2017 Citizen Solutions Catalogue

URBAN INNOVATION CHALLENGE : CITYPRENEURS

Young SDGs Start-up Competition in Seoul

VENUE
GAEPO DIGITAL INNOVATION PARK &
THE PLAZA HOTEL

DATE
18 SEPTEMBER - 20 SEPTEMBER, 2017

SEOUL METROPOLITAN GOVERNMENT

UNITED NATIONS ESCAP
Economic and Social Commission for Asia and the Pacific

wfuna
World Federation of United Nations Associations

Seoul Digital Foundation
서울디지털재단

URBAN
INNOVATION
CHALLENGE
: CITYPRENEURS

Young SDGs Start-up Competition in Seoul

| Congratulatory Note

It was a great honour to have co-hosted the Urban Innovation Challenge: Citypreneurs event with Seoul Metropolitan Government, Seoul Digital Foundation, and the World Federation of United Nations Associations. This event brought together young innovators, private sector investors, and government officials to find ways of working together to achieve the Sustainable Development Goals through innovation.

The United Nations adopted the Sustainable Development Goals to set the world on a path towards a future that is more sustainable and inclusive. To ensure we achieve the ambitious goals, we must engage more people in developing new and more effective solutions, ranging from the delivery of public services such as health and education, to meeting the immense challenges of urbanization and climate change.

Platforms such as Citypreneurs have brought to the table innovative solutions that can be part of this global effort, and serves as an important community of practice to bring more innovators and investors into the ongoing work to achieve the SDGs, and to examine the opportunities for public and private sector collaboration to foster innovation, sustainability and inclusive societies.

I wish to congratulate all teams that participated, and extend an invitation to everyone work with us to develop innovations to achieve the Sustainable Development Goals by 2030.

Dr. Sangmin Nam
Officer-in-Charge, ENEA Office, UNESCAP

On behalf of the World Federation of United Nations Associations, I would like to congratulate all thirty teams for being selected to participate in the first Urban Innovation Challenge: Citypreneurs in Seoul. Part of WFUNA's mission is champion citizen-led action that supports the work of United Nations. Citypreneurs contributes to that mission by encouraging your engagement in the development of local solutions to global issues. As the world's population continues to move towards cities, solving urban problems becomes critical to a sustainable future. Through the participation of the various stakeholders in this challenge, we will come closer to achieving the UN sustainable development agenda and a better world for all. I congratulate all parties for making a choice to be a part of the solution. I would like to thank the United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP), the Seoul Metropolitan Government (SMG), the Seoul Digital Foundation, and the many sponsors, mentors, and investors for their partnership in preparing this event.

Bonian Golmohammadi
Securitary General, WFUNA

It was a great pleasure and honor to have co-hosted the Urban Innovation Challenge: Citypreneurs event with UNESCAP and World Federation of United Nations Associations. The event has brought us all innovators, investors and government officials closer into building a Sustainable Smart City.

The Seoul Digital Foundation aims to build a Sustainable Smart City by creating Seoul Digital Innovators. To achieve this goal, we a digital think tank of Seoul strive to bring creators and innovators together to share, collaborate and develop solutions in building a Sustainable Smart City.

We believe that the Urban Innovation Challenge: Citypreneurs serves as an innovative platform for the many young innovators to bring in creative solutions and ideas, investors to collaborate with young innovators and for government officials to all work together in building a Sustainable Smart City. Hence, we believe that the Urban Innovation Challenge: Citypreneurs would continue in bringing everyone together to be more creative and innovative.

I would like to congratulate and thank you all for participating the Urban Innovation Challenge: Citypreneurs. Let us all meet and work together to build a Sustainable Smart City.

Dr. Chi Hyung Lee
President, Seoul Digital Foundation

It was a pleasure to contribute to the first ever Urban Innovation Challenge: Citypreneurs, organized by WFUNA and UNESCAP in cooperation with the Seoul Metropolitan Government and the Seoul Digital Foundation. The event was a great initiative bringing together young entrepreneurs with investors from the private sector, public policy makers and international assistance providers. We truly appreciated the focus on the Sustainable Development Goals and youth empowerment, as these are priority topics for UNDP.
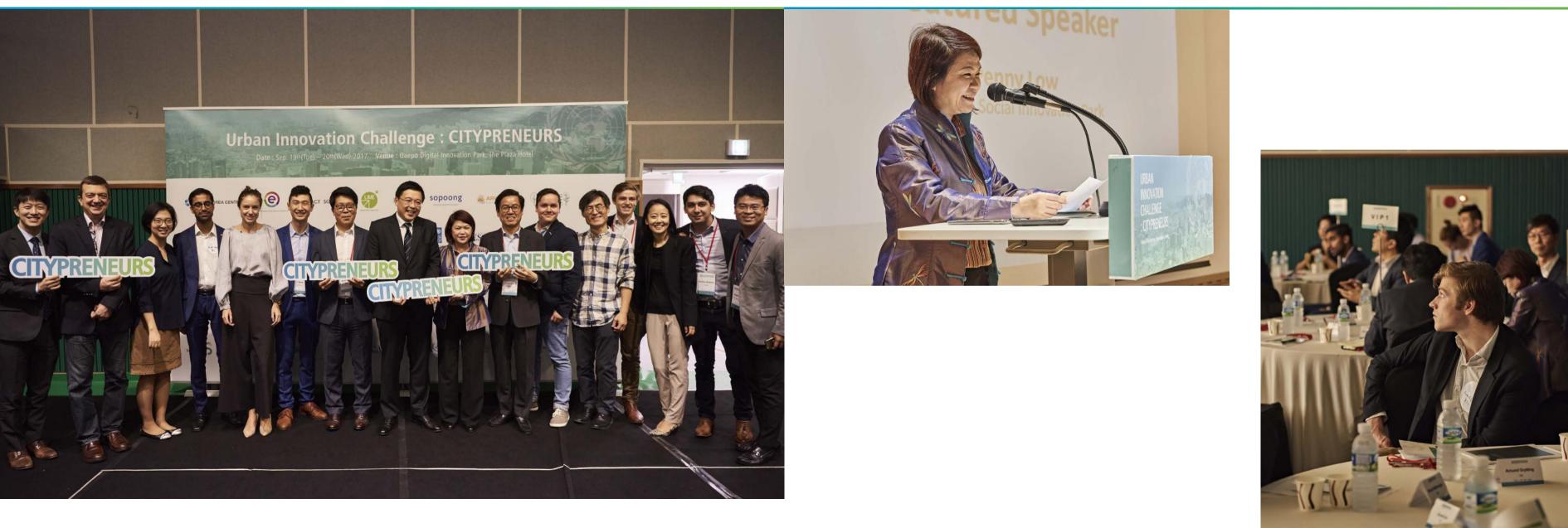
New technologies can create great opportunities for youth entrepreneurship. UNDP is aiming to connect stakeholders from all sectors to identify best-fit solutions to assure the implied change on the labour market is in accordance with the targets set in the SDGs, i.e., sustainable and inclusive. Technology-based start-ups can greatly contribute to mutually benefitting innovation in the urban context.

Youth is not only an important stakeholder, but also a catalyzer for the realization of the 2030 Agenda, while urbanization is a key feature of the changing global environment, entailing both great opportunities and great challenges. The challenges associated with megacities like Seoul need to be addressed in a sustainable manner, based on an all-of-society approach. Therefore, platforms like the citypreneurs event are crucial and a model that should be extended. They not only connect young people with decision-makers in the public and private sector, but give them the opportunity to articulate their ideas and vision for improving living conditions in cities.

UNDP congratulates all the participants for their achievements and we wish all current and future young entrepreneurs the very best in realizing their ideas and vision.

