Post Urban Living Innovation

Mexico & Japan 2017

Introduction & Objectives of PULI Program

The Post Urban Living Innovation Education and Research Program uses technology to take on the challenges posed by the various issues facing human life. The project will focus on the situations in Japan and Central America to clarify the challenges faced by the world's urban areas, and will develop human resources in both countries who will contribute to living innovation in the future.

One large problem shared by the world's urban lifestyles is related to urban overcrowding. Accepting a rapid influx of a population that grows as its nation's economy develops causes the provision of things like housing and transport infrastructure to fall behind, forcing many people to live in horrible conditions. These are issues that both developed nations and developing nations have in common. This program will implement a next generation, practically-versed human resources development program (Post Program) jointly in Japan and Central America, to develop superior human resources with practical experiences who will contribute to the future.

Three main programs were developed combining business planning, sales strategies and technology.

PULI 001 PULI 002 PULI 006

Profesors & Tutors

Universidad Panamericana
Professor Luis Arturo Méndez Alba

Tecnológico de Monterrey, CCM
Associate Professor David Sánchez Monroy

Universidad Autónoma de México
Associate Professor Julián Covarrubias Valdivia

Tecnológico de Monterrey
Associate Professor Alejandro Martínez Baca

Universidad de Monterrey
Associate Professor Carlos Ramírez Paredes
Assistant Professor Mariana Berenice Alvarado

Chiba University
Professor Shinji Watanabe
Associate Professor Kenta Ono
Assistant Professor Algirdas Paskevicius
Research Assistant Juan Carlos Chacón
Research Assistant Hisa Martinez Nimi

Organizers & Coordinators

Chiba University
Director of PULI Program / Professor Makoto Watanabe
PULI Program Coordinator Mitsuhiro Motozawa
PULI Program Assistant Keiko Sugita
PULI Program Assistant Emi Takamori

KB FOAM Inc.
CEO Keita Kasahara

PULI Program Development Process & Timeline

Planning & Research October 2016 | **Workshop in Mexico** February 2017 | **Workshop in Japan** March 2017 | **Design Development** May 2017

PULI 001

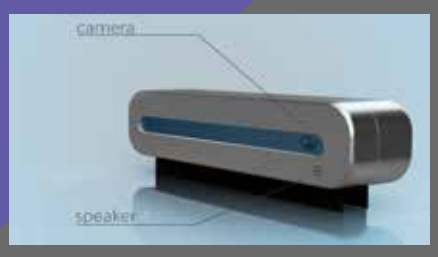
Design Against Crime & ICT for Future House

Seven final concepts of security system & applications were developed during the program.

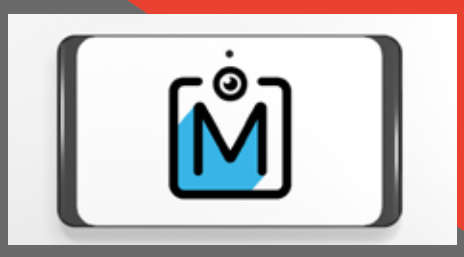
1. Nuni Smart System

2. Camminare Security Application

3. Dopoli Report System

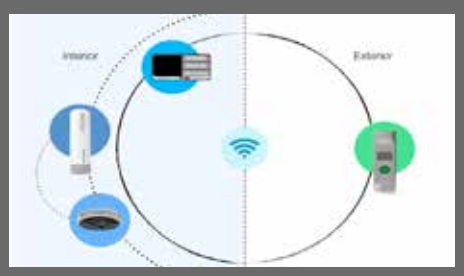


4. Lupita Smart System



5. Mim Intelligent Doorbell

6. Safety Circle Security Application



7. Community Security System

Design Solutions for Crime Prevention

Students specializing in industrial design from Tecnológico de Monterrey, Universidad de Monterrey and Chiba University participated in the workshops and created ICT design proposals to solve the security problems in Mexico according to the theme of Design Against Crime. Following the procedures of a Design Against Crime methodology and through the implementation of Crime Situation Framework and Crime Life Cycle, participants were able to propose innovative and evidence based ICT design concepts, that generate solutions for Mexican crime problems.

