



Urban Planning Unit
International Academic Consortium for Sustainable Cities

IACSC 2022 Urban Planning Unit International Student Forum Report

Universiti Sains Malaysia
Vietnam National University, Ho Chi Minh City
Hasanuddin University
Thammasat University
Yokohama City University

Towards the Digital Urban Era



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はじめに Foreword



マレーシア科学大学 住宅・建築・計画学部・講師
ディアナ・モハマド

Diana Mohamad

Senior Lecturer,
School of Housing, Building and Planning,
Universiti Sains Malaysia

The Urban and Regional Planning Program (of School of Housing, Building and Planning) at Universiti Sains Malaysia is designed to meet the professional needs of the Malaysian Town Planning Board (LPBM) and industry in the Built Environment sector at home and abroad, to make the School as a one stop centre in generating capable and skilled human capital to meet the needs of the construction industry. Our engagement in this IACSC program has offered wonderful platform to expose our students to their international counterparts. Taking parts in international-level discussions and brainstorming sessions always work wonder in helping students to develop their observation, analysis and interpretation skills. Throughout the event, we can see students steadily transforming themselves into a more mature individual who now views and predicts urban planning at the global perspective and interprets it in a way that it suits locals the best. More importantly, it is imperative to point out the unique 2021's IACSC arrangement where groupings are made of students of different universities has took critical thinking analysis to a new level. Not only having to understand what is happening on the ground back home, now students are challenged to weave all the information gathered from their counterparts on what is happening on other parts of the world before they are able to come up with solutions for a better environment, for a better future, for a better world.



ベトナム国家大学 都市社会人文学部・講師
グエン・ビン・ミン

Nguyen Binh Minh

Lecturer, Faculty of Urban Studies, University of Social Sciences and Humanities,
Vietnam National University Ho Chi Minh City

The IACSC (International Academic Consortium for Sustainable Cities) network has a history of development since 2009. Over the years, the Faculty of Urban Studies (FUS) - University of Social Sciences and Humanities (USSH) - Vietnam National University (VNU) has always been an active participant and co-organized many professional and academic activities in the IACSC network. International Student Forum under the IACSC 2022 network with the main theme "Toward the Digital Urban Era" was held online. As of 2021, student groups have one month to prepare a report on the previously suggested topic. In addition, the organizers also provide video lectures by lecturers with each corresponding topics to support students in the research process. Attending the program were 3 students and 2 graduate students of the Faculty of Urban Studies, including Pham Minh Tam, Luu Chi Cuong, Truong Pham Phuong Nam, Pham Linh Chi, and Nguyen Khoa Dieu An. Students of FUS and students of Yokohama City University, Thammasat University, Hasanuddin University, and Universiti Sains Malaysia discussed 7 main topics about applying digital technology to solve problems related to minimum waste, traffic congestion, walkable city, food sharing community, quality of sidewalks, disaster management, public transport. This year is the second year the course was held in the form of online. Students of FUS consider International Student Forum to be a useful course, providing many necessary knowledge and skills for international integration in the digital era. FUS would like to thank the organizers for creating favorable conditions for our lecturers and students to participate in this program. Looking forward to seeing all of you again in 2023 when the course will be held offline.



ハサヌディン大学 工学部 都市地方計画学科・助教
イスファ・サストラワティ

Isfa Sastrawati

Assistant Professor,
Department of Urban Regional Planning,
Faculty of Engineering, Hasanuddin University

Starting from learning online video lectures, students of the Urban and Regional Planning Bachelor Study Program - Hasanuddin University collaborated with students from other universities to involve actively in preparing research proposals. They discussed and worked in groups online related to the theme "Toward the Digital Urban Era". By conducting a literature review and describing conditions in their respective countries, all students can gain new knowledge about digital-based urban planning. So that the concept of smart urban planning that is implemented in integration and coexisting with technology can be understood easily. This student forum delivers students to communicate internationally, share information, and exchange ideas with students from different national backgrounds without mobility. At the end of this program, they were given the opportunity to take part in international seminars with virtual presentations. I hope that this program can continue so that the academic collaboration between the universities involved is getting closer and the students have broader insights into urban planning issues globally.



タマサート大学 建築都市計画学部 UDDI プログラム・インストラクター
テドポン・ブーンパン

Terdpong Boonpan

Instructor, Urban Design and Development International Program (UDDI),
Thammasat University

Over the years of the covid-19 pandemic, every person around the world can see the positively powerful disruption of Digitalization, the use of digital technologies to change a traditional process of workflow of things; production, logistic, education, Etc., and provide new revenue and value-producing opportunities. We are moving forward to a truly digital era. It helps improve among many processes to be easier, smoother and more efficient. Especially today's tech-driven world is taking a role to adopt a digital culture in order to survive and succeed. Moreover, it can reduce uncertain impact for people and for the environment in this disorderly world. The adaptation of the people is the most important to retain our society. The International Academic Consortium for Sustainable Cities (IACSC) is one of an academic network which is utilizing digital technologies to keep the advocacy by continuing connections between academic institutions and local municipalities to serve the realization of sustainable cities. As seen throughout the years of establishing until now, even in the year of the covid-19 pandemic, in order to use the digital technologies, our cooperation and activities have been continuing smoothly. It seems like this unforeseen event cannot ruin our opportunity to connect many faculties globally and create the benefit for student's self-development and networking toward the Digital Urban Era.



横浜市立大学国際教養学部・教授
鈴木 伸治

Nobuharu Suzuki

Professor, School of International Liberal Arts,
Yokohama City University

新型コロナウイルス感染症によって、今年もオンラインでのワークショップとなった。大変残念ではあるが、オンラインでもワークショップが可能となったことも、大きな進歩であると言えるだろう。

コロナによって、われわれの生活習慣は大きく制限をうけることとなった。しかし一方で、デジタルトランスフォーメーションが都市に大きな影響を与えることがわかってきた。

今回のワークショップのテーマは、これからの都市を考える上で、とても重要な課題を含んでいました。最終的な提案にはとても優れたアイデアが含まれていたように思います。短期間のワークショップの成果としては、素晴らしいかったと心から思います。

一方、デジタル化によって可能となること、そうではないことを改めて考える必要性も感じました。都市のデジタル化によって空間がどう変わるか、人と人との関係がどのように変わるか。若いみなさんの世代はこの問題に直面していくことになります。今ある都市とその計画をいかにアップデートできるのか。みなさんのこれからの挑戦と活躍を期待しています。

Due to COVID-19, this year's workshop was again held online. While very disappointing, the fact that the workshop is now also available online is also a significant step forward. COVID-19 has greatly restricted our lifestyles, but we have also learned that digital transformation greatly impacts cities.

This workshop's theme included important issues for the future of cities. I think the final proposals contained some very good ideas. I sincerely believe that it was an excellent outcome of the short workshop. On the other hand, I also felt the need to rethink what is and is not possible through digitalization. How will the digitalization of cities change space and the relationships between people? Your generation of young people will be faced with these issues. How can we update the current cities and their plans? I look forward to your future challenges and activities.



横浜市立大学国際教養学部・教授
中西 正彦

Masahiko Nakanishi

Professor, School of International Liberal Arts,
Yokohama City University

2022年度の国際学生ワークショップは、COVID-19を考慮して、昨年に引き続きオンラインでの開催としました。直接の交流に比べて、オンラインでの交流は不利なことも多く、苦渋の選択ではありました。しかしそれにもかかわらず学生たちが主体的に参加し、交流と実践を力強く進めてくれたことは幸いなことでした。また、COVID-19で情報化が促進されたことを逆手に取って本ワークショップのテーマを「デジタル時代の都市づくり」としたことは、開催方法との相乗効果によって、積極的な議論と興味深い成果を生むことにつながったと思います。

本ワークショップの成果は、IACSCの総会で発表した他、横浜市国際局が毎年主催しているアジアスマートシティ会議でも、交流セッションにて発表することができました。これも学生たちには得難い経験になったことでしょう。

今回の開催にあたってご協力いただいた関係諸氏に深く感謝します。また、参加した学生たちには、ぜひ将来直接同じチームの他国のメンバーと会い、交流を続け、深めていくことを期待します。

In consideration of COVID-19, we decided to hold the 2022 International Student Workshop online, as we did last year. Compared to in-person interactions, online interactions were often disadvantageous, and this was a difficult choice. Nonetheless, we were fortunate that students proactively participated and strongly promoted exchanges and practices. In addition, taking advantage of the fact that informatization was promoted during COVID-19, the theme of this workshop was "Urban Development in the Digital Age," which I believe led to active discussions and interesting outcomes due to the synergy with the way the workshop was held. The results of this workshop were presented at the IACSC general meeting, and also at the Asia Smart City Conference, which is hosted annually by Yokohama International Affairs Bureau, in an exchange session. This must have been an invaluable experience for the students. We would like to express our deepest gratitude to all those involved for their cooperation in organizing this event. We also hope that the participating students will meet directly with members of the same team from other countries in the future and continue and deepen exchanges with them.



横浜市立大学 グローバル都市協力研究センター 特任助教

大森 文彦

Fumihiko Omori

Assistant Professor

Global Cooperative Institute for Sustainable Cities,
Yokohama City University

今回、オンラインによるプログラムも2年目を迎え、IACSC加盟大学の先生方のご協力に感謝いたします。また、参加してくれた学生達にも感謝します。

新型コロナウイルス感染症が収束しつつありますが、感染症によって変わったライフスタイルや働き方は、今後もある程度残っていきます。その大きな一つがデジタル技術の活用です。パンデミック下で、多くの人が新たな技術やサービスを初めて活用することを迫られました。私達はオンラインで交流して、このようなプログラムを5カ国同時に進めることが出来ました。デジタル技術は時間や距離を超えることが出来ます。こうした技術を受け、積極的にまちづくりに活かしていく視点が今後求められます。

このプログラムで学んだ経験や、海外の友人との関係を、今後の人生に生かして欲しいと願っています。いずれ、みなさんとリアルに横浜でお会いできることを楽しみにしています。

This is the second year of the online program and we would like to thank the professors of the IACSC member universities for their cooperation. I would also like to thank the students who participated in the program. Although COVID-19 is now under control, the lifestyles and ways of working that have been changed by the disease will remain to some extent in the future. One of the major ways is the use of digital technology. Many of us were forced to use new technologies and services during the pandemic for the first time. We were able to interact online and facilitate such a program in five countries simultaneously. Digital technology can transcend time and distance. We need to take a viewpoint that does not avoid such technologies but proactively utilizes them in urban development. I hope that you will make the most of the experiences you gained through this program and the relationships you formed with your friends overseas in your future lives. I look forward to seeing you all in Yokohama in the future.



IACSC

IACSC とは

About IACSC

持続可能な都市づくりのための国際アカデミックコンソーシアム (IACSC) は、学術機関やそれらが立地する都市間の協力関係を深化させ、持続可能な都市づくりに貢献することを目的に2009年に創設された学術ネットワークです。国際機関等の支援を受けながら、アジアを中心とした都市の大学研究者・学生等が相互に連携し、情報やリソースの共有、議論、調査、研究、プロジェクトを実施します。都市の諸問題の解決に取り組み、地域や世界に貢献することを目標とし、「まちづくり」「環境」「公衆衛生」の3つのテーマで活動を展開しています。

まちづくりユニットでは、2010年より国際シンポジウムや学生ワークショップの開催を通して、アジアの大学との交流を進めています。

The International Academic Consortium for Sustainable Cities (IACSC) is an academic network established in 2009 with the purpose of fostering closer cooperation between academic institutions and local municipalities to serve the realization of sustainable cities. With support from international organizations, we will promote mutual cooperation among faculties and students through discussions and research projects. These will be conducted under three main themes: Urban Planning, Environment, and Public Health.

Urban planning Unit has promoted good communication between our friends in Asian universities by holding international symposium and students workshop since 2010.

1

学生フォーラム概要 Student Forum Overview



Towards the Digital Urban Era

デジタル都市の時代に向けて

Introduction

COVID-19, which has spread worldwide since 2020, has not only impeded human interaction but has also paralyzed some urban functions. On the other hand, the use of various information technologies has led to the rapid growth of a variety of services that do not involve physical contact, and these services have taken root. In addition, workstyles and lifestyles such as telework and two-location living have become widely accepted, and the functions and structures required of cities are changing.

The use of digital technology is inevitable when considering the future of urban development, and its active use is required. However, planning technologies and legal systems, such as urban planning, have yet to respond to this technological evolution. The term "smart city" conjures up images of large-scale urban remodeling, but in reality, the use of digital technology in cities often involves the accumulation of very small improvements and changes in behavior in ways that are not always visible. The accumulation of such small social experiments and short-term improvements is one of the strengths of digital technology.

In this year's program, each team will discuss common issues faced by cities in their respective countries and propose countermeasures not only through physical measures such as civil engineering and architecture but also through the use of digital technology. The legal systems of civil engineering and architecture in each country differ greatly, but digital technology has the potential to provide common solutions. We expect that students from each country participating in this program will carefully address urban issues by sharing their experiences and knowledge with each other, transcending differences in nationality and expertise.

本プログラムの紹介

2020 年より全世界に感染が拡大した新型コロナウイルス感染症は、人と人の交流を阻害するだけでなく、一部の都市機能を麻痺させる事態を招きました。一方で各種の情報技術の活用によって、物理的接触を伴わない様々なサービスが急成長し、そのまま定着しています。またテレワークや二拠点居住などのワーク・ライフスタイルが幅広く受け入れられるようになり、都市に求められる機能や構造が変わりつつあります。

こうしたデジタル技術の活用は、今後のまちづくりを考えていくにあたって、避けては通れず、むしろ積極的な活用が求められています。しかし、こうした技術進化に対して、都市計画などの計画技術や法体系は未だ対応できていません。いわゆるスマートシティという大掛かりな都市改造のイメージがありますが、実際の都市におけるデジタル技術の活用は、非常に小さな改善の積み重ねや、目に見えないかたちでの行動の変化といったものである場合が多いと言えます。そうした小さな社会実験や短期的な改善の蓄積が、デジタル技術の強みでもあるのです。

今年のプログラムでは、各チームにおいて、各国の都市が抱える共通課題を議論し、土木や建築といった物理的な対応だけでなく、デジタル技術を活用した対策を提案します。各国の土木・建築の法体系は大きく異なりますが、むしろデジタル技術は共通したソリューションをもたらす可能性を持っています。本プログラムに参加する各国の学生は、国籍や専門性の違いを越えて、お互いの経験と知識を出し合うことで、都市の抱える課題に対して丁寧に取り組んでいくことを期待します。

Purpose

- Know the issues happened in Asian Cities by video lecture.
- Discuss about the issues by inter-university workshop.
- Express the ideas by presentation.