Dr. Balázs Horváth
Director, UNDP Seoul Policy Centre
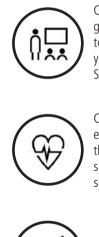
| Program Goal

Urban Innovation Challenge, also known as "CITYPRE-NEURS" is a start-up competition that seeks to solve urban problems, as defined and measured by the United Nation's Sustainable Development Goals (UN SDGs), in close collaboration with city governments, starting with Seoul.
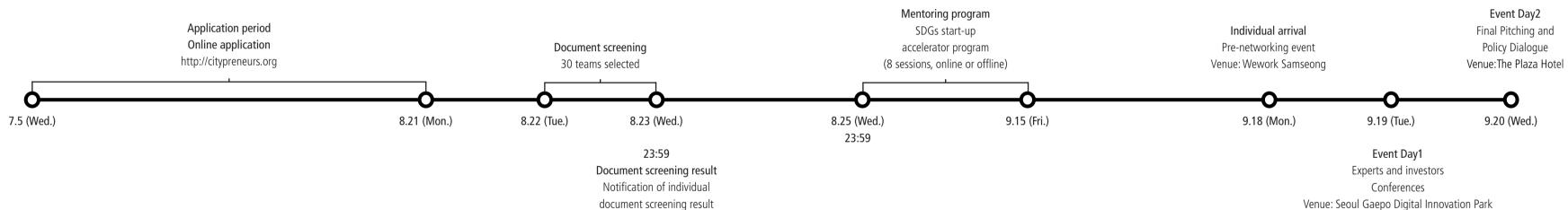
Connect and expand communities and groups of public officials, private investors and enterprises, IT professionals, and youth working towards achieving the SDGs.

Create an innovative space for young entrepreneurs worldwide, especially from the Asia-Pacific region, to find inspiration, share ideas, and receive mentoring on SDG solutions.

Showcase and support technology-based business

| Date September 18, 2017 (Mon.) – September 20, 2017 (Wed.)

| Location We Work Samseong, Seoul Gaepo Digital Innovation Park, The Plaza Hotel

| Participants Youth Entrepreneurs

| Hosts

| Sponsors

15

| Timeline

Application period
Online application
http://citypreneurs.org

Document screening
30 teams selected

Mentoring program
SDGs start-up
accelerator program
(8 sessions, online or offline)

Individual arrival
Pre-networking event
Venue: Wework Samseong

Event Day2
Final Pitching and
Policy Dialogue
Venue:The Plaza Hotel

7.5 (Wed.)　　8.21 (Mon.)　　8.22 (Tue.)　　8.23 (Wed.)　　8.25 (Wed.)
23:59　　9.15 (Fri.)　　9.18 (Mon.)　　9.19 (Tue.)　　9.20 (Wed.)

23:59
Document screening result
Notification of individual
document screening result

Event Day1
Experts and investors
Conferences
Venue: Seoul Gaepo Digital Innovation Park

| Awards

30 selected Citypreneurs

· SDGs start-up accelerator program
 (8 sessions, online or offline)

· 1-on-1 meetings with investors

· Rights to use CITYPRENEURS branding

· Lodging in Seoul provided

· Roundtrip airfare to Seoul (conditional)

3 Finalists

· Total grant of 24,000,000 ($22,000)

· Additional grant of 60,000,000 ($55,000)

· Private Demo Day with investors

· Invitation to international forums

· Publication in investment magazines and reports

Urban Innovation Challenge: Citypreneurs VIP Leaders' Breakfast Meeting |

| List of Participants

Lead Discussants

Rebekah Kang: CEO, FiscalNote Korea
Chull-Young Lee: President, ARK Impact, Representative of Toniic
Chi Hyung Lee: President, Seoul Digital Foundation
Balazs Horvath: Director, UNDP Seoul Policy Center
Sangmin Nam: Deputy Director, UNESCAP-ENEA

Moderator

Beniam Gebrezghi: Partnerships & Youth Programme Specialist, UNDP

Participants

Jonathan Wong: Chief, Technology and Innovation Section, Trade, Investment, and Innovation Division, UN ESCAP
Chull-Young Lee: President, ARK Impact Asset Management
Ji-Yong Lee: Professor, Duksung Women's University
Jungjun Ahn: Information Planning Manager, Statistics Division, Seoul Metropolitan Government
Peter Jaewon Chun: CEO, XNTree
Doug Duck-Joon Lee: CEO, D3Jubilee
Jonathan Lauer-Stumm: French Tech Coordinator, Embassy of France
Amund Grytting: Co-founder & Managing Director, Young Sustainable Impact
Bosun Kim: co-CEO, Asiance
Li Zhou: Associate Social Affairs Officer, UN ESCAP
Lea Zoric: Policy Analyst, UNDP
Joseph Lim: Partnerships Officer, WFUNA
Amine Ammor: Programs, Consultant, UNDP

1. [On the Potential for Youth, Innovation and Entrepreneurship]

    The meeting acknowledged that all around the world, young people are responding to challenges of the day through innovation by contributing fresh ideas, building bridges and driving the human development they want to see for themselves. Innovation and entrepreneurship offer important solutions and the 4th Industrial Revolution offers many opportunities for the future. Initiatives that bring the different sectors together, alliances that really achieve the SDGs through innovation, entrepreneurship, and the harnessing young people's leadership are the way to go.

2. [Addressing Skepticism on Resolving the SDGs on Time]

    Skepticism regarding the achievability of the SDGs within its given timeframe can be countered by approaching the problem from a different angle. Rather than thinking of solving the SDGs in a linear manner, exponentially thinking about the way that development is happening right now is key to achieving the 2030 Agenda.

3. [On the Economic Potential of Youth]

    Decent policies, innovation, social entrepreneurship and education can help achieve what the SDGs are looking for: to leave no one behind. The needs of marginalized communities can be addressed. It is also important to keep in mind that gender equality is not just a goal, but actually an instrument in maximizing the amount of human potential.

4. [On Social Entrepreneurship in the Political Sphere]

    The Meeting agreed that IT technology is well developed and utilized for various sectors, yet remains largely untapped in politics. These 'untouched' industries should be commercialized and make profit while connecting people to better solutions.

5. [On Impact Investing and Profit]

    The Meeting Acknowledged that firms such as ARK Impact Asset Management demonstrate how social development and profit can go hand in hand, making investments into social development projects much more attractive to investors. The emphasis should be placed on how impact investment does not compromise on investment return. Although social and environmental values is important, cannot achieve sustainable development without financial value.

6. [On the Integration of technologies for Smart Cities]

    The Meeting recognizes the impact of the 4th Industrial Revolution on the public and private sectors. While the concept of a city was defined as a physical space in the past, the city has been further extended and connected through digitalization. It is important for governments to provide data infrastructure and access to data to social ventures for their success.

7. [On Public-Private Partnerships Strategies]

    The Meeting agreed that, beyond the public and private sectors, more people need to be brought into PPPs. The common ground of PPPs is to boost up local economy and utilize local R&D resources to cultivate innovation sites similar to Silicon Valley. Venture capitalists can also offer opportunities to startups to solve any challenges of the cities. Nurturing startups that are doing something for the city will benefit the public, private sectors and people since it is logical to give them sound opportunities for business. It's a sound business model for us to give them proper sound opportunities for business.

8. [On Youth Motivations in Driving the Impact Industry and Contributing to Sustainable Development]

    The Meeting recognized that Youth want to help themselves and contribute to their own future by creating the life they want to live in. A lot of them feel that the state that we are in now is not what they want for the future, which drives them to create new solutions.

9. [On Private Sector Impact Investment]

    Incubators are approaching the UN, asking to establish partnerships. Three objectives: 1. unleashing leadership of young people 2. solving social challenges 3. sustainable development. The conversation is focused on all three of these tenets.

Urban Innovation Challenge: Citypreneurs Policy Dialogue |

| List of Participants

Panelists

Yoon-Hee Lee: CEO, AfterRain
Doug Duck-Joon Lee: CEO, D3Jubilee
Seong-Jin Kim: Executive Director, Seoul Digital Foundation
Beniam Gebrezghi: Partnerships & Youth Programme Specialist, UNDP

Moderator

Jonathan Wong: Chief, Technology and Innovation Section Chief,
Trade, Investment, and Innovation Division; UN ESCAP

1. [On the Potential for Public-Private-Partnerships in Achieving the SDGs]
   The two biggest shifts that are needed for the SDGs are to orient entrepreneurship
   and investment towards the environment and society, not just the economy, by
   moving from entrepreneurship to social entrepreneurship and from investment to
   impact investment.

2. [On Youth Entrepreneurship]
   To continuously address the issues startups are attempting to solve, R&D and con-
   necting startup work to policies are vital steps in providing the necessary momentum
   for other people to join their efforts. Concerns were raised with regards to contact
   points and funding: there is a call for (1) more networking centers to be created to
   connect startups and (2) more balanced funding.

3. [On Private Sector Involvement]
   The panel agreed that a good partnership needs to exist between the public and the
   private sectors or they will be competitors. Changes in patent law and legislation on
   intellectual property rights need to be implemented to encourage a more innova-
   tor-friendly ecosystem, which would not only incentivize innovators to carry on with
   their work, but also encourage social venture and have more mainstream investors
   invest in the concept of 'doing well' while 'doing good'.