Chiba University
Hiroki Tanaka
Yuri Kubota
Kosuke Aida
Keigo Hashimoto
Tatsuhiro Shida
Ryosuke Oshima

UDEM
Maya Kawashima
Mauricio Martinez
Pamela Sánchez
Diana Chapa
Irma Mendoza

UNAM
Jalil Rescalvo
Karen Noguez
Elena Valderrama
Rafael Gutierrez
Juan Pablo Ramírez

Tecnológico de Monterrey
Mauricio Juarez
Margarita Villareal
Paola Villareal

1. Nuni Smart System
Nuni is a security system focused on house and street robbery that connects every part of the community through smart devices, promoting communication and interaction to strengthen bonds among them, it works as a protective shield connecting links between family members, community members and the security company through ICT devices.

2. Camminare Security Application
Camminare is a security application that allows pedestrians to walk accompanied by increasing safety perception at night as well as trying to prevent assaults. It provides the user with the safest route possible inside his/her community. Lastly, in case of an incident, it gives instant connection with the user's emergency contacts and security company.

3. Dopoli Report System
Dopoli is a security system based on the communication as a community. Dopoli focuses on improving the negative image of the police. Therefore increasing the number of reported crimes by improving the communication between community members and police.This system is managed by police using an application that features a interactive virtual pet.

4. Lupita Smart System
Lupita is an AI assistant that can do the community leader's task instead of the organic community leader. Lupita is installed on the TV and It constantly asks to their family whether you have some problem about community or a problem related to security.

5. Mim Intelligent Doorbell
Mim is an intelligent doorbell that would take care of your house and your neighbors houses at all times. Mim would be able to look at everyone near your home, identify using face recognition technology who is part of your community and who is not. Using this information, it would be able predict and prevent potential house robbery.

6. Safety Circle Security Application
Safety Circle is an innovative security application that helps you before, during and after any assault. In summary, it activates a "circle" around you, so anyone suspicious entering that "circle" can be detected and notified. Simple, but efective. This system was designed to be accessible to the majority of the population in Mexico.

7. Community Security System
Community is a technological system for ensuring communal safety by encouraging the cohesion, participation and integration among its members. It's integrated by four main ICT components, designed to guarantee safety in different in public and private environments.

PULI 002

New World by Hydrogen 2040

Students developed various concepts and proposals of hydrogen use in the future.

1. Haro Educational & Storage Center

2. H2 Shared Mobility

3. Xaha Cleaner Robot

4. New Bussiness Transportation

5. Hydrogen Tankroid

6. OFF Site Hydrogen World in Urban Area in 2040

Future of Hydrogen in Mexico & Japan

Students from Tecnológico de Monterrey CCM, Universidad Nacional Autónoma de México and Chiba University participated in the program and several workshops in Mexico and Japan with the general objective to generate new concepts and proposals for New World by Hydrogen in 2040.This program concentrated on energy management system by using hydrogen as the energy of the future. During this program students considered the utilization of hydrogen energy after 20 years from now. Finally, teams of students suggested products and services for a comfortable life, while promoting the use of hydrogen energy in Japan and Mexico.

Chiba University
Sumire Kuroda
Moeko Okabe
Koichi Kawashima
Yuki Kodama
Hayato Watanabe
Junki Matsuo

UNAM
Mia Modak
Marisela Sanabria
Federico Capogrossi

Tecnológico de Monterrey CCM
Luis Lira
Fernanda Rodriguez
Mauricio Monroy

1. Haro Educational & Storage Center
It is an educational and storage center that intends to educate and involve Mexicans in the eco-sustainable culture for the 2040 context in Mexico. Through the use of virtual reality technology, the benefits of using hydrogen will be projected inside of Haro.