目的

- アジア各都市で起きている問題についての把握
- 大学混成のチームによる課題解決のためのディスカッション
- 課題解決のためのアイデアの発表

Period

from July to November, 2022

期間

2022 年 7 月～11 月

Participants

Students

- 10 students from USM (Universiti Sains Malaysia)
- 5 students from VNU (Vietnam National University, Ho Chi Minh City)
- 10 students from UNHAS (Hasanuddin University)
- 3 students from TU (Thammasat University)
- 16 students from YCU (Yokohama City University)

Faculty Members

- 1 faculty from USM
- 1 faculty from VNU
- 1 faculty from UNHAS
- 1 faculty from TU
- 3 faculties from YCU

参加者

学生 44 名

- マレーシア科学大学 10 名
- ベトナム国家大学ホーチミン市校 5 名
- ハサヌディン大学 10 名
- タマサート大学 3 名
- 横浜市立大学 16 名

教員 7 名

- マレーシア科学大学 1 名
- ベトナム国家大学ホーチミン市校 1 名
- ハサヌディン大学 1 名
- タマサート大学 1 名
- 横浜市立大学 3 名

Deliverables

- Presentation slides by inter university teams (7 teams)

成果物

- 大学混成チームによるプレゼンテーション資料

研究テーマ 7 research topics

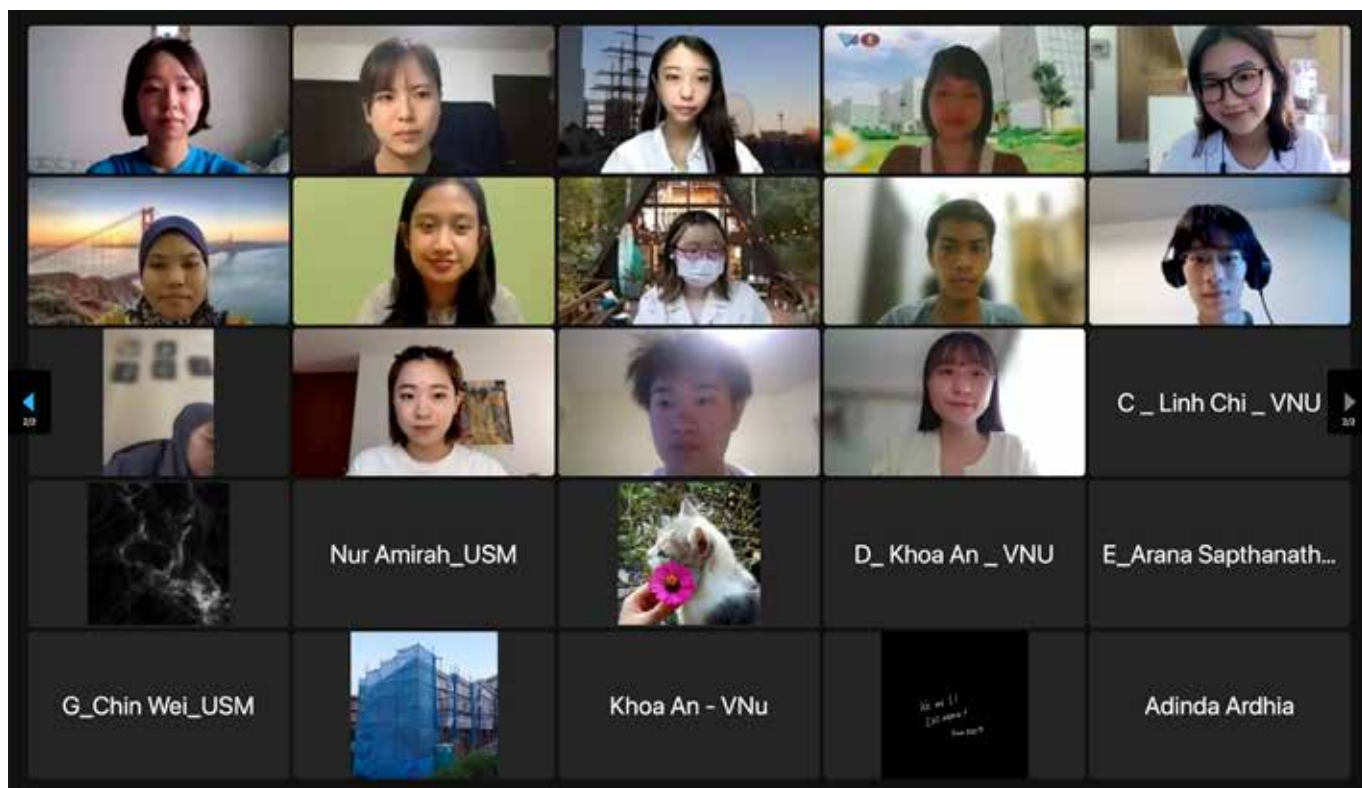
Proposal topic is "Spatial plan or specific idea with data analysis or digital service against city-specific problems."

Team	Topic
Team A	Point app towards an eco-friendly society with minimum waste
Team B	Appling of technology to serve the traffic congestion in Ho Chi Minh City
Team C	Traffic problem solution based on focus the movement of walkable city
Team D	Smart food sharing community
Team E	Improving the better quality of sidewalks in Thailand
Team F	Urban disaster management with digital technology
Team G	Promotion for the use of public transportaion in Ho Chi Minh City

スケジュール

Schedule

Date	Program
29 th July 7 月 29 日	First meet up - Guidance and greeting - Guest lecture [by Dr. Alexandre Faure from France] - Grouping and ice-breaking [7 teams] 顔合わせ - ガイダンス&挨拶 - ゲストレクチャー（ビデオ） - 大学混成のグループ編成&アイスブレイク
August 8 月	Learning by watching the lecture videos and researching about the solutions or ideas for every topic レクチャービデオで研究テーマを学習後、自らのグループに割り当てられたテーマに関する解決策やアイデアを検討する。
30 th , 31 th August 1 th September 8 月 30, 31 日 9 月 1 日	Main group work - Discussion and working for the proposal - Presentation of the proposal - Certificating グループワーク - 提案内容に関する議論と作業 - 提案発表 - 修了式
13 th September 9 月 13 日	The 13th IACSC Symposium 第 13 回 IACSC シンポジウム Final presentation by selected 3 teams, Discussion among all IACSC members 大学混成チームによるプレゼンテーション, IACSC メンバー大学との議論
24 th November 11 月 24 日	11th Asia Smart City Conference 第 11 回アジアスマートシティ会議 Final presentation by selected 4 teams, reviewing by the participants 大学混成チームによるプレゼンテーション, 会議参加者からのコメント



2

動画レクチャー Lecture Movies



Towards the Digital Urban Era

デジタル都市の時代に向けて

学生のグループワークを開始する前に、本プログラムに参加する大学が所在するアジア各国の都市や欧州の都市を事例に、参加大学の教員や外部の研究者から、「デジタル都市の時代に向けて」というテーマに沿った動画レクチャーを提供いただいた。各大学の学生は、全7本の動画レクチャーを視聴した上で、グループワークに臨んだ。

このビデオレクチャーは下記より視聴が可能である。

The video lectures can be viewed below.

https://www.youtube.com/playlist?list=PLknzynyS_oSWQBhaDII3fSoQJ9-9khTP1

Before students began their group work, faculty members from participating universities and outside researchers provided video lectures on the theme "Toward the digital urban era," using examples from Asian and European cities. Students from each university watched seven video lectures and then participated in group work.

How to build digital mobilities in an old metropolis?

アレクサンドル・フォール
Alexandre Faure

How to build digital mobilities in an old metropolis ? The case of Paris transportation policy.

Lecture

International Student Program : Towards the digital urban era

July 29, 2022

Alexandre Faure

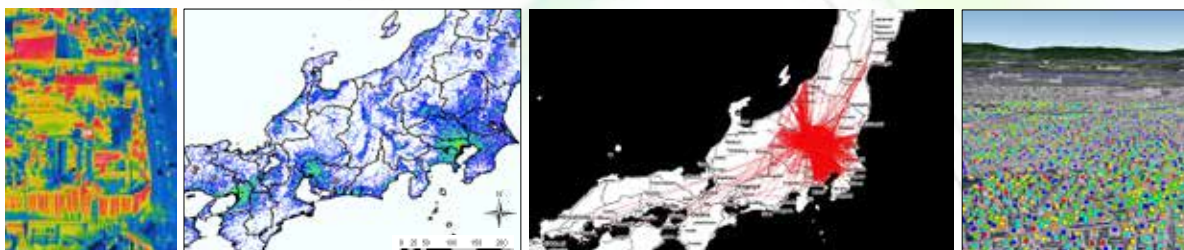
Post-doc at the Fondation France-Japon de l'EHESS



Regional innovation towards the smart city using geo-bigdata in Japan

秋山祐樹
Yuki Akiyama

-Towards the digital urban era- Regional Innovation toward the Smart City Using Geo-Bigdata in Japan



July 29, 2022

IACSC International Student Program @Tokohama City University (Online)

Yuki AKIYAMA, Ph.D.

Associate Professor

Department of Urban and Civil Engineering,
Faculty of Architecture and Urban, Tokyo City University (TCU)

Project Associate Professor

Center for Spatial Information Science (CSIS), The University of Tokyo



Facilitating urban community engagement and participation through digital methods

パトリック・キャンベル
Patrick Campbell

Facilitating urban community engagement and participation through digital methods

Patrick Campbell
PhD in Social Anthropology
University of Bristol, UK

Meeting in "Urban technology trends impacting city planning"

マレーシア科学大学
Universiti Sains Malaysia

Meeting in "Urban technology trends impacting city planning"

2020-11-05 11:12 UTC

Recorded by

Diana Mohamad

Organized by

Diana Mohamad

Channel

General

Urban planning in digital era

ハサヌディン大学
Hasanuddin University

International Academic Consortium for Sustainable Cities (IACSC)
International Student Program 2022
Toward The Digital Urban Era

URBAN PLANNING IN DIGITAL ERA

Jayanti Mandasari – Universitas Hasanuddin - Indonesia

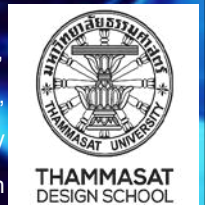
The destination for digitalist

タマサート大学
Thammasat University

**International Academic Consortium for Sustainable Cities (IACSC)
International Student Program 2022
Toward the Digital Urban
Era**

**The Destination for
Digitalist¹**

Terdpong Boonpan,
UDDI, TDS,
Thammasat University
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How to make cities smart
with digital technology?

横浜市立大学
Yokohama City University

How to make cities smart with digital technology ?

**IACSC International Student Program:
Towards the Digital Urban Era**

Yokohama City University (YCU)
Global Cooperation Institute for Sustainable Cities (GCI)
Asst. Prof. Fumihiko OMORI

3

最終報告会 Final Presentation



The 13th International Academic Consortium for Sustainable Cities Symposium

第 13 回 IACSC 総会

IACSC (International Academic Consortium for Sustainable Cities) holds a general symposium of the consortium member universities every year. This year, Universiti Sains Malaysia hosted the 13th symposium, which was held online on Tuesday, September 13th. In this meeting, Team A, Team D, and Team G had an opportunity to present the results of their group works.

IACSC (International Academic Consortium for Sustainable Cities) では毎年、コンソーシアム加盟校による総会を開催しており、今年はマレーシア科学大学が主催して、第 13 回総会を 9 月 13 日 (火) にオンラインで開催しました。この総会の中で、本プログラムの成果発表の機会を設け、Team A, Team D, Team G がグループワークの成果をプレゼンテーションしました。

Team	Student	University
Team A	Lai Tien Tien	USM
	Tam Pham	VNU
	A. Safira Rosa Nur Febryanti	UNHAS
	Fahra F Yunus Guzasiah	UNHAS
	Kamiya Miran	YCU
	Arakawa Azusa	YCU
Team D	Khairunnisa Binti Rosli	USM
	Nguyen Khoa Dieu An	VNU
	Imam Adryzal Rias	UNHAS
	Pawanakorn Laparojkit	TU
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Team G	Puteri Nur Iman Binti Hilmi	USM
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**Point app towards an eco-friendly
society with minimum waste**

Team A

Team A

Point app towards an eco-friendly society with minimum waste

INTRODUCTION



USM:

Lai Tien Tien



VNU:

Minh Tam



UNHAS:

Fahra Yunus

Safira Rosa



YCU:

Miran Kamiya

Azusa Arakawa

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Common Issue
& Fundamental Causes

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Situation Analysis

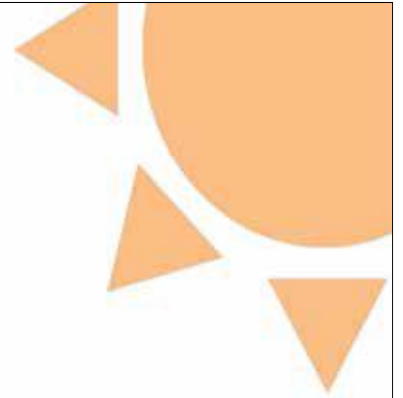
03

Core Idea & Case Study

04

Our Proposal

Common issue



Global warming



Fundamental causes

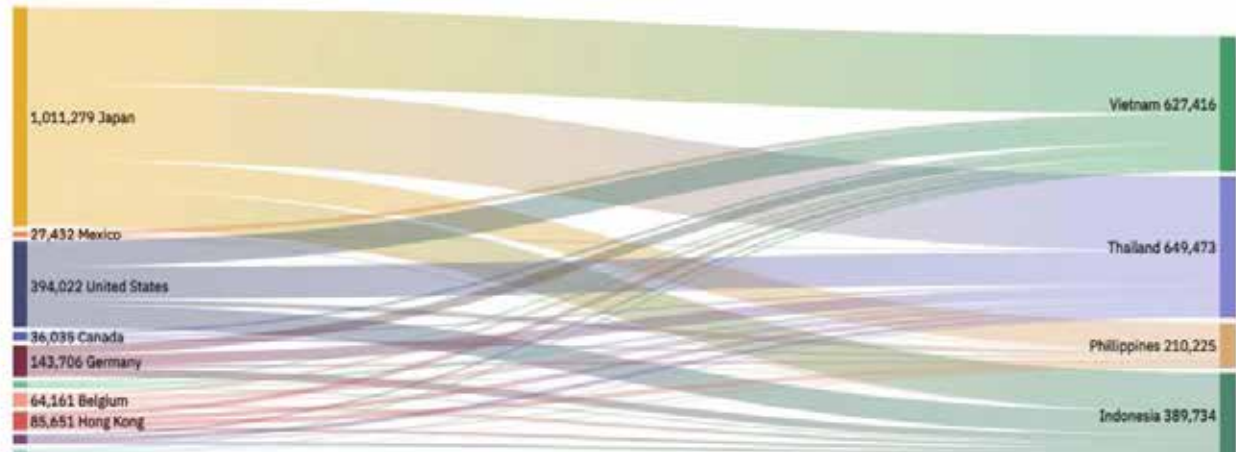
- Deforestation
- Emissions from vehicles
- **Garbage emissions**
- **Lack of awareness on global warming**