4. [On Public Sector Involvement]
   Considerations are also being made to incorporate 'next step support' into policies
   to deal with the current replication of startup goods by the public sector. As such,
   there is a need to protect startups by (1) purchasing their products, (2) 'paying-as-
   you-go' to the business, (3) offering 'social impact bonds' which pay startups with
   added incentives when they achieve set goals.

5. [On International Involvement]
   The government can play a central role in pushing forward entrepreneurship policies
   in many different aspects such as: density, talent, education, culture and assuming
   risk of failure of startups. It is important that the government sees where people are
   meeting, where ideas are being created, what and where the co-working spaces are,
   who is supporting them, while also ensure young startups from other countries to
   receive talent visas and support in a given country. They need to set up an education
   system to get young people ready for what it actually means to be an entrepreneur
   and promote work with universities, speak about social entrepreneurship, and share
   in the financial risk-taking of young startups, especially for the least developed
   countries in the region who have nowhere to turn to for funding.

6. [On Missing Data and Value Chains]
   The greater availability of data is essential to better advise governments on the
   challenges startups face. The UN needs look at the whole value chain of activities
   and be the convener that brings stakeholders together and sets up an alliance of
   youth empowerment enablers. The emphasis must be on alliance-building rather
   than specific intervention for the whole ecosystem to come together.

Participant Briefing Documents |

A summary of Seoul City urban issues were provided online to
all applicants to maximize the relevancy and impact of proposals

https://www.citypreneurs.org/procedure-1

SDG and URBAN INNOVATION CHALLENGE : CITYPRENEURS

①
Health Technology

Urban Innovation Challenge focuses on three critical urban isuues that we face today. "Health Technology, Education Technology, and Transportation & Environment."

SDG #3 is to "Ensure healthy lives and promote well-being for all at all ages." and target 3.9 is "By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination." In order to measure this target, there are indicators 3.9.1 "Mortality rate attributed to household and ambient air pollution", 3.9.2 "Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services) and 3.9.3 "Mortality rate attributed to unintentional poisoning."
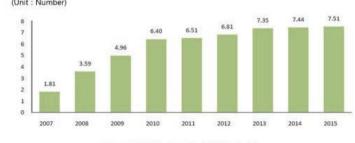
A. Seoul Needs Analysis

i. The survey of Seoul Metropolitan city, '9 Key Areas of Citizen Needs' asked citizens to indicate what they perceive as the most important problems facing the city government. The results reveal that the public's top priority issue was to improve air quality, including the reduction of yellow dust and ultrafine dust. The table below shows the increase in the total amount of emission of pollutants in the metropolitan region over the period from 2007 to 2014, despite the city's policy to cut emissions.

Unit: Ton

Cate-gory	2007 Emission	2007 Total Allowed Emission	2009 Emission	2009 Total Allowed Emission	2011 Emission	2011 Total Allowed Emission	2014 Emission	2014 Total Allowed Emission
NOx	85,670	83,157 (97.1%)	86,380	80,842 (93.6%)	87,570	66,964 (76.5%)	90,673	46,148 (50.9%)
SOx	7,370	7,154 (97.1%)	7,229	6,766 (93.6%)	7,511	5,744 (76.5%)	8,523	6,375 (74.8%)
PM10	3,830	3,803 (99.3%)	3,901	3,527 (90.4%)	3,952	3,252 (82.3%)	4,084	2,702 (66.2%)
VOC	92,600	89,884 (97.1%)	96,435	90,252 (93.6%)	101,255	77,429 (76.5%)	108,899	57,274 (52.6%)

Reference: Woon Soo Kim, Yoo Jin Choi, 2011, A Study on Establishing Measures to Reduce Pollutants to Achieve Seoul's Air Quality Improvement Goals

Table 1.
The Total Amount of Allowed Emission to Achieve the Target Connection of the Seoul City Air Quality Management Plan

ii. Expanding the provision of medical and social welfare service to vulnerable populations tops the list of priority areas in welfare sector where citizens want the city government to address. This is followed by the inspection of medical services, disclosure and inspection and expansion of childcare services.

iii. According to the survey 'Health Issues and Health Care Policy Needs' for 1,750 citizens of Seoul in September 2014, the most common health problems for citizens were cancer (14.5%), hypertension (13.0%), obesity (10.7%) and diabetes (7.3%). Among these, the solution was to provide information on health care and promotion (26.5%), economic support for medical expenses and health center operation (21.1%) and support programs for disease prevention and health care. Finally, health care sector needs by population were the highest for each age group. For infants and pregnant women, immunization for infant and child (48.8%), for young people, mental health card (49.3%), for adults, managing chronic diseases such as blood pressure and diabetes (26.9%), and for the elderly, prevention and management of dementia (39.5%) was the highest. (* Reference: The 6th Seoul Health Care Plan Seoul)

iv. According to the Seoul Survey Report in 2016, the number of social welfare facilities per 100,000 population is 7.51 in 2015, showing a slight decrease from the previous year's increase, compared to the continuous rise from 2005. Social welfare facilities showed a large deviation by Gu (district), with the largest number 15.00 in Dobong-gu and the smallest number 2.29 in Seong-dong-gu. Therefore a gradual improvement in required for deviation by Gu.

(Unit : Number)
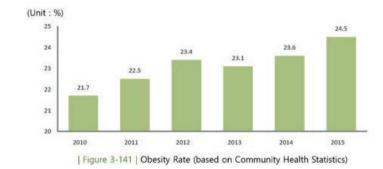
| Figure 3-135 | Number of Social Welfare Facilities

(Unit : Number)
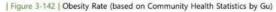
| Figure 3-136 | Number of Social Welfare Facilities (by Gu)

v. According to a survey of community health, the obesity rate in 2015 has continued to increase, demonstrating an upward trend since 2010.

(Unit : %)

| Figure 3-141 | Obesity Rate (based on Community Health Statistics)

(Unit : %)

| Figure 3-142 | Obesity Rate (based on Community Health Statistics by Gu)

②
Education Technology

SDG #4 is to "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" and target 4.3 is "By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university." In order to measure this target, there is an indicator 4.3.1 "Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex."

A. Seoul Needs Analysis
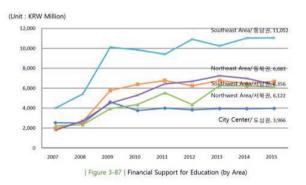
i. According to the Environmental Conservation Plan (2016 – 2025), demand for educational welfare is steadily increasing, such as free meals for elementary and middle school students, free education, and easing the burden of college tuition fee.
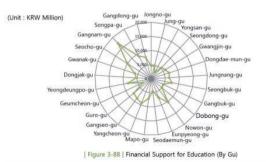
ii. The highest demand among the citizens of Seoul for the education sector was personality education for the youth, followed by the expansion of internet education for reducing private education expenses and the expansion of online education for everyone.

iii. Of the 446 complaints received and handled last year, the Civil Rights Commissioner who was newly established in 2017, announced that 17.7% of them accounted for the education sector.

iv. According to the Seoul Survey report in 2016, the amount of budget support for education in 2015 was KRW172,425 million, which was KRW2,786 million higher than the previous year. However, a wide variation in budget support for education between different areas have increased. It demonstrates increased financial support in the city center, northeastern and southeastern areas, while showing a decline in western and southwestern areas as compared with the previous year.

(Unit : KRW Million)

Note: Main office portion excluded

| Figure 3-86 | Financial Support for Education

(Unit : KRW Million)

| Figure 3-87 | Financial Support for Education (by Area)

(Unit : KRW Million)

| Figure 3-88 | Financial Support for Education (By Gu)
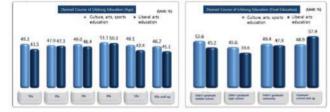
v. 2017 Seoul Survey Urban Policy Index Survey identifies various barriers towards partic-
ipation in lifelong education: heavy workload(35.9%); lack of confidence(32.6%), lack
of time(28.8%), cost of learning(18.0%), accessibility of nearby educational or training
facilities(17.4%, health(16.4%), and dissatisfaction with educational facilities.

vi. For desired lifelong education courses, 48.6% answered 'culture, arts, and sports educa-
tion', 45.2% answered 'liberal arts education', 36.8% 'occupational skills enhancement
education', 19.7% 'academic ability supplementation education', 17.4% 'literacy educa-
tion', 12.8% 'citizen education', and '8,1% 'formal education curriculum'. 'Culture, arts,
and sports education' had the highest desired ratio in all age groups.
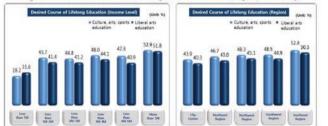
<Figure 3-55> Reasons to Not Attending Lifelong Education

<Figure 3-57> Desired Education Course of Lifelong Education

<Figure 3-58> Desired Education Course of Lifelong Education – Age group/Final Level of Education (1+2+3 Priority)

<Figure 3-59> Desired Education Course of Lifelong Education – Income Level/Region (1+2+3 Priority)

SDG #11 is to "Make cities and human settlements inclusive, safe, resilient and sustainable." and target
11.2 is "By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all,
improving road safety, notably by expanding public transport, with special attention to the needs of those
in vulnerable situations, women, children, persons with disabilities, and older persons." In order to measure
this target, there is an indicator 11.2.1 "Proportion of population that has convenient access to public
transport, by sex, age, and persons with disabilities."

