will elect 9 experts to the CRPD Committee.

2018
Breakthrough and Innovation
臺灣國際學生創意設計大賽
Taiwan International Student Design Competition

May.15 — July.16

CALLING ALL DESIGN STUDENTS - ENTER TISDC TODAY!

Free to Enter | Registrations Close 16 July 2018 | Cash Prizes

We invite you to participate in the 2018 Taiwan International Student Design Competition (TISDC), the most participated International Student Design Competition in the world!

Te Ao Tangata
Inclusive by Design

Universal Design Conference
6-7 September 2018
Victory Convention Centre, Auckland

Expo PDi

http://www.dsource.idc.iitb.ac.in/events/idc-events/expo-pd-in-2018.html
3 Day Workshop:
Exposure to Product Design and Innovation

23rd - 25th August 2018 from 9.30am - 5.30 at IDC School of Design
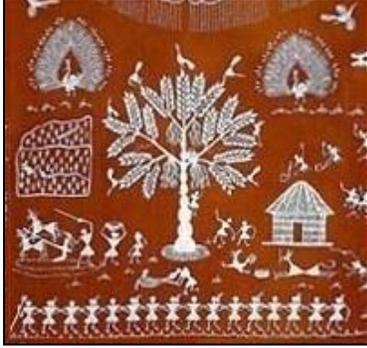
Job Opening

Job Openings

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