Situation Analysis

Global plastic waste flows in 2017

Top 10 exporting countries to top Southeast Asian contributors to ocean plastic



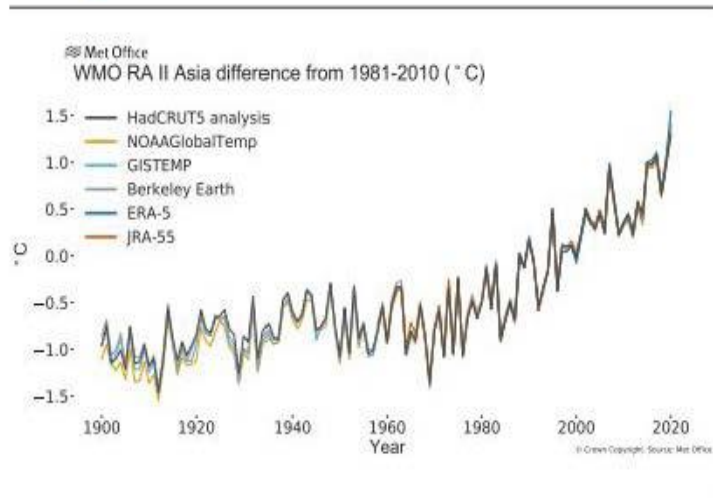
Source: International Trade Centre, CECWorld Magazine, Our World in Data

Situation Analysis



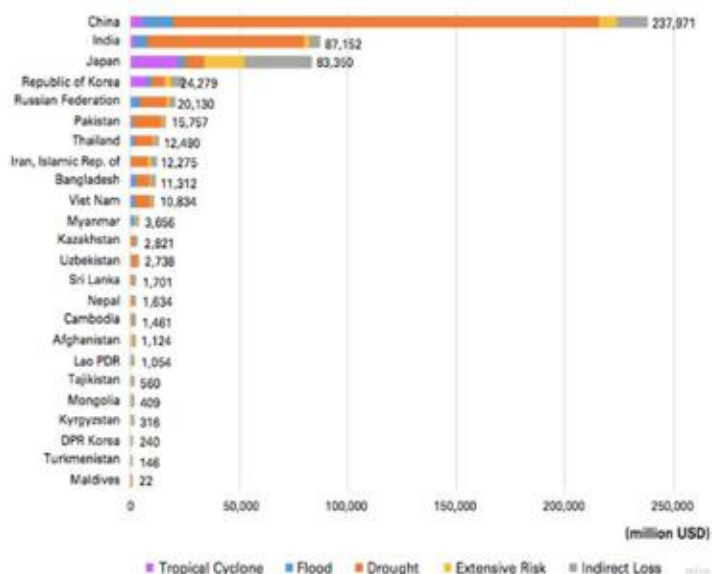
Some developed countries in Asia have an efficient way of separating waste at the source and recycling it. Others fail to do so, waste is burned and buried.

Situation Analysis



The amount of waste discharged into the environment without treatment, the high consumption leading to the promotion of production and exploitation of resources are the causes contributing to climate change, especially global warming.

Situation Analysis



The UN Intergovernmental Panel on Climate Change (IPCC) warned in its most recent report that Asia Pacific is facing rising sea levels, heat waves, droughts and increasingly intense rainstorms. Asia had its warmest year on record in 2020, with the mean temperature 1.39 °C above the 1981–2010 average.

Policy

SDGs related to our issue



Trash Hierarchy

Reuse - Reduce - Recycle

Core Idea:

By showing some profit for eco-friendly consumption, the emission may be reduced

→ Use some promotional app



Case Study

Mall Sampah



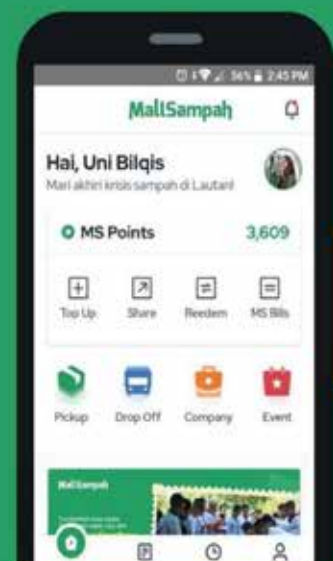
- The waste mall technology is designed to capture waste from its source, using a network of local collectors and scavengers as the key to the recycling chain in Indonesia.
- Ms Points which can be exchanged for various digital products such as electricity tokens



Services

- Pick Up
- Drop Off
- Company
- Event

sell and recycle trash easier



Case Study

Moppy (point app)

- Made in Japan
- Various ways to earn points
- You can exchange points into cash, e-money, etc.

→ If users get scored to buy eco-friendly product, it will be more popular

→ Points should be used for their necessities



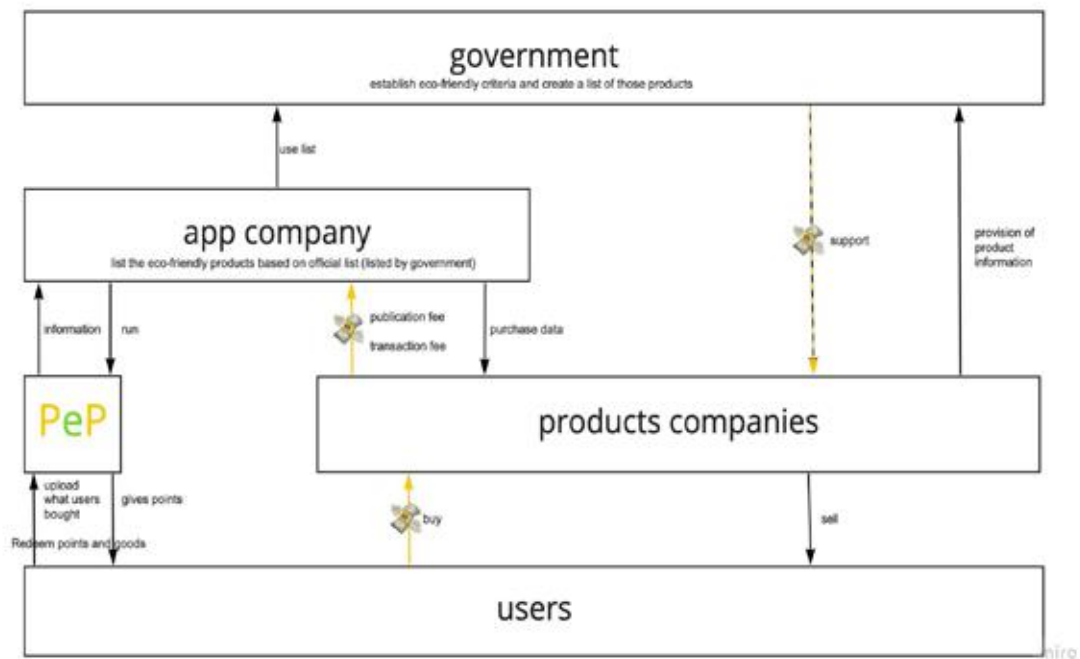
Proposal : PeP (Pick eco-Point) -app with Blockchain system-

- **government** sets certain criteria to certify eco-friendly products and makes a list of such products.
=> "Official Eco Products List"
- **app company** lists eco-friendly products on the app with reference to the "Official Eco Products List"
- When **users** buy some listed eco-friendly products, they get scored
- **users** can use those points for buying bus tickets, other sustainable products, etc.
- **app company** collects users' data safely
=> it can be used in other certifications or market information for products companies

💡 **app system motivates users and companies to make eco-choices**



Business model



Users Flow



Conclusion



Point app, **PeP** towards an eco-friendly society with minimum waste

Thank you !



Smart food sharing community

Team D

SMART FOOD SHARING COMMUNITY

TEAM D

- Hina Ishikawa
- Hiraku Kase
- Imam Adryzal R.
- Khoa An
- Moka Matsuura
- Pawanakorn Laparojkit





YCU

Hiraku Kase



TU

Pawanakorn Laparojkit



VNU

Khoa An



UNHAS

Imam Adryzal R.



YCU

Hina Ishikawa



YCU

Moka Matsuura

Meet Our Team!!



SUMMARY

The growth of the population starting to become higher as well as the production. These also imply that there will be a higher amount of waste that will take place in the cities.

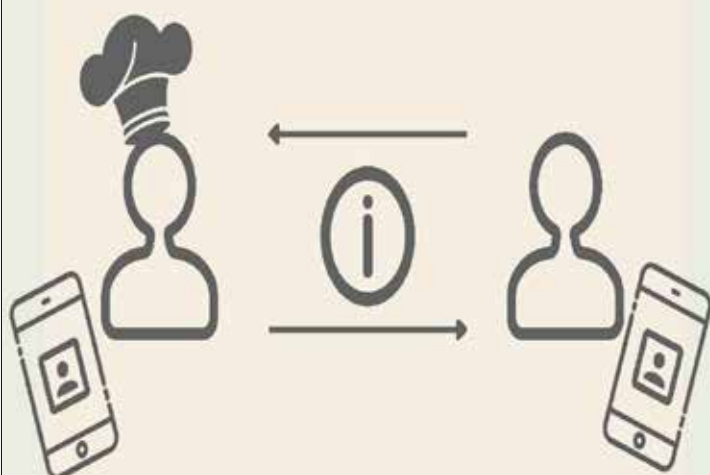
We then need to solve the problem on how we can reduce food waste to make the world become more sustainable and better in quality of life.



COMMON ISSUE

Common issue	<u>Environmental pollution</u> Air pollution, Water pollution, Land pollution, etc...
Cause	<u>Waste of foods</u> 1.3 billion tons of food is wasted annually. 
SDGs targets	  

COLLECTING DATA



Online account & App of the city

- Citizen must make an account on the app
- All data of consumption are recorded & treated online through registers
- Give them incentives with

COLLECTING DATA



amazon go

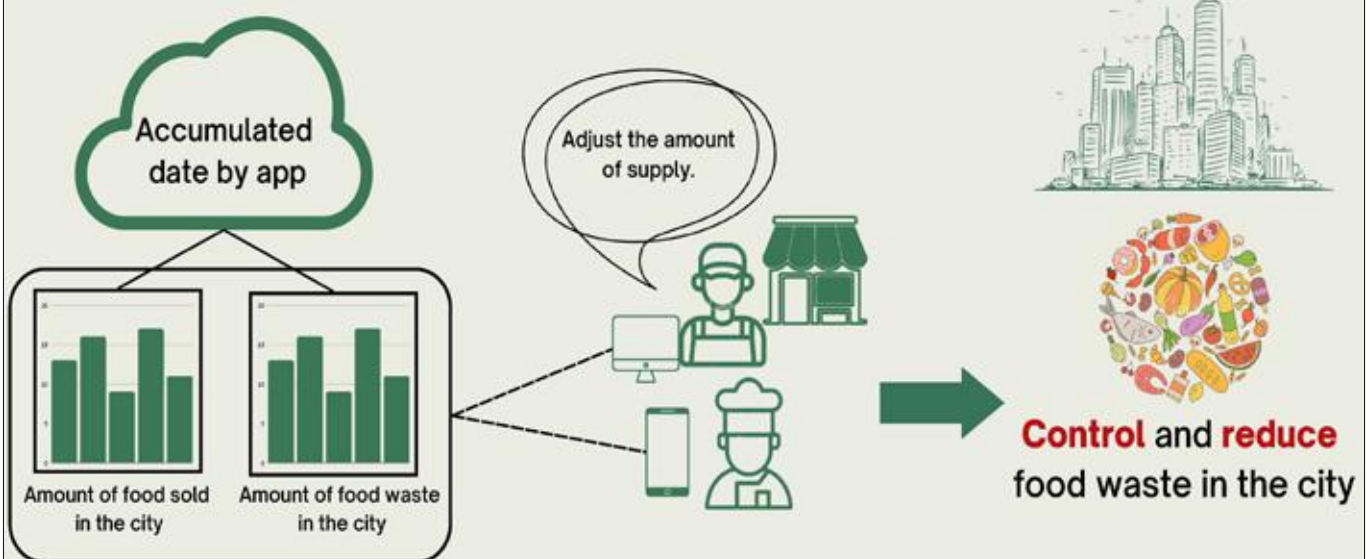


With the online system of account & app, all grocery stores inside of the city can be walk-out.

- less stress for customers
- collect & treat data easier

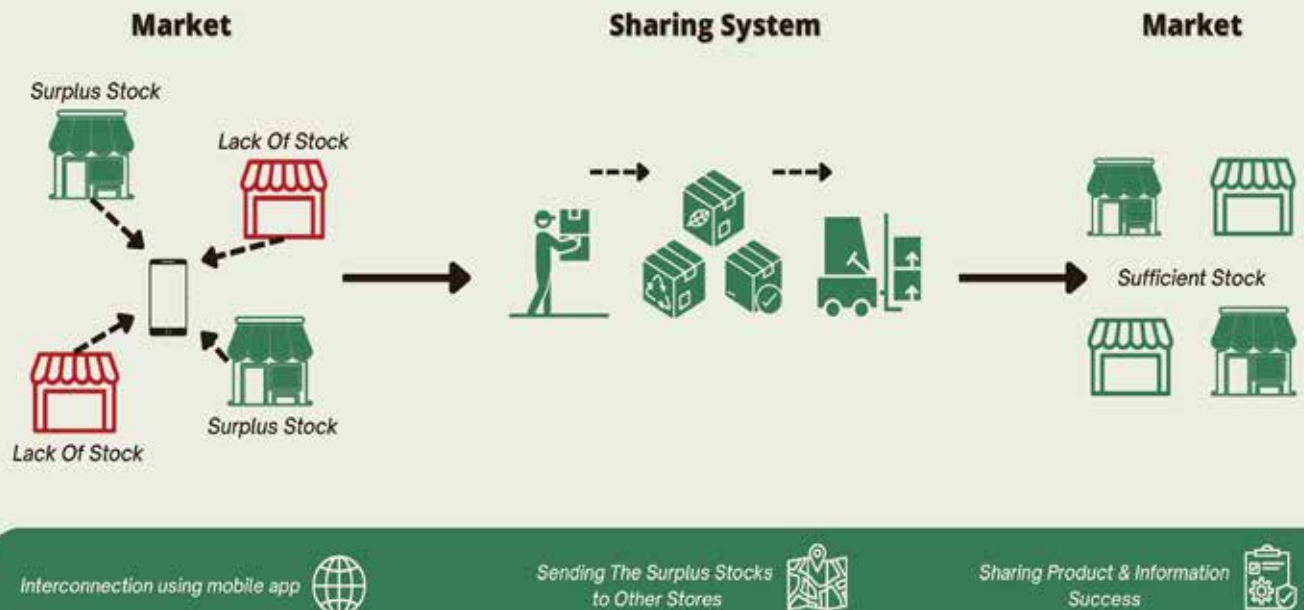
screen shots from:
<https://www.youtube.com/watch?v=NrmMk1Myrxc>

HOW TO REDUCE FOOD WASTE?



ex:IBM Food Trust

HOW TO REUSE FOOD WASTE?