A. Seoul Needs Analysis

i. 41% out of approximately 68,000 cases received in the citizens' assistance office is transport related
issues. Among those, 70% were about transportation policies such as route change, capacity expansion,
and fare reduction in public transportation, and safety measures of subways.

ii. 9 Key Areas of Citizens Needs of Seoul Metropolitan City survey suggests overcrowding on public transport
during commuting hours is the number one transport problem in the Seoul Metropolitan city, followed by
concerns on the parking shortage and illegal parking.

iii. Seoul Metropolitan City had analyzed the '2014 Big Data of Transportation Card' and as a result, there
were 111,141,000 people used public transportation per day, which is 1.3% increase compared to previ-
ous year and 11.3% increase compared to 2005.
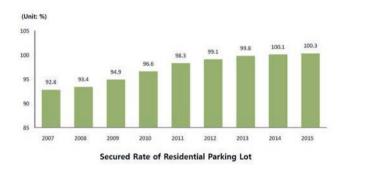
· Big issues of Seoul's public transportation in 2014 were opening of 2nd Lotte World and application of transfer
discount between subways of metropolitan area and light rails of Uijeongbu·Yongin area.
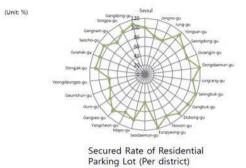
iv. Seoul Metropolitan City had analyzed the '2014 Big Data of Transportation Card' and as a result, there
were 111,141,000 people used public transportation per day, which is 1.3% increase compared to previ-
ous year and 11.3% increase compared to 2005.

③
Transportation
& Environment

v. According to the 2016 Seoul Survey Report, the secured rate of parking lots for residential areas in Seoul is rising annually, but the regional disparity is still very severe. Compared to Dongdaemun-gu, where secured rate of residential parking lot area is high, 118.9%, Seodaemun-gu is only 60.1%, reaching half of Dongdaemun-gu. Thus, parking lot supply business needs to be promoted mainly in areas where parking conditions are poor.

(Unit: %)

Secured Rate of Residential Parking Lot

(Unit: %)

Secured Rate of Residential Parking Lot (Per district)

vi. The satisfaction rate with the usage of public transportation facilities seems to be increasing, but physical improvements are needed in order to improve subway congestion. Line 9, opened in 2009, is especially lacking the rising demand, despite the 2-staged pre-raised number of cars. Assuring alternative solutions is needed despite the efforts to improve current traffic condition by organizing pre-raised number of cars and express bus during rush hours within major routes were made.

• **Installation Rate of Automatic Transportation**

As a result of evaluating the installation rate of elevators, escalators, wheelchair lifts and horizontal automatic sidewalks in all urban railway stations in Seoul in order to look into the citizens' mobility convenience, in October 2015, 96.7% answered Elevator, 86.6% answered Escalator, 62.6% answered Wheelchair Lift and 8.5% answered Horizontal Automatic Sidewalk (Moving Walk).

(Unit : %)
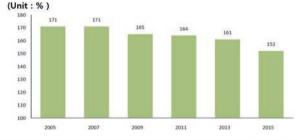
| Figure 3-202 | Installation Rate of Automatic Transportation

vii. As of 2015, the installation rate of convenience facilities within the city railway stations was 96.7% for elevators, 86.6% for escalators, 62.2% for wheelchair lifts, and 8.5 for horizontal automatic transmissions. The distribution rate for wheelchair lifts are lower compared to elevators and escalators, so there needs to be improvements made regarding this matter.

• **Transportation Satisfaction**

Transportation satisfaction of the citizens of Seoul Metropolitan Government (overall) was 6.59 points (average of 10 points), which showed a steady upward since 2005, and the satisfaction by transportation is 'subway' (7.01 points), 'bus' (6.88 points) 'taxi'(5.88 points).

(Unit: out of 10 points)

| Table 3-204 | Transportation Satisfaction

• **The Highest Congestion Level of the Subways**

The highest congestion level of the subways in Seoul, calculated by the number of people compared to the capacity per each subway car in the highest congestion zone, is 152% in 2015 which is 9%p decrease from 2013. By each subway line, the highest level of congestion was 205% in the Line 9 express train, which is the highest, and 106% in the Line 1, which is the lowest.

(Unit : %)
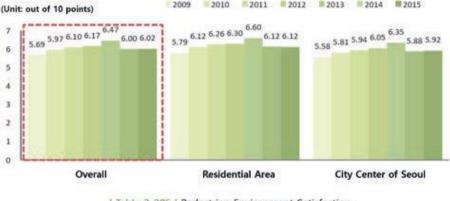
| Figure 3-203 | The Highest Congestion Level of the Subways

Period of the Survey 'Highest Congestion Level of the Subways'
• The congestion level of the subways is calculated as 34% when the number of passengers and seats match, investigated in odd years, from 2005 with two-year cycle. (However, the congestion level of Line 9 is based on the express train)

viii. According to '2017 Seoul Survey Urban Policy Index Survey', Seoul citizens' satisfaction rate upon transportation environment was 6.39, a slight drop from 2015, 6.59. Satisfaction rate of all means of transportation has slightly dropped in comparison to the previous year.

ix. Satisfaction on Pedestrian Environment of Seoul Metropolitan City scored 6.02 out of 10 as of 2015, in which it increased compared to previous year, but it did not recover the dropping gap of 2013 to 2014. There is a necessity in creating a pedestrian space that takes advantage of the characteristics of the area and create a pedestrian environment with high satisfaction rate in all areas of Seoul.

| Table 3-205 | Pedestrian Environment Satisfaction

| Table 3-33 | Pedestrian Environment Satisfaction

(Unit: out of 10 points)

	2010	2011	2012	2013	2014	2015	2015 Night Walks
City Center	5.80	5.95	6.13	6.04	5.98	6.07	5.88
Northeast Area	5.82	6.10	5.95	6.43	6.05	5.87	5.76
Northwest Area	5.85	6.02	5.98	6.25	5.71	5.92	5.57
Southwest Area	6.06	6.04	6.36	6.51	6.00	6.11	5.68
Southeast Area	6.17	6.23	6.39	6.74	6.12	6.15	5.77

| Business and SDGs

Why do the SDGs matter for business?

The Sustainable Development Goals (SDGs) define global sustainable development priorities and aspirations for 2030 and seek to mobilize global efforts around a common set of goals and targets. The SDGs call for worldwide action among governments, business and civil society to end poverty and create a life of dignity and opportunity for all, within the boundaries of the planet. Unlike their predecessor, the Millennium Development Goals, the SDGs explicitly call on all businesses to apply their creativity and innovation to solve sustainable development challenges.

The SDGs have been agreed by all governments, yet their success relies heavily on action and collaboration by all actors. The SDGs present an opportunity for business-led solutions and technologies to be developed and implemented to address the world's biggest sustainable development challenges. As the SDGs form the global agenda for the development of our societies, they will allow leading companies to demonstrate how their business helps to advance sustainable development, both by minimizing negative impacts and maximizing positive impacts on people and the planet. Covering a wide spectrum of sustainable development topics relevant to companies – such as poverty, health, education, climate change and environmental degradation – the SDGs can help to connect business strategies with global priorities. Companies can use the SDGs as an overarching framework to shape, steer, communicate and report their strategies, goals and activities, allowing them to capitalize on a range of benefits such as:

Identifying Future Business Opportunities

The SDGs aim to redirect global public and private investment flows towards the challenges they represent. In doing so they define growing markets for companies that can deliver innovative solutions and transformative change.