2. H2 Shared Mobility
It uses energy stored for hovering and transmitting wireless power. Hovering makes you move freely without situation of ground. You can move on wastelands, rocky places, oceans and lakes. Wireless power can make living more active. In 2040 hydrogen will let you to move easily anywhere just with water.

3. Xaha Cleaner Robot
Xaha is a cleaner robot that collects all garbage in the surface of sea near the harbours and beaches. This robot is powered by hydrogen and needs to return to the harbour, so designated workers can take out the garbage and the robot can keep collecting more garbage. The main objective is to reduce the amount of garbage in the sea.

4. New Bussines Transportation
A container departures from the factory over an autonomous platform with power supply by hydrogen where is coordinated by a self-driving convoy. These convoys are led by cabin with 2 functions: energy eficiency and aerodynamics purposes for supplying energy (H2) for longer distances.

5. Hydrogen Tankroid
This tank is robot and generates electricity from hydrogen and sends it to some devices by using wireless technology. It waits everywhere and comes if we call. And it follows a person. So we can get and take it anywhere. Hydrogen Tankroid can make a free energy space anywhere.

6. OFF Site Hydrogen World in Urban Area
The city doesn't have a ground enough. So, we arrange this solar panel on the sea to cover the power consumption of the city area. And, this module work not only to generate H2 energy, but also can be a seaside station where ship can stop to rest. Solar panels can change in various forms and could be placed in sea, lake and river.

PULI 006

Container House Development

Students developed interesting proposals of container house, hotel and office.

1. Container Inn

2. Game X for Crazy Gamers

3a. Stars Lovers Container House

3b. Star Lovers interior view

4a. Tech Trailer park front view

4b. Tech Trailer park back view

Container House as a Symbol of Innovation

Students worked together and aimed to create not only a simple container house, but also a new possibility for container living. The projects were conducted in Japan and Mexico in collaboration with KB FOAM Inc. The project was based on an idea to make houses for employees in Tijuana. The main objective of the project was to create container houses as a symbol of innovation instead of simple container houses for poor people. Through three different type of workshops, students did their research and gained knowledge about container housing. Another objective of this project was to learn about Japanese and Mexican cultures and by doing it, students were able to work together and make better designs. Finally, each team suggested some new possibilities about how to use container house in the near future.

Chiba University
Tsukasa Nakano
Yuka Ito
Soichiro Iwai
Takafumi Kikuno
Reina Nakajima
Koki Takahashi

Universidad Panamericana
Oscar Avalos Ruiz
María José Armendariz
Ana Belem Rivera

1. Container Inn
The concept is a container hotel that would be movable by a trailer truck to any location. This movable hotel could offer affordable stay, basic comfort, safety and protection, as well as a place for sanitary needs and storage.The present proposal has 8 single rooms and 6 double rooms, all with essential facilities like a confortable bed, baggage storage, folding table, TV set, air conditioning, mini fridge, lighting and Wi-Fi. The whole system is operated by a coin collector. Visitors will save time and money while covering the basic needs during nice stay.

2. Game X for Crazy Gamers
We provide Game X container house with all walls and ceiling as a big screens as part of a complete and interactive experience. Gamers can use it as second house to play games. All facilities of Game X are made at factories and transported to each customer. Then, it will be sold as a finished product and they do not need to do any modification of their house.

3. Stars Lovers
Star Lovers like to observe sky at night by using telescope. It is important for them to find the best observation spot. And by using the container house, Star Lovers can move everywhere and enjoy stars. This container house is easier to customize than a normal house by changing the ceiling into transparent material like glass to see the sky full of stars. And outdoor observation depends of weather condicion. But container house is confortable for observation at any time. We can summarize the usage of container into four merits: Movable, Professional, Easy to customize and Enjoy long time.

4. Tech Trailer Park
This project offers some characteristics that make the concept unique and different compared to container house, restaurant or training center.The use of space is flexible due to movable furniture and wall dividers. It is possible to have personal workstations and meeting rooms in the same space. Trailer would be transformed and adapted as the laboratories for technological development and rented to the invited companies.