Recycling of Food Waste-Compost



Composting is organic material consists of organic matter or food scraps.



Food scraps will become compost used to grow plants and vegetables!





SUMMARY



Thank you for listening.

ご静聴いただきありがとうございました。

ขอบคุณที่รับฟังค่ะ/ครับ

Terima Kasih



Promotion for the use of public transportation in Ho Chi Minh City

Team G



Issue

**Traffic
congestion**

Fundamental cause

**Lack of public
transport use**



The reason people refuse to use PT

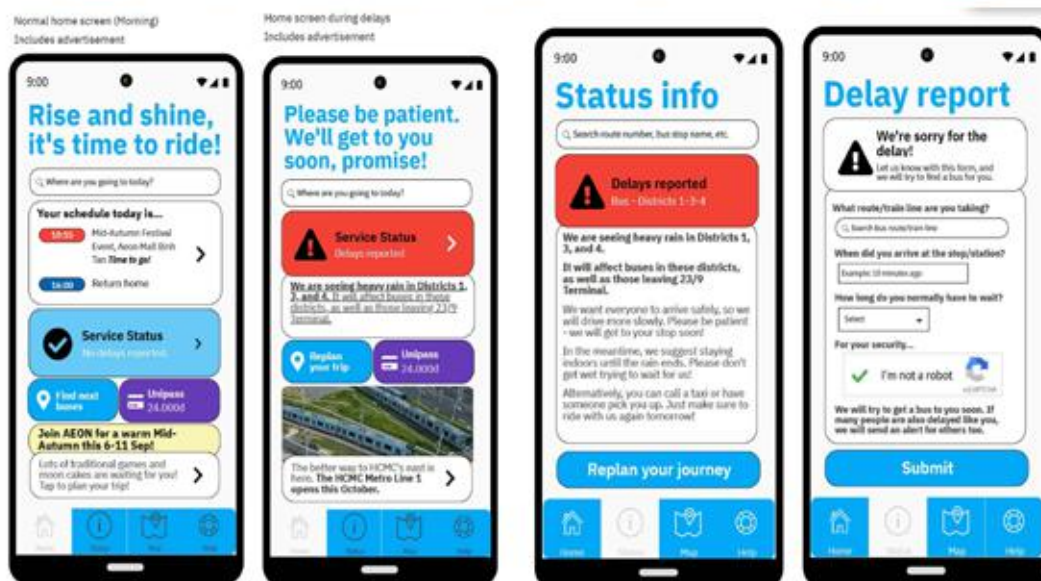
- Low service quality of bus staff
- Safety risk
- Distance to walk to stops
- Overcrowding
- The waiting time is too long
- Accessibility issues
(for wheelchair person or elderly people...)



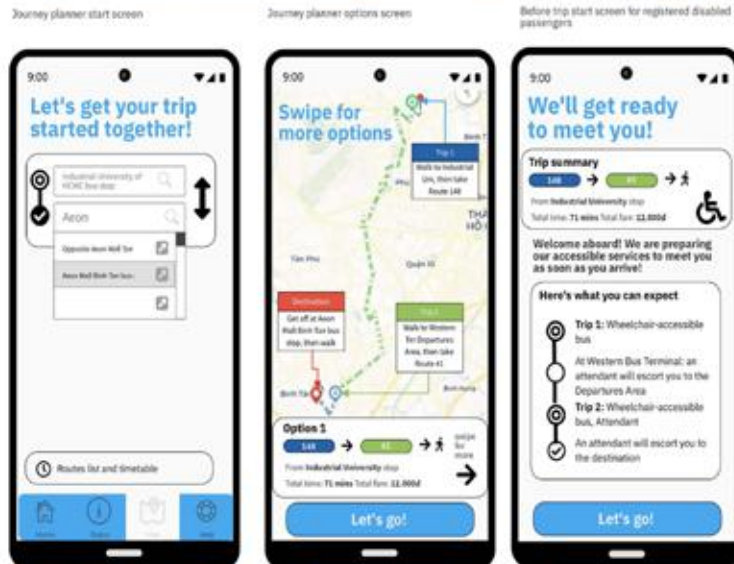
Solution: Develop an app

- Create an app that integrates with transport smart cards to
 - Send welcome messages and end-of-trip surveys
 - Send real-time updates and encouraging messages
 - Allow passenger to send feedback about the PT service
 - Allow passenger to send emergency alarm to police and safety contacts
 - A mascot for emotional connection, can also be added.
- Make it possible to understand the current operation status on the app
- Disabled passengers can ask for help by using app.
 - Tap the app and ask support, then bus or driver will ready the ramp at the stop.
 - Support can also be arranged via journey planner
- Calculate and visualize CO₂ emissions from movement
- Some incentives such as stamp cards, vouchers and points are returned to people who ride frequently and contribute to reducing CO₂ emissions

Ex. Integration with transport smart cards and telling the current operation status on the app



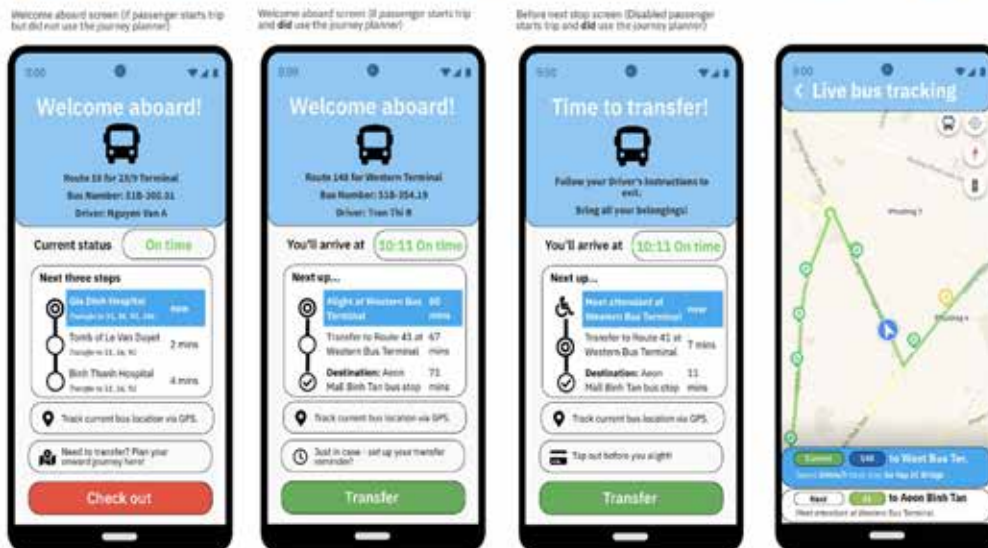
Ex. Proposal of the best route for your trip and Calling for help by using app



Ex. Improved bus stop sign with QR-code check-in

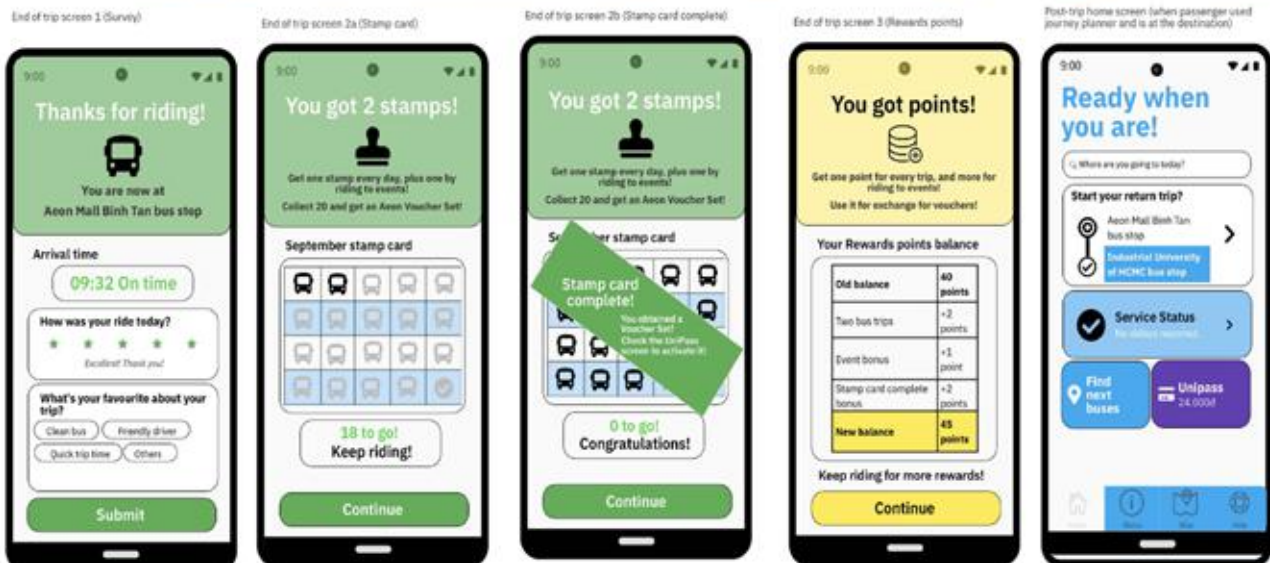


Ex. Bus tracking and trip information



Ex. Post-trip feedback and incentives

Return trip suggestions on home screen



Ex. Emergency alert, push notifications, CO₂ reductions

Sample push notifications



Integration with other solutions

1, Invest in general service improvements

Examples: wheelchair-accessible and high-capacity buses, training for staffs

2, Encourage change in commute time

Make the fare cheaper for employees of companies that have contributed to the elimination of crowded public transportation.

- Employees use cards or the app instead of tickets to take buses or trains outside of peak hours at discounted fares.
- Alternatively, company can pay on employees' behalf.

3, Advertising

Place it within the app's home screen.

We can collect advertising funds from companies to further improve the condition of transportation network, like building lines or application development.

Conversely, we can also place our own advertising in other media.

Other solutions

Please access the full demo here

<https://wireframepro.mockflow.com/view/M0iv0zHTBh>



11th Asia Smart City Conference

第 11 回 アジアスマートシティ会議



The Asia Smart City Conference (ASCC) is an international conference that brings together representatives from Asian cities, national governments, international organizations, academic institutions, and private companies, aiming at establishing a knowledge hub for Smart Cities. At this conference, representatives from cities will share their vision for growth as well as their current challenges and needs; private companies and academic institutions will propose innovative solutions; international organizations will offer programs to support efforts by cities and private companies; and various best practices from around the world will be shared.

This year's theme is "The New Urban Development that Enables Sustainable Growth Through Public-Private-Partnership". In this meeting, Team B, Team C, Team E, and Team F had an opportunity to present the results of their group works.

アジア・スマートシティ会議は、横浜市の主導で2012年に開始された、アジア諸都市、政府機関、国際機関、学術機関及び民間企業等の代表者が一堂に集まり、経済成長と良好な都市環境が両立する持続可能な都市づくりの実現に向けた議論を行う国際会議です。この会議では、各都市の代表者から提示される都市課題や成長へのビジョン、民間企業や学術機関による革新的ソリューションの提案、及び公民連携を資金面で支援する国際機関の施策など、世界の様々な知見（ベストプラクティス）が共有され、参加者が新しいビジネスチャンスを発見できる場も提供しています。

第11回目の開催となる2022年は、11月24日（木）から25日（金）に「持続可能な成長を実現する公民連携による新たな都市づくり」をテーマに掲げ、メタバース空間を活用しオンラインで実施されました。この会議の中で、本プログラムの成果発表の機会を設け、Team B, Team C, Team E, Team Fがグループワークの成果をプレゼンテーションしました。

Team	Student	University
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	Cuong Luu	VNU
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	Apisara Ngamwongnoi	TU
	Gabriella Christine Sumule	UNHAS
	Kijima Yu	YCU
	Nakamura Sayumi	YCU

Applying of technology to solve the traffic congestion in Ho Chi Minh City

Team B



Table of Contents

Issue	The issue we'll discuss
Fundamental Causes	What is causing the issue?
Study case location	Where to apply the technology?
Solutions	How to solve the issue?

01

Current issue

1. Determined the issue
2. Consequence of the issue



Traffic congestion

Traffic congestion performed by vehicles stuck on the road or increasing travel time. It is a serious problem in many urban areas such as Ho Chi Minh City in Vietnam, and Jarkata in Malaysia,...

Consequence of the issue

Increases fuel consumption



Driving through congested traffic means you have to shift down to lower gear ratios and keep accelerating at high revs. This stop-and-go situation means more energy is required and in turn more fuel is burnt compared to travelling at a constant and reasonable speed. The result is increased CO₂ and pollutants released into the air. This is hard on your pocket and hard on the environment.



Increase the cost of traveler and freight movement

It is easy to see when you travel on a familiar road but it takes more time than the last time. Or when you order groceries on the online market (such as Shopee, Lazada,...), the shipment cost will also base on the road's status including the traffic situation.



Increase the number of crashes

Various studies have shown mixed results on this relationship. Based on a comprehensive literature review of more than 70 studies between 1937 and 2019. To reduce the land road accidents, firstly, we need to make the traffic more comfortable.

02

Fundamental Cause

High use of private vehicles

- Public transportations has its limit to suitable with every person's wants (timetable, car sickness,..).
- With the population growth especially in wealthy nations, more people means more vehicles.



Lack of public transportation

- Inadequate transport infrastructure and poor provision of public transport services.
- The limit of infrastructure expansion and renovation (lacks of budget, technology, ...).



Study case
location





Ho Chi Minh City

A special-grade city in the South of Vietnam. Famous for its fast-growing economy and urban area. Ho Chi Minh City plays an important role in the growth of GDPs and renovation of technology in Vietnam.

Also because of its fast-growth, nowadays, Ho Chi Minh City's infrastructure and traffic is becoming worse.

First, over crowded population is the first reason of the traffic jam. According to the 2009 Census, there were about 4,480,255 vehicles and 7,200,000 people residing in Ho Chi Minh City (Ho Chi Minh Department of Transportation, 5).