Enhancing the Value of Corporate Sustainability

Whilst the business case for corporate sustainability is already well established, the SDGs may for example strengthen the economic incentives for companies to use resources more efficiently, or to switch to more sustainable alternatives, as externalities become increasingly internalized.

Strengthening Stakeholder Relations and Keeping the Pace with Policy Developments

The SDGs reflect stakeholder expectations as well as future policy direction at the international, national and regional levels. Companies that align their priorities with the SDGs can strengthen engagement of customers, employees and other stakeholders, and those that don't will be exposed to growing legal and reputational risks.

Stabilizing Societies and Markets

Business cannot succeed in societies that fail. Investing in the achievement of the SDGs supports pillars of business success, including the existence of rules-based markets, transparent financial systems, and non-corrupt and well-governed institutions.

Using a Common Language and Shared Purpose

The SDGs define a common framework of action and language that will help companies communicate more consistently and effectively with stakeholders about their impact and performance. The goals will help bring together synergistic partners to address the world's most urgent societal challenges.

Examples of Companies and Business Engaging with Urban SDGs

Daewoo E&C is a company that practices sustainable management in Korea. Daewoo E&C which is aiming for the 11th goal of the SDGs "Make cities and human settlements inclusive, safe, resilient and sustainable", is making the following efforts. First, Daewoo E&C is actively promoting the expansion of the new energy project.

As a part of this project, in May of 2017, Daewoo E&C acquired a business license of Jeju solar energy generation, which is one of the business to replace the energy system in Jeju Island with the new renewable energy. Also through the development of 'Green Premium' technology, which is an eco-friendly and energy saving residential product, the company is planning to realize the concept of solving the energy used in an apartment called 'Zero Energy House' by 2023.In addition, in order to cope with environmental problems related to construction waste, Daewoo E&C is making efforts to reduce the environmental impact of construction materials by minimizing the use of cement with high emissions of carbon dioxide and developing eco-friendly concrete and cement materials.

Seoul Metropolitan City: 9 Key Areas of Citizen Needs

Discomfort due to illegal parking — 9.6
Lack of parkingspace within residential areas — 13
Public transportation congestion during rush hours — 16

Juvenile crime — 7.7
CCTV — 7.7
Natural disasters such as sink holes — 8.8
Vulnerable areas for security — 10.5

Food waste — 9.4
Illegal garbage dumping — 14.9
Atmospheric environments such as yellow dust and micro dust — 17.7

Vulnerable to tourism programs — 8.2
Safety management of cultural heritages — 8.4
Lack of tourism information — 8.4
Elimination of 'rip-off' payments for foreign tourists — 12.2

Inspection and expansion of child care facility services — 8.5
Inspection and disclosure of medical services — 9.6
Medical/welfare services for the vulnerable class — 11.7

Expansion of online education for everyone — 8.2
Expansion of Internet education for reducing private education expenses — 9.5
Enhance personality education for youths — 15.6

Enhance sex crime prevention education — 8.1
Expansion of flexible working system for working parents — 9.4
Support for childbirth to solve low fertility rate — 13.8

Support youth/elderly for working opportunities — 9.9
Activation of new job creation businesses — 11.7
Stabilization of prices in Seoul — 12.5

Expansion of public wifi — 6.9
Simplification of filing and processing of complaints — 11
Eradication of corruption of public officials — 16.2

2 Traffic
3rd: Dongdaemun-gu/Male/65y+/jobless
2nd: Geumcheon-gu/Male/65y+/Wholesale and retail
1st: Gwanak-gu/Female/20s/Student
Keywords: Bus/Info/Service

1 Safety
3rd: Dongdaemun-gu/Male/40s/Others
3rd: Geumcheon-gu/Female/65y+/Public worker
2nd: Seongbuk-gu/Female/30s/House wife
1st: Eunpyeong-gu/Male/65y+/Jobless
Keywords: Safety/Service/CCTV

Environment
3rd: Yangcheon-gu/Female/65y+/Public worker
2nd: Jung-gu/Male/65y+/Jobless
1st: Eunpyeong-gu/Female/30s/Professional
Keywords: Garbage/Pollution/Environment

Culture/Tourism
3rd: Seongbuk-gu/Male/65y+/Public worker
2nd: Jongro-gu/Female/65y+/Jobless
2nd: Geumcheon-gu/Male/65y+/Production worker
1st: Dongdaemun-gu/Male/30s/Public worker
Keywords: Info/App/Program/Service

3 Welfare
3rd: Guro-gu/Female/30s/Public worker
2nd: Gangbuk-gu/Female/65y+/Jobless
1st: Jung-gu/Male/65y+/Production worker
Keywords: Elderly/Vulnerable class/Expansion

Education
3rd: Gwanak-gu/Male/50-64y/Production worker
2nd: Dobong-gu/Female/30s/House wife
1st: Geumcheon-gu/Female/40s/Others
Keywords: IT/Expansion/Free education

Women/Family
3rd: Nowon-gu/Female/30s/Production worker
2nd: Jung-gu/Male/30s/Public worker
1st: Gangbuk-gu/Male/65 y +/Wholesale and retail
Keywords: Homecoming/Eradication/Psychology(counsel)/Safe

City Economy
3rd: Dongdaemun-gu/Female/65y +/Production worker
2nd: Dongdaemun-gu/Male/50-64 y/Service
1st: Dobong-gu/Female/30s/Others
Keywords: Job(employment)/Info/Start-up

Administration
3rd: Gangbuk-gu/Female/20s/Student
2nd: Jung-gu/Female/65 y +/Production worker
1st: Seongdong-gu/Male/30s/Others
Keywords: Transparent gov't/Wifi/Improvements of complaints

Citypreneurs Start-up Development Program for 30 Selected Teams |

| Summary of the Program

The Citypreneurs Startup Development Program was written and executed by Young Sustainable Impact, a Norwegian NGO specializing in incubation startups for UN SDGs.

The program spanned 8 sessions in 4 weeks. In four of the sessions, a facilitator met with the team to go through a pre-determined curriculum composed of UN SDGs and business education and synthesis. After each session, the teams were asked to write a reflection self-report and submit a presentation assignment. In the other four sessions, the teams presented these assignments to a designated mentor, acquiring feedback and gaining further insight in the market.

Week 1	Week 2	Week 3	Week 4
Problem identification for Seoul	Problem expansion & analysis with UN SDGs	Business implementation and business strategy	Investment strategy and final presentation preparation

Featured Speaker & Investors & Mentors |

| Featured Speaker

Penny Low
Founder, Singapore Innovation Park

· Youngest elected female Member of Parliament in Singapore
· Appointed by chairman and founder of WEF to social entrepreneurship
· Founder/Global Social Innovators Forum
· Founder/Social Enterprise Association
· Founding member of New Asian Leaders
· Member of WEF's The Forum of Young Leaders

| Investors & Mentors

Sangyeob Han
CEO, sopoong

· Former Founder/Wisdome
· Former Lift Conference
· Former Sales Staff/Daewoo International Corporation
· Former Founder/Nexters

[Investor & Mentor]

Chullyoung Lee
President, ARK Impact Asset Management

· Former Planning Manager/Sambo Securities
· Former Co-president/Bausch&Lomb Korea
· Former Adjunct Professor/Ewha Women's Univ.
· Former Visiting Professor/Sookmyung Women's Univ.
· MBA, Columbia University

[Investor & Mentor]

Murat Aktihanoglu
CEO & Managing Partner, ERA

· Managing Director at ERA, Software Engineer, Author
· Former Founder/technology startups, Centrl

[Investor & Mentor]

Haakon Brunell
CEO and Managing Partner, Katapult Accelerator

· Former Founder/Castle Interactive AS
· Former Associate Partner/McKinsey&Company
· University of Melbourne

[Investor & Mentor]

Hyunmyung Do
CEO, IMPACT SQUARE

· CEO, IMPACT SQUARE
· Expert in Social Enterprise, NGO, CSV, Social Impact, Cause Marketing

[Investor & Mentor]

Jaewon Chun
CEO, XNTree

· General Partner & CEO XNTree Ltd.
· Former Senior Advisor/Seoul Metropolitan Government
· Former Executive Director/Korea-Israel Chamber of Commerce (KICC)
· Former Partner/APEX Investment&Company

[Investor & Mentor]

Duckjun Lee
CEO, D3 Jubilee

· Former CFO/Gmarket ((Present) Ebay M&A)
· Former Worked in Investment Bank sector of Schroder, Citi Group and Credit Suisse
· Former Angel Investor in S.Korea and San Francisco, and started Impact Investment since 2010
· M.S. Accounting and Finance, London School of Economics (LSE)
· B.A in Business Administration, Seoul National Univ.