Other Cities in Vietnam	
City Name	Population
Ho Chi Minh City	9,077,000
Hà Nội	5,067,000
Cần Thơ	1,786,000
Hải Phòng	1,382,000
Đà Nẵng	1,188,000
Bien Hoa	1,078,000
Thu Dau Mot	460,000
Vungtau	442,000
Hue	417,000
Nha Trang	336,000
Long Xuyen	334,000

**Population of Ho Chi Minh City
compares to others**



Public transportation in Ho Chi Minh City: bus, taxi, and motorbike taxi. There is no inter-city train.

According to a report by the Department of Transport of Ho Chi Minh City, it is estimated that the city loses about 6 billion USD/year (more than 138,000 billion VND) because of traffic jams.

The calculation of time waste for the traffic jams in Ho Chi Minh City is up to hours to each time.



Solutions

1. Encourage the use of public transport instead of cars
2. Make public transportation easy to use

1. Encourage the use of public transport instead of cars

Encouraging people to use public transports by giving them a chance to have free ride. People can get points by contributing to alleviating traffic congestion, which can be used for public transportation.

How does it work?

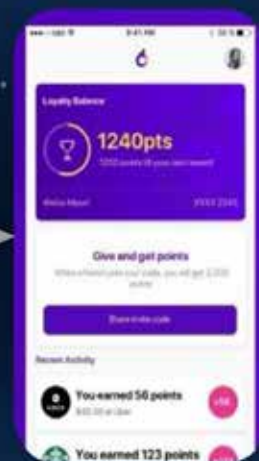


You will get points by:

1. Use public transport instead of cars
2. Drive safety



Points will be sent to your mobile app



There will be a points wallet for you to gain and use it in the future

How to make sure people do it right to get points?

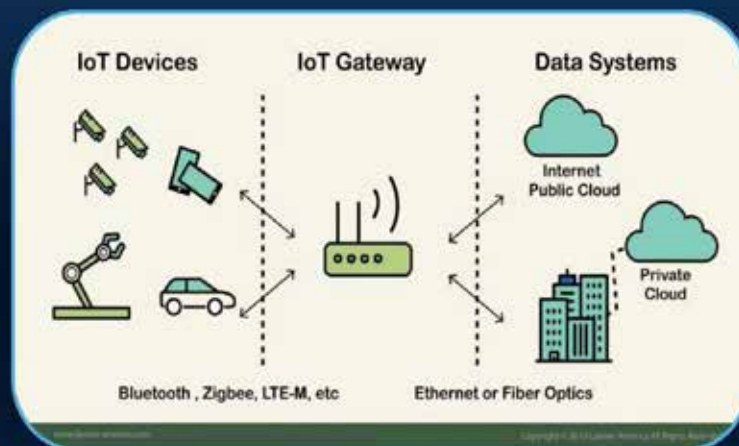


1. Create a system that connects electronic payment used



2. Install sensors on roads

2. Make public transportation easy to use



Use IoT technology to collect data on people's commute time, time to leave work, and destination.

Based on the collected data, the timetable and number of trains or buses operated by transportation are constantly changed to make it easier to use.

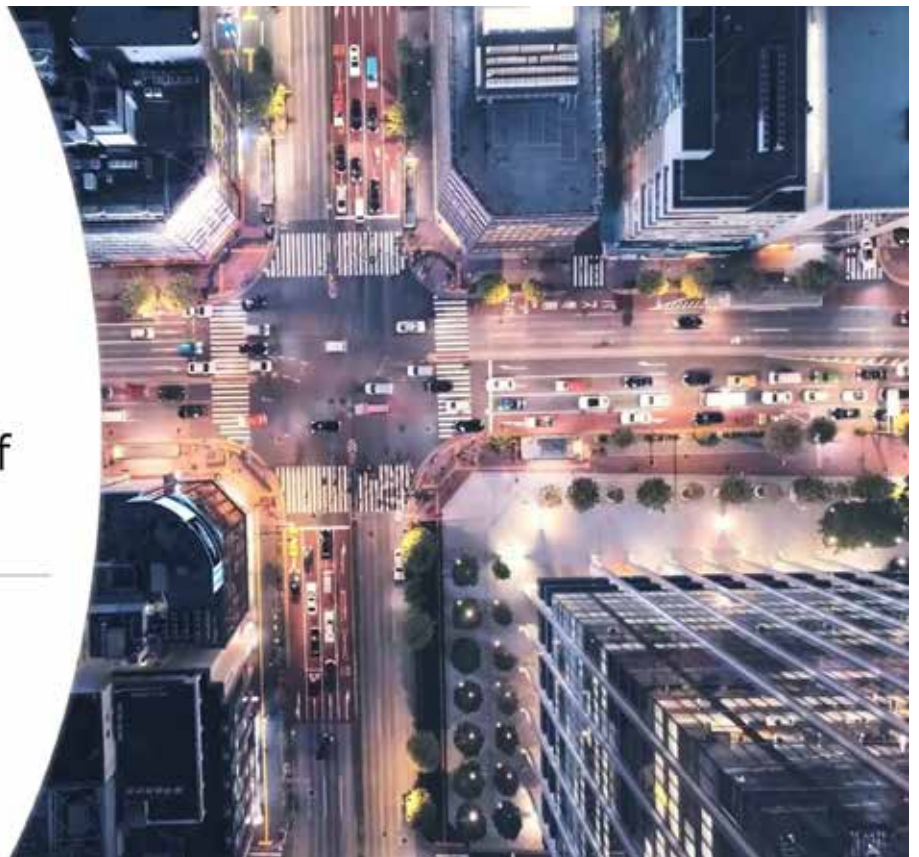


**Traffic problem solution
based on focus the movement
of walkable city**

Team C

**Traffic problem
Solution**
based on focus
The Movement of
Walkable City


TEAM C




Contents

 Common issue occurring in Asia

 Mind map

 Walkable city

 present condition

 Vision


 Solution

 Reference



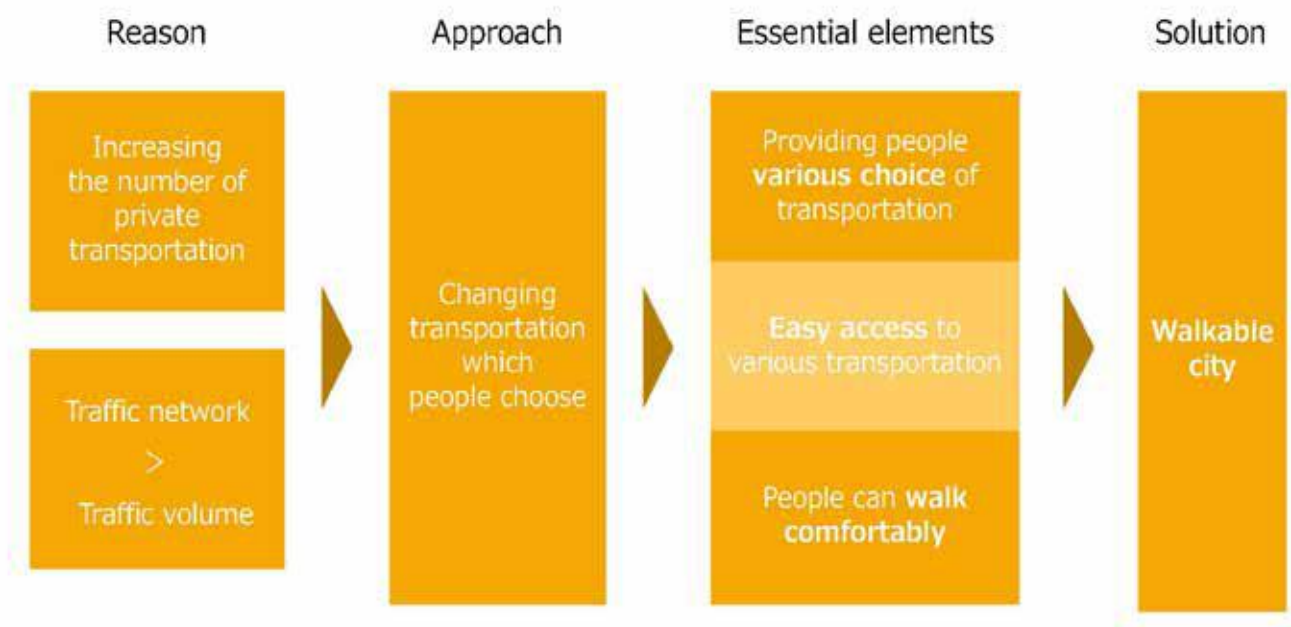
Common issue occurring in Asia

- Traffic congestion is a serious problem in any country in Asia.
- Urban design that does not give priority due to the spread of privately owned transportation.



What's the cause and solution for the issue?

Mind map for solving traffic problems



What is the walkable city?

The Walkable City concept is included in one of the principles of Smart Growth. According to Elfandi, Ashadi, & Hantono (2018), smart growth has several principles, one of which is the availability of pedestrian facilities and infrastructure (Walkability) aimed at pedestrians and cyclists with the aim of reducing the use motor vehicle.

Suggestion

- Present condition
Jakarta, Indonesia as an example
- Vision
- Solution

How to realize walkable city

1. Analyze

Finding how the city can be changed by using data & AI
(ex.) Prove-car/movement of people

2. Making specific solution (plan)

What is an ideal walkable city like?

What should drivers of the road do? Changing the way? Changing means of transportation?

3. Experiment

Doing social experiment in real-world or virtual-world

*Virtual city can be built by using data of step1

Walkable city will be realized!

Present Condition ~problem & causes~



<https://www.thejakartapost.com/news/2017/11/01/jakartans-spend-22-days-in-traffic-jam-per-year-survey.html>

In Jakarta, Indonesia

- Heavy traffic jam
- Lack of public transportation
- People park on the roads

Present Condition ~Solution~

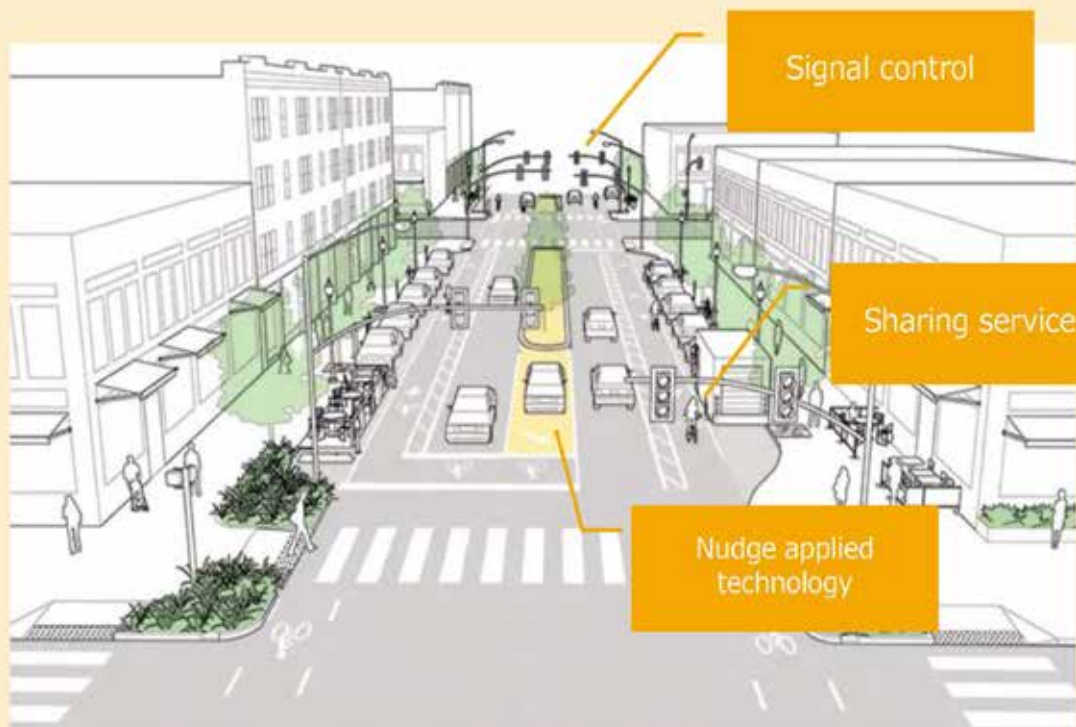


<https://monoist.itmedia.co.jp/mn/articles/1803/22/news011.html>

The situation is progressing gradually

- Construction of railway
- Bus Rapid Transit Service
- Making bicycle lane

Our
Vision



<https://www.vox.com/the-goods/2018/10/26/18025000/walkable-city-walk-score-economy>

Signal Control



Collecting data

congestion data by using vehicle detector
Past case studies



Controlling traffic signal with using AI

(ex.) giving priority to public transportation

By using signal control



ALLEVIATION OF TRAFFIC
CONGESTION

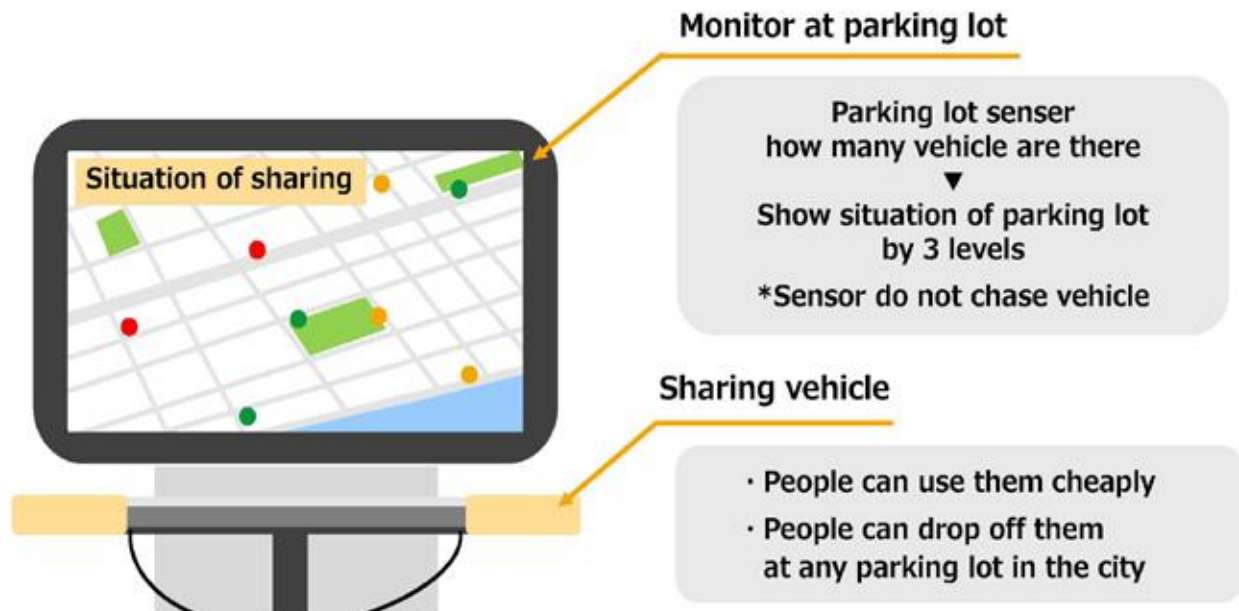


EFFICIENT OPERATION OF
PUBLIC TRANSPORTATION



PRIORITY FOR PEDESTRIANS
CROSSING THE ROAD

Sharing service



By using sharing service



INCREASED TRANSPORTATION
OPTIONS TO DESTINATIONS



AVAILABLE AT A LOW COST



IT LEADS TO REGIONAL
REVITALIZATION

Nudge applied technology



User **answer** some questions



AI analyze their choices



Delivering information
about **personalized recommendation**

On car navigation system



Encouraging users to **stop by** there

By using nudge applied technology



Alleviation of traffic
congestion by having people
stop by everywhere.



Creating a town that makes
people want to walk.

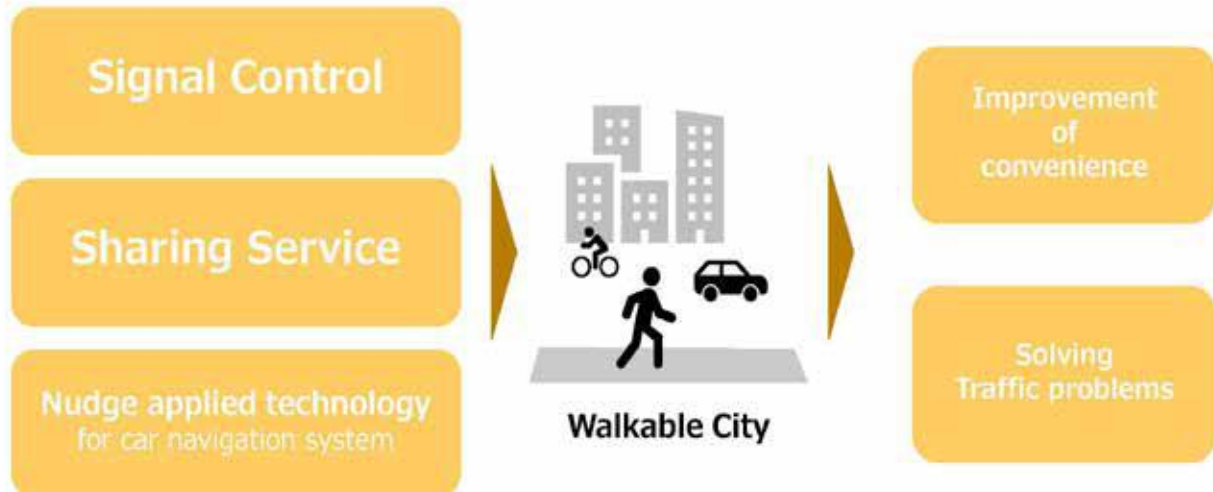


Possibility of making new
discoveries in the town.



Promoting the construction
of mixed-use parking lots,
etc.

Conclusion



Reference

- https://www.daiwahouse.co.jp/sustainable/sustainable_journey/smartecotowns/004/
- <https://www.theguardian.com/cities/2017/sep/12/walkable-city-worlds-most-new-york-melbourne-fes-el-bali>
- <https://www.thejakartapost.com/news/2017/11/01/jakartans-spend-22-days-in-traffic-jam-per-year-survey.html>
- <https://www.vox.com/the-goods/2018/10/26/18025000/walkable-city-walk-score-economy>

Improving the better quality of sidewalks in Thailand

Team E



IMPROVING THE BETTER QUALITY OF SIDEWALKS IN THAILAND

Issue in City (Thailand)	Poor-Conditioned Sidewalks	
Focus Issue	<ul style="list-style-type: none"> ✓ Sidewalks in Thailand are not well maintained, which makes it harder for people to walk. ✓ Motorbikes often drive on the sidewalks to avoid traffic, which is dangerous for pedestrians. ✓ Sidewalks are usually crowded with stalls and vendors, making it harder to walk. 	
Fundamental Cause of the Issue	<ul style="list-style-type: none"> ✓ Narrow and crowded sidewalks are difficult to repair, these facts interrupt repairing and cause poor condition 	
Solutions	<ul style="list-style-type: none"> ✓ Keep regular maintenance to ensure safety and walkability. ✓ Re-enforce sidewalk laws in order to stop people from using the sidewalk as a road. ✓ Create a designated space for stalls and vendors to locate in so that they don't occupy the sidewalks. ✓ Install machines on sidewalks to control motorbike riding (for the Issue 2). ✓ Create app that can report poor-condition of sidewalks easily to administration 	 

THE DIFFERENCES AMONG THAILAND AND OTHER COUNTRIES

Issue	 Thailand	 Japan
Sidewalks (Physical Aspects)	<ul style="list-style-type: none"> - Sidewalks are often used by street vendors - driver priority - always lively - sidewalks are steep - many potholes and bumps on the road - electric wires hanging down on the pavement 	<ul style="list-style-type: none"> - Designated road - Pedestrian priority - Some streets have no distinction between roadways and sidewalks other than paint. - Most of the pavement is the same as the roadway. 



THE DIFFERENCES AMONG THAILAND AND OTHER COUNTRIES



Issue	 Malaysia	 Indonesia
Sidewalks (Physical Aspects)	<ul style="list-style-type: none"> - Sidewalk are mostly decorated with large flowers pots to prevent vehicles from passing on the sidewalk. - Sidewalk in Malaysia only live in major cities compared to rural areas. - Only prioritizing the safety of users and the disabled (PwDs). - Sidewalk in Malaysia are designed with facilities for disabled (PwDs) which is in terms of difference in pavement use. - There is still have a lack of sidewalk maintenance. - Some sidewalks in Malaysia still have hawkers and street vendors. 	<ul style="list-style-type: none"> - Malioboro streets that's a pedestrian area who has main shopping boulevard with the vendors on the sides. - Visitors are able to do shopping and walk on motorbikes or traditional horse venues have their own path. It also has a bench, disability path, and bollards, etc. - Bollard that shape like a ball as a sign that the area is not allowed to be entered by motorbike. - Bollard also to control over parking on the side of the road. 

THE DIFFERENCES AMONG THAILAND AND OTHER COUNTRIES

Issue	 Thailand	 Japan
Sidewalks (Human Aspects)	<ul style="list-style-type: none"> - Narrow sidewalks leads to difficulties when walking - potholes and electric wires can be dangerous - pedestrians also have to dodge motorbike even on the sidewalk 	<ul style="list-style-type: none"> - Not crowded - Walkable - Scary when fast cyclists pass nearby - Usually nothing to think about the sidewalk
	 Malaysia <ul style="list-style-type: none"> - Have the comfort to walking in the major cities or city center. - Not crowded and crowded only in major cities. - Safe for disabled people (PwDs) and users. 	 Indonesia <ul style="list-style-type: none"> - Visitors can be able to do shopping and comfortable walk on - Walkable city - Pedestrians can get comfort and safety - There's a friendly interaction to walk seeing by each others.

FEATURES OF SIDEWALKS WITH ISSUES/IMPACTS

Thailand	Features of Sidewalks	Issues/Impacts Considered from Features
	Crowded	A congestion of roads lead to crowded sidewalks. Making less walkable sidewalks.
	Sidewalks are often used by street vendors	Tourism promotion: Street vendors are one of the unique Thailand culture. It could gather people from oversea.
	motorbikes often ride on the sidewalks	can be dangerous for pedestrians walking at the same time
Indonesia	Features of Sidewalks	Issues/Impacts Considered from Features
	Main shopping boulevard on the side among the road	It can increased people's income so that the economic growth of Indonesia continues to improve.
	Bollard that control motorbikes from overparking	People don't have to be worry when they walk on because they get the safety and comfort feeling
	Motorbikes and horse venue have their own path	It can be safe to people for walking among the Malioboro St. but it also has potential of traffic jam to another streets (for ex: Mataram St.).

Japan	Features of Sidewalks	Issues/Impacts Considered from Features
	Designated /beautiful walkway	Because the road is beautiful, many people want to walk on the road. And it leads to health promotion.
	Usually nothing to think about the sidewalk	It can be considered safe sidewalks, but also uninteresting.
	Rarely used for purposes other than walking	The potential to increase the city's attractiveness is there, but it is not being fully utilized.
Malaysia	Features of Sidewalks	Issues/Impacts Considered from Features
	Specific area for street vendors	<ul style="list-style-type: none"> - It is a culture that has been maintained for a long time to develop community's income. - Poverty leads them to do street vendors and most businesses are focused on selling food. - Making the sidewalk completely unusable
	There is still have a lack of sidewalk maintenance	<ul style="list-style-type: none"> - There are some sidewalks in some areas that have not been upgraded well, especially in terms of the type of pavement and uneven condition of the sidewalk. - This make the sidewalk unwalkable.
	Sidewalk only live in major cities compared to rural areas	<ul style="list-style-type: none"> - Sidewalks will become increasingly unmanageable if rarely used.

SIDEWALK FOR PERSONS WITH DISABILITIES (PWDs)

- The government mandates that public facilities include sidewalk and services be **fully accessible, safe, and easy to use for people in wheelchairs and others with disabilities**.
- It has **specific guidelines** for the slope of sidewalks and curb ramps to create communities that address the needs of all people, specifically those with disabilities.
- Facilities such as pedestrian sidewalks cannot be accessed by the disabled in some areas because **awareness and limited government budget**.
- **Over 1 billion people** globally experience with disability

What is Disability ?

Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.



The guiding paths were provided to assist the visually impaired persons to cross the street



The curb ramps with 1:12 were provided. The additional guiding paths and speed bumps were added.



The crossing point of the sidewalk and existing building access, and some vertical greeneries installed on the existing walls.



The total width of 150 cm was applied in all sidewalks & clear-width of 100 cm was provide in all areas.



The dotted-pattern path : the visually impaired persons to stop before carefully crossing & the striped-pattern path : assisted them to continue the walking direction.

COMMUNICATION AT SIDEWALKS

Verbal Communication

Digital message boards at sidewalks

- Setting some digital message boards to promote space to communicate with other pedestrians
- Easy to hang out with someone who has never met before
- Could write down in anonymous
- Doesn't interrupt other pedestrians
- Reduce the number of motorbikes on the sidewalks
- People who have disabilities can join easily

Example in Japan

- Some stations in Japan set a digital message board that can communicate with others by free
- Users can post images and movies for a fee

Non-Verbal Communication

Using LED lights for communication

- Increased non-verbal communication between pedestrians
- Sidewalks become pedestrian's spaces
- Make sidewalks feel harder for motorcycles to drive on
 - Solving traffic problem
- Less damages on the road
- Lessen the number of damages of sidewalks

Urban Furniture (Benches, Public Art, Signage)

- Various color and materials giving different feelings to users
- Makes an agreeable, useable, and dynamic open environment where individuals can rest, mingle, read, or human watch
- Can avoid passing motorcycle on the sidewalk



Solutions and Suggestion for Sidewalks based on Features

- Have a particular area for **street vendors** for Thailand
- **For example** : Singapore created a special place for street vendors under one roof
- Vendors could attract foreigners
 - Maintained sidewalks could prompt tourism in Thailand and Malaysia
 - Has a potential of economic growth



Singapore : Chinatown Food Street (Hawker Centre)



Singapore : Market Street Interim (Hawker Centre)



Singapore : Lau Pa Sat (Hawker Centre)

- We can have an **app** that is **dedicated to rerouting users** to a different sidewalks when there is a problem with the current one. Kind of like how google maps changes the route when there's traffic or road congestions.



InRoute
Route
Planner Apps



CoPilot
GPS



Waze
Apps

Solutions and Suggestion for Sidewalks based on Features

- Creating sidewalks **decorated with street art** either on the pavement or in buildings adjacent to sidewalks for them to spend their time on sidewalks and sidewalks will become more cheerful.



Malaysia : Jalan Alor, Bukit Bintang, Malaysia



U.S State : Avenue of Art, Sarasota, Florida



India : Bharati Vidyapeeth's English Medium School, Balewadi, Pune

- **PathVu App (from Esri ArcGIS)** : Use the mobile app to support pedestrians of all disabilities with accessibility support. One of the most common issues pedestrians with disabilities face is the lack of safe, wheelchair-accessible pathways. pathVu addressed this with an index grading scale that allows users to know where it's safe to cross and informs cities of where they are failing to meet quality standards for their citizens.



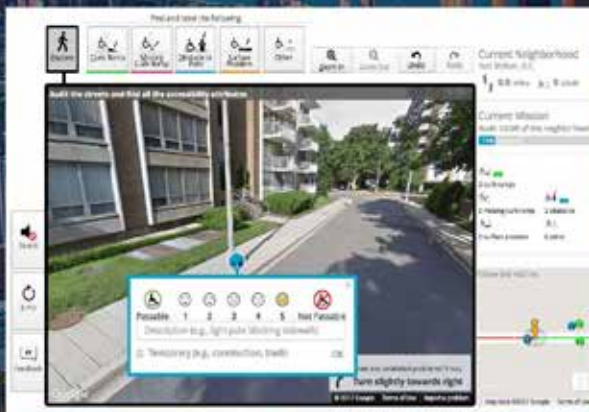
pathVu

pathVu
Apps

Solutions and Suggestion for Sidewalks based on Features

- Project Sidewalk Web :

- Data collection methods for acquiring sidewalk accessibility information using a combination of crowdsourcing, computer vision, and online map imagery.
- To use this new data to design, develop, and evaluate a novel set of navigation and map tools for accessibility



- Has five primary color-coded label types: curb ramps, missing curb ramps, obstacles, surface problems, and no sidewalk.
- The images above are example accessibility issues found by users in public deployment.

Explore city neighborhoods and find accessibility problem

Solutions and Suggestion for Sidewalks based on Features

Application to Report Potholes in the Road

<https://www.city.sagamihara.kanagawa.jp/patrun/1012735/index.html>

1. Report the potholes in the road.
2. City of Sagamiara gets the report and fixes it.
3. Citizens can live safely.



(Take a photo! / Send it! / Get better!)

Application to Send the Manhole Cover Photo

<https://prtimes.jp/main/html/rd/p/000000019.000079512.html>

1. Take a photo of the manhole cover.
2. Send it.
3. Compete with other users for the number of photos sent.
4. Users get a gift in a drawing.
5. Administration uses information to repair manhole covers.



(Take the shot and protect the infrastructure! / Let's take a picture of a manhole.)