[Investor]

Jungtae Kim
CEO and President, MYSC

· Executive Director/ Social Enterprise Network, Co.
· Global Adviser/ UNDP Corporate Sector Partnership
· Former Special Vice-president/ Korea Venture Business Association
· Former Korean Ambassador/ League of Intrapreneur
· Former Development Fellow/ Asia Foundation
· Former Social Innovation Fellow/ Dell
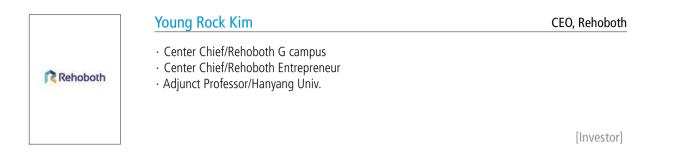
[Investor & Mentor]

Pham Quoc Dat
CEO, Hatch!

· Director/ABLINK Communications.
· Former Marketing Executive/Landor Associates
· Former Jnr Consultant/Abt Associate
· B.A. in Business English, Foreign Trade University of Hanoi

[Investor & Mentor]

Young Rock Kim — CEO, Rehoboth

· Center Chief/Rehoboth G campus
· Center Chief/Rehoboth Entrepreneur
· Adjunct Professor/Hanyang Univ.

[Investor]

Jongjun Won — CEO, Lime Asset Management

· Former Stock Management Division/Brain Asset Management
· Former Stock Management Division/Truston Asset Management
· B.A. in Business Administration and Economics, Yonsei Univ.

[Investor]

Chang-gyu Lim — Executive Director, ARK Impact Asset Management

· Executive Director/ARK
· Former Domestic Economy Division/Samsung Economic Research Institute
· Former Manager of Global Operation/Samsung Asset Management
· Former Executive Director/Social Investment Foundation

[Mentor]

Jessie Mooberry — Entrepreneur in Residence, Stanford University Research Lab

· Stanford University Peace Innovation Lab, Mooberry Consulting, People's Light
· Former Uplift Aeronautics, PPG Industries, IBM
· London School of Economics and Political Science

[Mentor]

Mikyung Lee — Managing director, Rehoboth

· Center Chief/Rehoboth G campus
· Center Chief/Rehoboth Entrepreneur
· Professor/Hanyang University
· Former Chief Consultant/T&B Management Research Institution, Ltd.
· Former CEO/T&B, Inc.

[Mentor]

Rob Fajardo — Founder, CEO, Leave Normal Behind

· Founder/LNB, Investor/Viral Marketing Partner
· Former Head of USA Brand Acquisition and Influencer Management/Role-Model Agency
· Advisor/Founders
· Former President/Sofro.LLC
· Former Client Acquisition/The BLU Market
· Former Director/RGG

[Mentor]

Seok-ki Kim   Director, BIGBANG ANGELS

· Professor/Dongyang Univ.
· Partner/BIGBANG ANGELS
· Former CEO&Founder/Mophon Wearables
· Former Executive Director/ROA Consulting
· Former New Device Business Executive/Korea Joongang Daily and Daum
· Former Researcher/Samsung Electronics Co., Ltd.

[Mentor]

Hyejin Park   Business Director, Vingle

· Former Director of Marketing and Business Development/Anyractive
· Former Director of Sales and Marketing/IUM SOCIUS

[Mentor]

Faith Tanui   Founder/Executive Director, PendoAfrica

· Former Technical Support Specialist/Remco Software, Inc.

[Mentor]

Arif Shafique   Business Developer, Microsoft

· Blockchain evangelist and public speaker
· Former Technical Evangelist & Solution Sales Professional/Microsoft
· Former Consultant/Shield Computing
· Former Product Development Director/Visma

[Mentor]

Yeji Lee   Senior Consultant, MYSC

· Former Employee, Partner/ ZPan-Impact Korea
· B.A Business Administration and Chinese, Sungkyunkwan University

[Mentor]

Arnoldo Muller-Molina   CEO, SimMachines

· Founder.CTO.Data Scientist/simMachines
· Former Global Solutions Program Participant (GSP17)
· Former Computational Biology Postdoctoral Research Fellow/Max Planck Institute
  for Molecular Biomedicine
· Former Software Engineer/Intel

[Mentor]

Andrew Schneck · Co-Founder, Cleanse Clinic

· Co-Founder/Cleanse Clinic

[Mentor]

Minsu Kim · Director, and Co-Founder, Impact Square

· Director and Co-Founder/Impact Square

[Mentor]

Jinsol Hwang · Founder & CEO, The Bridge International

· Former Senior Consultant/CSR Group, ECO Frontier
· Former Worked at UN Global Compact and UN Development Programme
· M.A. in Environmental and Energy Policy, University of Texas Austin
· B.A in International Regional Studies/B.A. in Economics, Handong Global University

[Mentor]

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	Yonsei University	Atommerce	Yonsei University
	Younghyeon Kwon	Hye Young Kim	Sunyoung Jung
	Hankuk University of Foreign Studies	Korea University	
	Sojeong Kim	Soyoun Park	Yoonie Choi
	Kyung Hee University	Aarhus University	UNICEF
	Yureeah Kim	Ragyeong Yoon	Chan Choi
	Architecture Work Office	Korea University	Sungkyunkwan University
	Inyoung Kim	Seonga Yoon	Da Hyun Huh
	Yonsei University	Ewha Womans University	WFUNA

| **Administrative Assistant** | Mina Han |
| | Hanyang University |

SDGs Urban Impact Summary
: Education Tech

Jalnoneun

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Company Introduction

We are Jalnoneun Company. We make Korea play, and play well. We want to protect children's right to play. Three co-founders and three full-time employees are currently working together. We share our mission with 1,600 college students who come to play with children in the neighborhood. These college students also think about what good play is, and what 'really' playing is with JALNONEUN.

Relevant UN SDGs

main   sub

Relevant UN SDGs Indicators
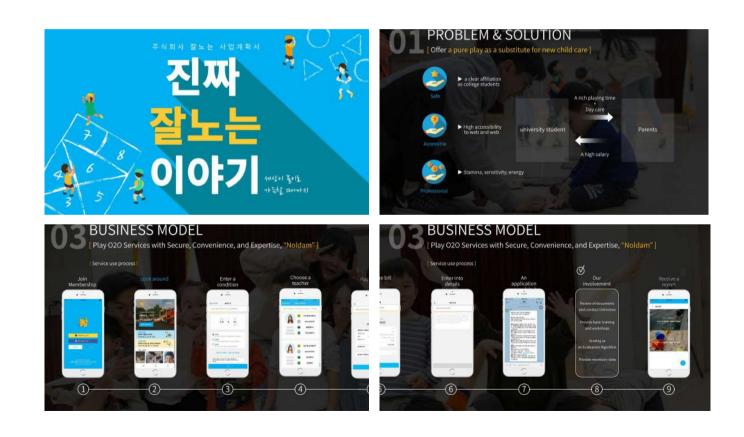
· **3.4.2** : Suicide mortality rate
· **4.2.1** : Proportion of children under 5 years of age who are developmentally on track in health, learning and psychosocial well-being, by sex
· **8.3.1** : Proportion of informal employment in non-agriculture employment, by sex
· **8.6.1** : Proportion of youth (aged 15–24 years) not in education, employment or training

Relevant Seoul SDGs

3	Economy
3.2	Quality Job creation
3.2.2	Youth Employment Rate

Urban Issue Addressed

Youth Mental Health

Youth Unemployment

Impact Investment Theme

Mental Health

Developed World Jobs

Description of core product

JALNONEUN CO., LTD. aims to give children time to enjoy "real" play in a safe environment. Parents can simply request for a play by setting the desired time, place and location on the mobile application. Then, a trained and certified college student play instructor will be invited to spend fun time with the child. We are constantly searching for essential elements of plays, and strive to fully apply the findings to the play-sitter service. Through our service, children will have plenty of time to 'really' play.

CanopyLAB

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Tue Robi Jensen
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Sahra-Josephine Hjorth
Co-founder and CEO / sahra@canopylab.com
Christian Skræm Juul Jensen
Co-founder and CTO / Christian@canopylab.com

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Website   www.canopylab.com

Company Introduction

CanopyLAB is the world's first smart eLearning platform and software that based on advanced algorithms, gamification, and soon AI, enables completely personal and adaptive learning experiences online.On our learning platform, learners can interact with each other and the curriculums in a number of different ways, enabling them to create the kind of learning that suits them. At the same time, we offer exciting courses by NGOs and institutions, allowing learners to learn and be inspired from practitioners and experts within their field, while empowering them to go out and make a difference.