MySidewalk™ App

<https://www.researchgate.net/publication/320383549-Mobile-Based-Sidewalk-Inventory-App-for-Smart-Communities-Health-and-Safety>

MySidewalk™ is a mobile application platform that allows local, state, and federal entities to collect and maintain accurate geospatial data about the sidewalks in their jurisdictions, enabling informed decisions regarding the sidewalk maintenance, enhancement, and new construction.

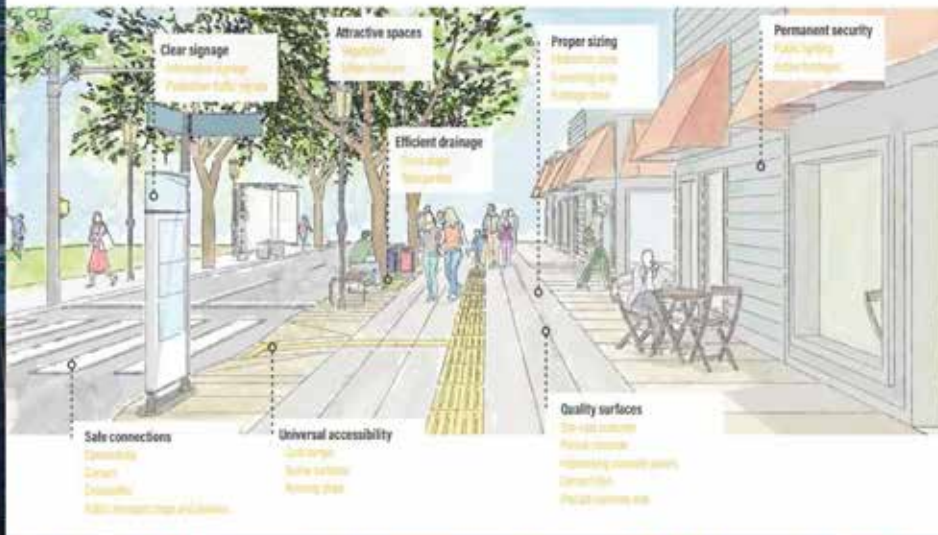


(Information about Sidewalk Maintenance)

Solutions and Suggestion for Sidewalks based on Features

- Designing and upgrading sidewalks based on 8 principles namely proper sizing, universal accessibility, safe connection, clear signage, attractive spaces, security, quality surface & efficient drainage.
- It can prevents getting loss on sidewalks.
- Can have a good communicate at sidewalks

Image ES-1 | The eight principles of the sidewalk and its elements



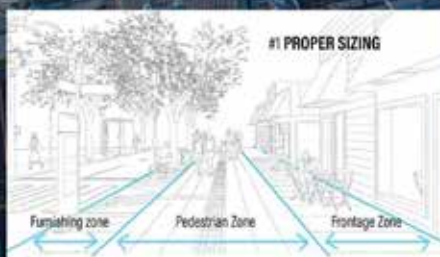
8 Principles to Have a Better Sidewalks

1. Proper Sizing
2. Universal Accessibility
3. Safe Connection
4. Clear Signage
5. Attractive Spaces
6. Security
7. Quality Surface
8. Efficient Drainage

Solutions and Suggestion for Sidewalks based on Features

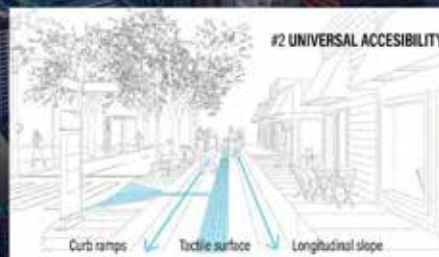
1. Proper Sizing

Principle	Element	Results
Proper Sizing	•Pedestrian zone <ul style="list-style-type: none"> - benches - tree •Furnishing zone <ul style="list-style-type: none"> - where people actually should walk, should have no obstacles •Frontage zone <ul style="list-style-type: none"> - accommodates the furniture of commercial establishments. 	Provides enough space for people to use the sidewalk in a variety of the ways : to walk, to socialize, to access building



2. Universal Accessibility

Principle	Element	Results
Universal Accessibility	•Curb Ramps •Tactile Surfaces •Low-Angle Running Slope <ul style="list-style-type: none"> - for wheelchair users, pregnant women, the elderly 	<ul style="list-style-type: none"> - Provides an urban spaces that everyone can use - To help people with impaired vision and a consistent running slope



3. Safe Connections

Principle	Element	Results
Safe Connections	•Connectivity <ul style="list-style-type: none"> - intersections, alleys, stairs & public transport station. •Corners •Crosswalks <ul style="list-style-type: none"> - shorter blocks, raised crossings & traffic lights timed to pedestrians average walking speed. •Public transport stop and stations <ul style="list-style-type: none"> - have enough space around sidewalks transit hubs 	Ensure safe, continuous walking link to other means of transport.



Solutions and Suggestion for Sidewalks based on Features

4. Clear Signage

Principle	Element	Results
Clear Signage	•Informative Signage <ul style="list-style-type: none"> - Maps and directions to places of interest - facts about neighborhood and community •Pedestrian Traffic lights <ul style="list-style-type: none"> - at intersections 	Promotes communication between people and urban spaces



5. Attractive Spaces

Principle	Element	Results
Attractive Spaces	•Vegetation <ul style="list-style-type: none"> - positioning and type of trees •Urban Furniture <ul style="list-style-type: none"> - garbage bins - benches 	Provides an environment where people feel comfortable and encouraged to use the space



6. Security

Principle	Element	Results
Security	•Public Lighting at the Pedestrian Scale <ul style="list-style-type: none"> - active and transparent ground floor building frontages 	Invites people to occupy urban spaces more regularly and improves security



Solutions and Suggestion for Sidewalks based on Features

7. Quality Surfaces

Principle	Element	Results
Quality Surfaces	•Site-Cast Concrete •Porous Concrete •Interlocking Concrete Pavers •Cement Tiles •Precast Concrete Slabs	Confer a sense of comfort and safety while walking
	<i>* The materials used to construct sidewalks needs to be consistent, stable, slip-resistant</i>	



8. Efficient Drainage

Principle	Element	Results
Efficient Drainage	•Cross Slope <ul style="list-style-type: none"> - perpendicular to the running slope - should ensure efficient drainage without being too steep •Rain Garden <ul style="list-style-type: none"> - help by reducing the volume of runoff and taking pressure of the drainage system 	Fosters sidewalk resilience





**THANK
YOU**

Urban disaster management with digital technology

Team F



TYPES OF NATURAL DISASTER



Geophysical

a hazard originating from solid earth

- earthquakes
- landslides
- volcanic activity



Hydrological

caused by the occurrence, movement and distribution of water on earth

- floods
- avalanches



Meteorological

relating to weather conditions

- cyclones
- storms



Climatological

relating to the climate

- droughts
- wildfires



Biological

caused by exposure to living organisms and their toxic substances or diseases they may carry

- disease epidemics
- insect/animal plagues

FUNDAMENTAL CAUSES OF NATURAL DISASTERS

1. Global warming
 2. Tectonic movement
 3. Moon activity
 4. Mining
 5. Deforestation
 6. Soil erosion
 7. Seismic activity
 8. Air pressure
 9. Ocean currents
 10. Pollution
- etc.

2,018

2,018 NATURAL DISASTERS SINCE
2010 (366 PER YEAR IN AVERAGE)

822

822 FLOODS AND 525 STORMS
BETWEEN 2010 AND OCT. 2015

139,000,000

139 MILLION PEOPLE /YEAR ARE
AFFECTED BY NATURAL DISASTERS

72,205

72,205 PEOPLE KILLED ANNUALLY
BY NATURAL DISASTERS

Recent High-impact Disasters



PORT-AU-PRINCE (HAITI)

- 01/12/2010
- **7.0 magnitude** earthquake
- **230,000 / 316,000** estimated deaths
- **300,000** injured
- **1.5 million** initially displaced from their homes



TOHOKU (JAPAN)

- 03/11/2011
- **9.0 magnitude** earthquake
- **15,893** estimated deaths
- **6,152** injured
- **2,567** missing
- **121,747** totally collapsed properties

Floods and Landslides

- **Flooding** is the most common and frequent disaster that happens in many of Asian countries
- Flooding can cause **landslides**

Causes of flooding

- **Typhoon and heavy rainfall** due to **climate change**, they're becoming frequent and stronger year by year
- **Overflowing river**



BASIC INFORMATION OF

ASAKURA CITY /FUKUOKA

- Located in **Western Japan**
→ **Typhoon hits a lot every year**
- Area: **246.71km²**
(**4th largest** in Fukuoka pref.)
- Population: **52,444**
- Rate of population over 65:
32.0%
→ **Highly aged** city



River Map of Asakura City area



- Asakura City is blessed with abundant water resources.
- There is "Chikugo River" which is the **largest river in Kyusyu region**.
- There are also "Sata River" and "Koishigawa River" which are also large.

Damages of Heavy Rain in Asakura City

On **July 5, 2017**, Asakura City was hit by **heavy rains** with a maximum rainfall of **over 700 mm (9 hours)**

Death toll: **33**

Residential damage: **1,469 houses**

Typhoons and torrential rains inflicted maximal damage over past 10 years on Western Japan.



ASAKURA CITY'S EXISTING

Disaster Prevention/mitigation Countermeasures

Diversion channel in Asakura City

- When the water level exceeds, it **disperse the flow during floods.**
- They uses the field of div. channel as a **"Municipal Ground"** that citizen can use with a small fee.

Countermeasure for Flood
in Asakura City #1



Yamada Weir

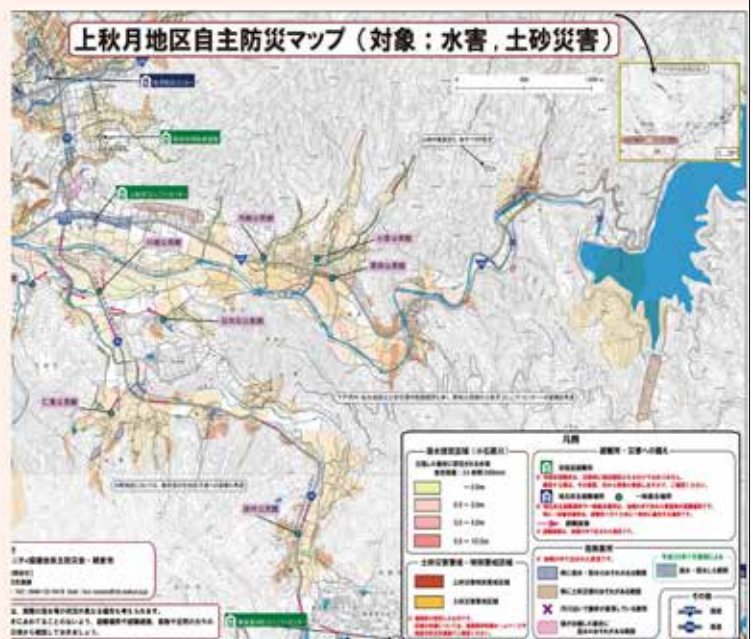
- It was first built during the **Edo period** on the right side of the **Chikugo river** to **protect farmland from drought**.
- However, it turned out to be protecting the area from floods.



Countermeasure for Flood
in Asakura City #2

Hazard Map

- Asakura City provides a hazard map for all kinds of disasters including floods.
- You can either carry or put it on the wall of your house.
- There is an online ver. which you can see on city's website.



Countermeasure for Flood
in Asakura City #3

Fukuoka pref. Disaster Prevention Website

Countermeasure for Flood in Asakura City #4

In this website, you can see

- Alerts
- Info. of recent disasters
- Evacuation order
- Guide to prepare for disasters
- Weather info.
- Shelter location
- Chat support etc.



Basic concept of our Ideas for Managing Urban Disaster

1. Drone in disaster management

search, rescue, and transportation of goods



2. SNS in disaster communication

Social media relief updates are useful for aid agencies to get real-time updates from affected areas.

Apps:

- JP: Kokodayo
- ID: BMKG
- TH: Thai Disaster Alert

Idea for managing urban disaster #1

Physical method

Digital system

- Rain level stations with AI
(Real time data × Big data)
- Alert system (Similar to "J-Alert")
- Digital sign board around the city
- IoT (CCTV monitoring) connected with the map
- AI Prediction

★Combining disaster science data and artificial intelligence

- Predict flood level and potential flood point risk
- Reducing disaster risk

The information from AI can be used in conjunction with urban planning and design for the future.



Idea for managing urban disaster #2

Robot and drone

- Observation
Searching for unsafe areas from the sky
Collecting geography data
- Rescues
Searching for missing people
Transportation of necessary goods
Provide communication in difficult-to-reach location



Idea for managing urban disaster #3

App/Website

- All in one app/website
- Add and provide new information so that there are things make it different
- Shared location (easy for rescuers and victims to access and help faster)
- more accessible for everyone (app + website)
- Have information about Disaster Management Post for logistical and medicine



More ideas for App/Website

1. EARLY WARNING SYSTEM

Spacial and geographical information system

2. EVACUATION ROUTE

3. GATHERING POINTS/ SHELTER LOCATIONS

4. MAP OF THE DISTRIBUTION OF FLOOD-PRONE AREAS

5. LANDSLIDE POTENTIAL MAP

6. MAP OF POTENTIAL WATER CATCHMENT AREAS

7. SURVIVAL GUIDE



Idea for managing urban disaster #4

Fun × Education

-Simulation

Visualize how much rainfall and how much flooding will occur with AR

-Game

Playful learning of actions to take in case of flooding

Question page



Score page



Educational contents by
LINE's official account (JP)

SOURCES -1

WHAT IS A DISASTER

<https://www.ifrc.org/what-disaster#:~:text=Disasters%20can%20be%20caused%20by,and%20vulnerability%20of%20a%20community>

31 CAUSES, EFFECTS & SOLUTIONS FOR NATURAL DISASTERS

<https://environmental-conscience.com/causes-effects-solutions-for-natural-disasters/>

FLOODS

https://www.who.int/health-topics/floods#tab=tab_1

IMPACTS OF SUPER TYPHOONS AND CLIMATE CHANGE

<https://safetymanagement.eku.edu/blog/when-disaster-strikes-technologys-role-in-disaster-aid-relief/>

EMERGENCY MANAGEMENT IN THE UNITED STATES

https://training.fema.gov/emiweb/downloads/is111_unit%204.pdf



SOURCES -2

USE OF DRONES IN DISASTERS

https://dronebank.jp/business/cat008/post_23.html

REDUCING DISASTER RISK WITH AI

<https://techblitz.com/one-concern/>

WHEN DISASTER STRIKES: TECHNOLOGY'S ROLE IN DISASTER AID RELIEF

<https://safetymanagement.eku.edu/blog/when-disaster-strikes-technologys-role-in-disaster-aid-relief/>

FLOODING SIMULATION USING AR

<https://www.youtube.com/watch?v=vcYYWbm0IjM>

3-MINUTE EVACUATION DRILLS SMARTPHONE EVACUATION SIMULATION <FLOOD DAMAGE>

<https://www.sp-hinan.jp/suigai/pc/>



SOURCES -3

ASAKURA -KYUSHU/ FUKUOKA PREF.

https://shokkyoto.jp/ml/en/sub/fukuoka_asakura

YAMADA WEIR: ASAKURA'S INNOVATIVE IRRIGATION SYSTEM

<https://visitasakura.com/yamada-weir-the-symbol-of-asakuras-farmers-hard-work/>

FLOODS' HAZARD MAP BY ASAKURA CITY OFFICE

<https://www.city.asakura.lg.jp/www/contents/1332392951874/index.html>


"DIVERSION CHANNEL" PROPOSAL FOR FLOOD COUNTERMEASURES

<https://www.nishinippon.co.jp/item/n/405041/>

FUKUOKA DISASTER PREVENTION INFORMATION

<https://www.bousai.pref.fukuoka.jp>



The background of the slide is a close-up photograph of a rose, with its petals and surrounding autumn leaves in shades of brown, orange, and green. The image is slightly blurred and has a warm, muted color palette.

Team F

**Thank you
for
listening!!**

4

参加学生アンケート Program Questionnaire

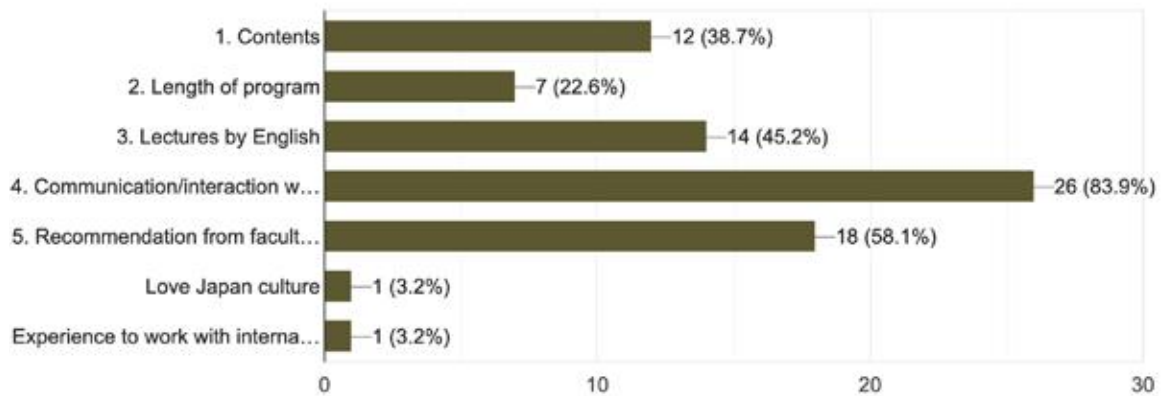


Questionnaire Result

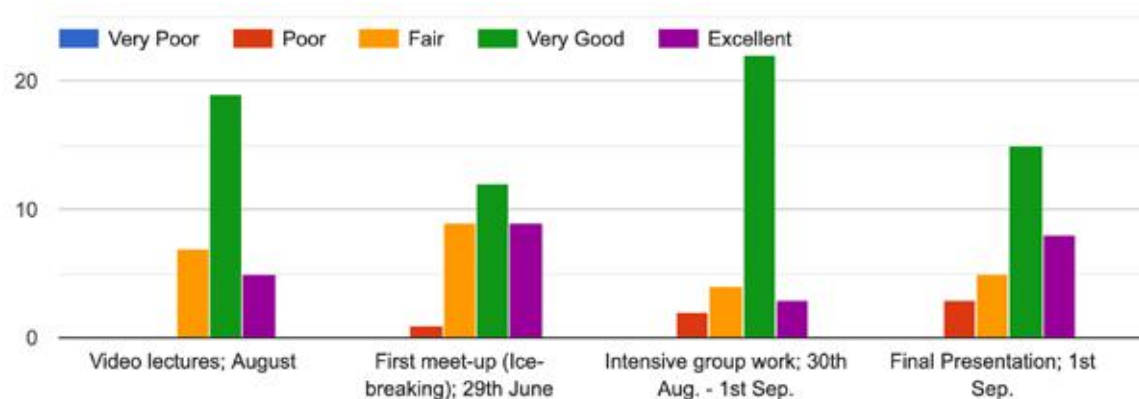
アンケート結果

What was the main reason for choosing our program? (Check all that apply)

31 件の回答

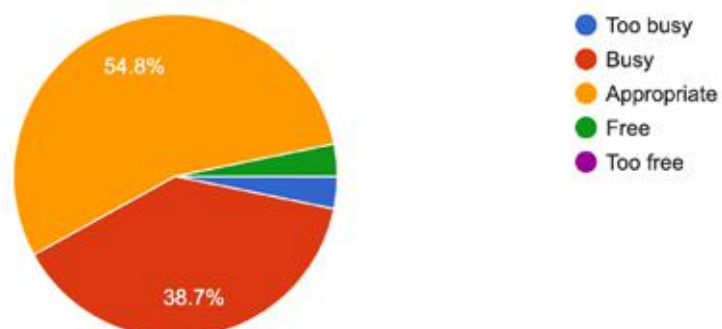


Program Evaluation—Please rate the program on the following items:



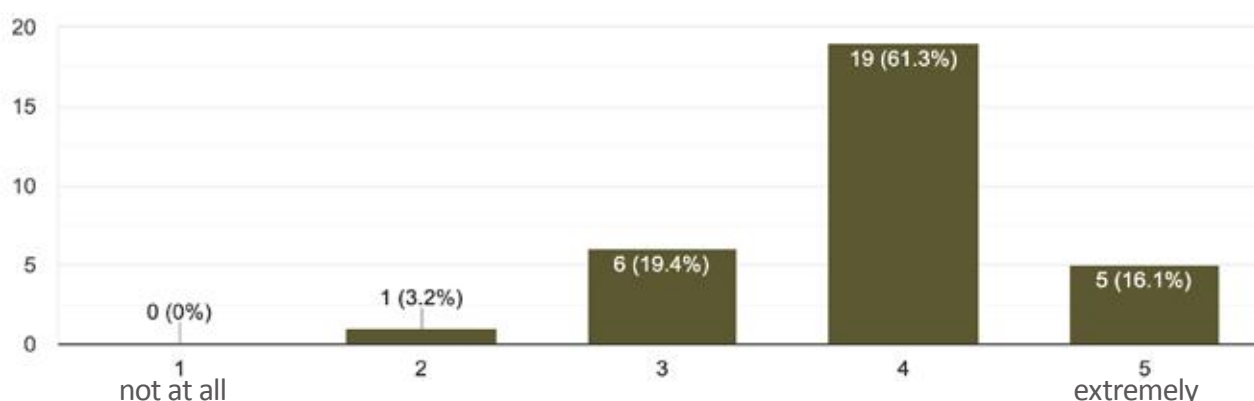
How do you feel about the time schedule of the program?

31 件の回答



Overall, to what extent was attending this program worth your time?

31 件の回答



Participants comments 参加者コメント

This program is very good and provides an opportunity for us to learn about current issues and teach us about problem solving to provide solutions to a problem and also be guided by professors and also provide experience on how to work as a good team with all participants.
I want to say thank you very much. because of this forum I get a lot of new experiences. and I really enjoy and appreciate with all the schedule.
Though it wasn't so much as I expected, I believe it was worth attending especially in such time when we're not able to communicate and interact with foreign people.
It was tough because foreign students were not positive.
This program's really interesting. i got the experience of working with foreign students from other countries.
It would be much better if we could actually see and interact face to face, since many of students could not participate because of poor connections. yet, overall, it was interesting opportunity.
It was a good experience for me to communicate in English and make up one presentation with foreign students. So, I recommend others to join this program next year!!
It will interesting if we can meet and discuss with each other. So far this programme really good and give me a lot knowledge about digital services and other lecturers notes from all faculties really help me in my course programme. I just dissapointed to myself because i can't attend fully for 2 weeks lecturers notes, at that time i'm too busy with my studio exhibition and examination. Anyways, hope this programme will be a good experience to me and others. Thanks for all faculties especially YCU ! You are so nice!
This is my first time to discuss with foreign students so it was good time!
This lecture has been very meaningful to me.I was able to achieve my initial expectations of active communication in English.This is thanks to the active support of the other students who worked with me, especially the YCU students. As a reflection point, I was not able to interact with students from other universities.My language skills were poor and I was desperate to speak, so I wasn't able to listen carefully.I would like to continue studying so that I can "communicate" in English.
Thank you for lecturing us. This program improves my English skill and develops knowledge of urban studies.
it's a very cool program that make me know friends from other universities and learn about the condition of each country.
I was happy to be able to participate in this lecture related to overseas students. Through this opportunity, I was able to acquire my communication skills. I would like to do my best to study English from now on.
The workshop schedule should not coincide with class times.
Maybe because my own uni schedule is very busy as well that's why it was a bit challenging for me to divide my time between the IACSC work and my own work.
Thank you YCU for the IACSC Student program. This is the second time i joned in this program (2021 & 2022). But I prefer the way YCU organized in 2021 than in 2022. Because in 2021, we had twice presentation times (one with the students of our faculty and another with international students), we can understand the theme, and can share the situation and solution in our country deeply.

It was hard to realize the environment where all of students' online condition is well, so some students from other countries could not join our meetings. We(Team D) could have constructive meetings, but I feel like the contents of the presentation were relied on the ideas from Japanese students, rather than other country's students' ones because the online connection was not good that most of foreign countries' students need to turn off their camera and mike. Our presentation could be more improved if we could exchange opinions more friendly and deeply through the conversation across the countries.
I hope that we can get involved the programme in real life
To be honest, the 3-day discussion was difficult because many members had variously different telecommunication environments and available time to participate, which made it difficult to get the discussion going. One of the goals of the program was to find out the issues that are common among the five countries. However, I wasn't able to gain a good understanding of the situation of people in other Asian countries through the discussion, partly because my English skills were not good enough. What I did manage to learn was that the traffic congestion and garbage problems are different between Japan, which is in the middle of depopulation, and other Asian countries, where the population is growing. They seem to have the same problems, but the ways to solve them are completely different. I think this made the discussions difficult. However, I did have some good experiences. Originally, "urban digitalization" was a topic that I was not familiar with because it was different from my main research subject. By working hard to find case studies, attending lectures, and writing reports, I was able to learn about the current situation and challenges of the development of cities and digital technology. Also, after watching other students' presentations, I came to believe that digital technology's ability to collect data on human life should be studied more. In discussion, I think I was able to actively take on the role of a facilitator and presenter. I learned some vocabulary for talking about urban development in English too.
I hope YCU students will become more confident in English speaking. Thank you.
It is a very great opportunity to meet new people from different country.
Thank you for organizing the class.
It was very interesting to learn from students from different universities.
I like how we get to know people from different universities and get a chance to working them them.
I think this program should consider the convenient day and time of all participants.
It was a very valuable opportunity to talk with students from other countries about the content that combines digital and urban. However, it was difficult to communicate with students from other countries.
Through this program, I could know that seeing the digitalization as a tool for solving urban problems is common across the world. It was interested that students gathered from all over the world thought the same approaches to the solution, digitalization, even though the urban issues vary across countries. However, the environmental burden is highlighted when it comes to sharing services which are categorized as the solution of digitalization. Because, to keep up with the demands for digitalization, lots of venture companies or manufacturing companies invest and bring too many sharing products to the market at one setting. Mass production will possibly result in mass disposal, so I could understand how much of impact extended producer responsibility has on the valuable environmental effect. This time, group D including me suggested the idea of the ICT collection systems and a utilization of consumer data by using apps so that we can create the systems that promote the 3Rs. Through this total discussion, I could understand well that digitalization can be an important measure to help reduce pressure on the environment and creating the successful cases of digitalization in the city where is well populated can make it easier to reflect those systems on the local area. I could have discussion with students came from three different countries including Japan, and I think the fact that everyone unanimously agreed to the solution of the digitalization imply that lots of countries will follow the installation of this method in the future.
We don't have a lot of opportunities to communicate with foreign university students, I was happy to think about the future of the cities together. Since each country and region has many different characteristics, it was difficult for me to start sharing each other's backgrounds, but it was a very good experience in terms of improving communication.
This is my first time to discuss with foreign students, so it became valuable time to me. I was not able to communicate with all team member due to several problem, but I did my best in speaking in my poor English. Also, I knew some issues of Asian countries other than Japan and I learn strong and weak points in the city of Japan. Today, the time to communicate with people in other countries is decrease, so I am happy to join this program!! Thank you.
I participated in this program because I could communicate with foreign students in English. However, because of the bad network, it was sometimes difficult to communicate with other members by only talking. But it was also a good experience for me. Thinking of the contents of this program, I was not familiar with the subject of solving a problem in a city with DX. Therefore I was worried about taking part in this program first, but it was a exciting time for me to exchange ideas with foreign students.
I was a bit disappointed that many of foreign students could not participate in arguments because of their lack of internet connections and their schools' curriculums. Also, even though it was tight schedule, it would have been so nice to get a feedback on IACSC conference for gaining further knowledge. Although there were some unsatisfying points in this course, it was a great experience to complete a presentation out of nothing and discussing with people who have different backgrounds and interests.

To be honest, it was quite a tough program. Since only YCU students had turned the camera on most of the time, we struggled with group work because we did not know the reactions of students from other countries. But we were able to complete the presentation by sharing ideas using chat, Miro, google, whiteboard, etc. I was not very good at speaking and could not easily convey what I wanted to say to everyone, so I used a whiteboard and Miro to illustrate what I wanted to say. I learned that I should actively utilize tools that help me with my difficulties.

I enjoyed thinking about the city with students from all over the world using English, and I feel that we had a meaningful time. I hope to have another opportunity to meet with them in person. Thank you very much for organizing this lecture.

The most important factor was that "it depends on the team," but most of the students did not participate at all in the first place or were unable to communicate with each other due to the video and microphone being off, even though they were in the room on zoom. I felt sad and disappointed, and at the same time frustrated that I fell ill after working late through the night by myself, which interfered with the next day's group work. It was a good experience, and I now see the value in the three days of practical training that we gave our all with only two members of the team. I had high expectations for communication, discussion, and building new friendships across borders in English, so I am still very disappointed. I am even more anxious for future presentations because I feel that the research and discussions are still insufficient and the proposals are not consistent.

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