Relevant UN SDGs

main   sub

Relevant UN SDGs Indicators

· **4.3.1** : Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex
· **4.4.1** : Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill

Relevant Seoul SDGs

2	Society&Culture
2.3	Education
2.3.1	Participation Rate in Lifelong Learning

Urban Issue Addressed

Social Polarization

Impact Investment Theme

Access to Education

Developed World Jobs

Equality

Description of core product

CanopyLAB has developed an interactive and innovative eLearning platform and software. Through adaptive and personalized learning experiences, we place people at the center of their own learning and career.

Courses for students: On our open learning platform, The LAB, students can take high-quality online courses within humanities and social sciences, offered by leading NGOs, and private institutions.
Corporate learning: Our corporate learning software allows your employees to easily map their current skills and competencies and understand how they can develop.

among among

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Developer / jaey@amongstudy.com

Tel　　070-8152-3848
Website　https://www.facebook.com/amongstudy/

Company Introduction

SoKIN, Co., Ltd. Mission: Help students to take care of their own education by themselves

Relevant UN SDGs
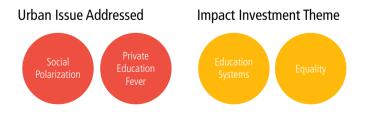
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Relevant UN SDGs Indicators

· **4.1.1** : Proportion of children and young people (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in(i) reading and (ii) mathematics, by sex

· **4.3.1** : Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex

· **4.6.1** : Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex

Relevant Seoul SDGs

2	Society&Culture
2.2	Social polarization
2.2.1	Adequate income assurance rate

Urban Issue Addressed

Social Polarization　　Private Education Fever

Impact Investment Theme

Education Systems　　Equality

Description of core product

Passed on tutoring service 'among'
· Free tutoring service for those who do not have the immediate financial support

· After being admitted to the university, they will pay back the service in two ways.
　1) Provide the same amount of free tutoring hours they got (when they were high school students) to high school students
　2) Pay back money. (The cost will be appropriated half price of the market price)

Curate Social Lab

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CEO **/** curatesl@naver.com
Alex Kim
CTO **/** taliaent87@naver.com
Lucas Seo
CMO / lucas.ws.seo@gmail.com

| **Tel** | +82-10-3625-5497 |
| **Website** | cafe.naver.com/curatesl |

Company Introduction
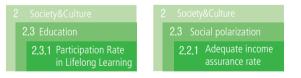
Curate Social Lab's goal is to provide the best education for all. Our team has been preparing for two years to launch our first business model, Tadpole studio – an e-learning platform. We are still an early-stage startup and have not yet officially started our business, but we have only few steps left to start and operate our business.

Relevant UN SDGs
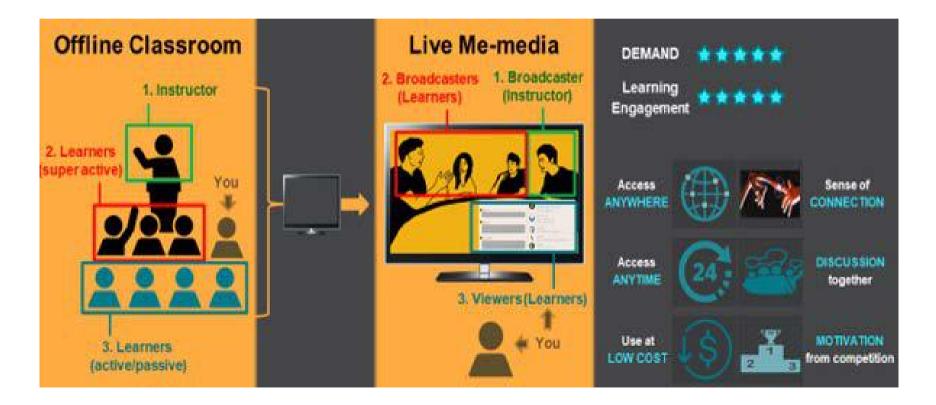
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Relevant UN SDGs Indicators

· **4.3.1** : Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex

· **4.4.1** : Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill

· **8.5.2** : Unemployment rate, by sex, age and persons with disabilities

Relevant Seoul SDGs

2	Society&Culture
2.3	Education
2.3.1	Participation Rate in Lifelong Learning

2	Society&Culture
2.3	Social polarization
2.2.1	Adequate income assurance rate

Urban Issue Addressed

Social Polarization   Unemployment

Impact Investment Theme

Access to Education   Developed World Jobs   Equality

Description of core product

Instead of a random instructor talking alone in a screen, we put a whole class in our videos via live me-media (live broadcasting where viewers interact with broadcasters through chatting) and make more fun and effective e-learning videos. We help learners keep motivated, acquire vocational skills they need, and learn various academic subjects and languages they want.

BTCA

Eunjin Jang
Teamleader / jej.btca@gmail.com
Sunbin Lim
Hardware Developer / lsb.btca@gmail.com
Jenny Byun
Designer / bje.btca@gmail.com

| **Tel**   010.9384.3313

Company Introduction

Our team name is 빛찾 bit.chat (English name is BTCA). It means 'discover the light' in Korean. We are developing a smart device for braille education. The name is Dot!kipedia. We think learning braille is kind of discovering light to the blinds because light is a main element of sight. About 90% of the blind cannot read the text (braille) in the world. We hope more and more blinds can read braille and get more information which is considered as being taken for granted to non-blind. We are sure our device opens them to a wider world.

Relevant UN SDGs

main   sub

Relevant UN SDGs Indicators

· **4.5.1** : Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated

· **4.a.1** : Proportion of schools with access to (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; and (g) basic hand washing facilities(as per the WASH indicator definitions)

Relevant Seoul SDGs

2   Society&Culture
2.2   Social polarization
2.2.1   Adequate income assurance rate

Urban Issue Addressed

Socioeconomic Exclusion of Disabled Persons

Impact Investment Theme

Access to Education

Equality

Description of core product

Dot!kipedia is a smart device the blind learn Braille easier. The device can communicate with smartphone and has Braille-shape input switches and output display. In sync with one's smart phone, the device allows not only braille education through writing, but also provides vocal feedback and produces physical copies to promote faster learning and rate of retention.

다시ON스쿨
Dashee ON School

Dashee ON School

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Suji Lee
Chief Quality Officer / Suji300520@gmail.com
EunChong Lee
Chief Content Officer / grace_on@naver.com

Tel　　010.9358.4429
Website　Fb.me/Dashee.ON.School

Company Introduction

[Dashee ON School] is a social venture startup providing the personality reinforcing education. [Dashee ON School] provides schools and students the needed education with the VR-using remote cooperative learning. The name of [Dashee ON School] derives from 'come again' (provide the cooperative education for education-ally alienated class to make them come back to school), 'restart' (newly provide teenagers with more effective education as the new education to which the gamification is applied), and 'reboot' (use the technology(VR) for the more vivid education).

Relevant UN SDGs

main　　　　　　　　　　sub

Relevant UN SDGs Indicators

· **4.1.1** : Proportion of children and young people (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex

· **4.3.1** : Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex

· **4.6.1** : Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex

· **8.6.1** : Proportion of youth (aged 15-24 years) not in education, employment or training

Relevant Seoul SDGs

2	Society&Culture
2.2	Social polarization
2.2.1	Adequate income assurance rate

Urban Issue Addressed

School Dropout Rates

Bullying

Impact Investment Theme

Access to Education ficiency

Education Systems
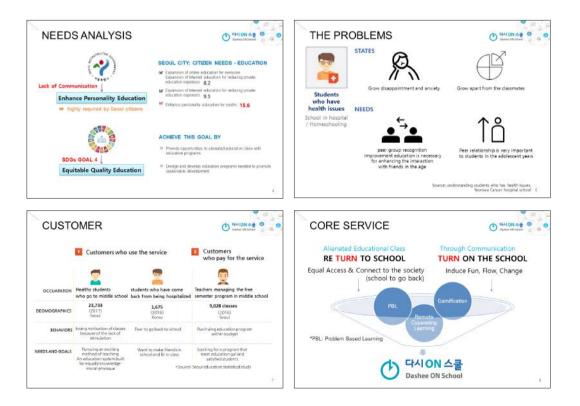
Description of core product

[Dashee ON School] provides the "VR-using remote cooperative learning" to solve the mission above. Existing students learn in the filming site installed at school and students from the educationally alienated class participate in learning by using the VR device. 5 men organize one team in a ratio of 4:1 each to conduct learning.
This cooperative learning is carried out in the PBL form of solving the given problems. Students can cultivate the necessary capability for the personality education such as the communication skill, sympathy ability, and problem solving ability through the remote cooperative learning of [Dashee ON School], and achieve the education goal according with the theme of the pertinent education program.

DOBRAIN

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Byungjae Kim
Marketer / Kbjay21@gmail.com
Wooseong Lee
Developer / Wlrua2@naver.com
Woojong Gill
Designer / Rlfdnwhd@naver.com
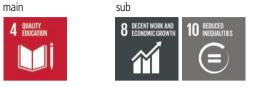
Tel   010-5062-8757
Website   App download link :https://goo.gl/B8S4fc
              Search "dobrain" or "두브레인" on app store & play
              store.

Company Introduction

Dobrain consists of Cognitive Education Research Center researching child cognitive development, a highly creative and inspired Story writers and designers, and developers who always look for ways to help children enjoy our contents easily. Our teams make it possible for any child anywhere to use commonly expensive cognitive development programs.

Relevant UN SDGs

main   sub

4 QUALITY EDUCATION

8 DECENT WORK AND ECONOMIC GROWTH

10 REDUCED INEQUALITIES

Relevant UN SDGs Indicators

· 4.2.1 : Proportion of children under 5 years of age who are developmentally on track in health, learning and psychosocial well-being, by sex

· 4.6.1 : Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex

· 8.6.1 : Proportion of youth (aged 15–24 years) not in education, employment or training

·10.2.1 : Proportion of people living below 50 per cent of median income, by sex, age and persons with disabilities

Relevant Seoul SDGs

2	Society&Culture	
2.3	Education	
	2.3.1	Adequate income assurance rate

Urban Issue Addressed

Cognitive Impairment

Social inequality

Impact Investment Theme

Access to Education ficiency

Upskilling

Equality

1 Out of 4 underprivileged children are cognitively underdeveloped

90% Of children have no access to cognitive therapy

Only 1% Of children receive consistent cognitive therapy

Dobrain

Why not?
Cognitive therapy that is available anywhere anytime, fun, and low cost.
anywhere   fun   low cost

Why?
Existing Cognitive therapy programs are too expensive, inaccesible, and boring
expensive   inaccesible   boring

SDGs Urban Impact Summary
: Transportation & Environment

basearth

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Company Introduction

basearth is a biomaterial and technology based social venture promoting safe-to-breathe environment. With expertise in bio and chemical materials, we research and develop new materials to solve the single largest environmental health hazard on earth- air pollution driven by Particulate Matter (PM) and VOCs. We are passionate about creative materials and technology that generate revenue while saving lives from the risk of deaths and illness by air pollution.
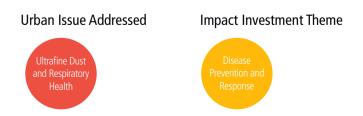
Relevant UN SDGs
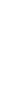
main

3 GOOD HEALTH AND WELL-BEING

sub

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

11 SUSTAINABLE CITIES AND COMMUNITIES

Relevant UN SDGs Indicators

· 3.4.1 : Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease

· 3.9.1 : Mortality rate attributed to household and ambient air pollution

Relevant Seoul SDGs

2	Society&Culture
2.8	Health
2.8.1	Healthy life expectancy

Urban Issue Addressed

Ultrafine Dust and Respiratory Health

Impact Investment Theme

Disease Prevention and Response

Description of core product

Filter Spray Product to provide safe-to-breathe air in and outdoors. Our world uniqueness Air Pollution Free Technology is to control the + and - charged areas of Apatite, a mineral of human bones, and optimize it to capture PMs and VOCs. Rooted from this technology, we have 2 products for better air indoors and outdoors- 'Filter Spray' for air filters (customer & industrial use) and 'Bad Air Powder' for building materials.

Flint Lab Inc.

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Company Introduction

Flint Technology changes the paradigm of the energy. We offer a new bio-energy technology to solve climate change problems and energy issues. Our technology is available regardless of regions and economic condition. It's sustainable, environment-friendly and also compatible with all the industries. Based on this, our business not only prevents global warming but also resolves energy poverty. Clean combustion technology with using bio fuel and producing less carbon emission. This is what we've come up with.

Relevant UN SDGs

main

12 RESPONSIBLE CONSUMPTION AND PRODUCTION
7 AFFORDABLE CLEAN ENERGY

sub

3 GOOD HEALTH AND WELL-BEING
13 CLIMATE ACTION

Relevant UN SDGs Indicators

· 3.9.1 : Mortality rate attributed to household and ambient air pollution
· 7.1.2 : Proportion of population with primary reliance on clean fuels and technology
· 7.2.1 : Renewable energy share in the total final energy consumption
·12.2.1 : Material footprint, material footprint per capita, and material footprint per GDP
·12.5.1 : National recycling rate, tons of material recycled

Relevant Seoul SDGs

1	Environment
1.3	Waste
1.3.1	Municipal Waste Recycling Rate

Urban Issue Addressed

Waste Management and Recycling · Fossil Fuel Dependence

Impact Investment Theme

Transition from Fossil to Clean Energy · Circular Economy · Environmental Health

Description of core product

CLEAN COOKSTOVE & CLEAN HEATER: Flint Cookstove was invented to reduce increased energy cost and the indoor air pollution in developing countries. Instead of purchasing expensive fossil fuel or lumbering trees, our stove is suitable for easy and safe household cooking by burning waste cooking oil or plant oil. Moreover, it's accident-free. With the same combustion technology, clean heater which is mainly targeted for Chinese market is also being produced in our lab.

Catalonix Inc.

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Company Introduction

Catalonix has successfully settled in both Gangwondo, Korea and central Bangkok, Thailand, since its foundation 9 months ago. The company is focusing on IT/IoT devices dealing with environmental big data and urban pollution. Catalonix is now moving into unexplored field for meteorologists and environment experts such as data for smart city, smart factory and smart farm. According to the official specifications, Catalonix's upcoming drone platform will be the world first one to sport a series of sensors to observe urban city environments with short-term prediction of the advective-diffusive transport of pollutants and particulate matters.

Relevant UN SDGs

main   sub
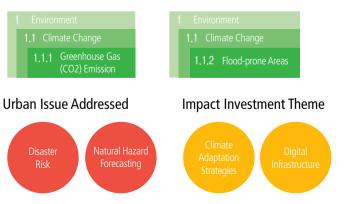
Relevant UN SDGs Indicators
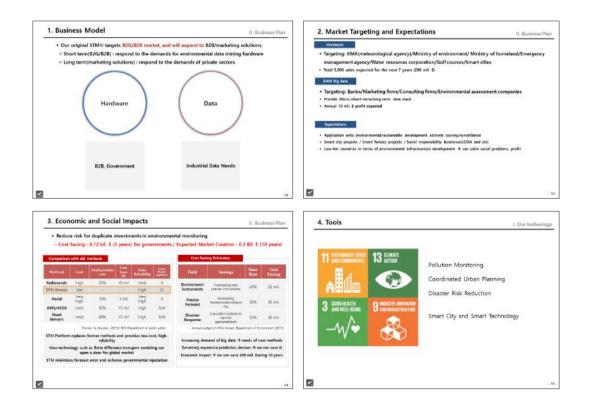
· **3.d.1** : International Health Regulations (IHR) capacity and health emergency preparedness

· **9.5.1** : Research and development expenditure as a proportion of GDP

· **11.5.2** : Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population

· **11.5.2** : Direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters

· **13.2.1** : Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts

Relevant Seoul SDGs

1	Environment
1.1	Climate Change
	1.1.1 Greenhouse Gas (CO2) Emission

1	Environment
1.1	Climate Change
	1.1.2 Flood-prone Areas

Urban Issue Addressed

Disaster Risk

Natural Hazard Forecasting

Impact Investment Theme

Climate Adaptation Strategies

Digital Infrastructure

Description of core product

Catalonix, recently showed off its new UAV platform that is an urban weather observation and surveillance system aimed at Scientific and environmental UAV observation purposes across the world. The UAV is about the same size of typical aerial photography drones (up to 1200 class) but way more powerful to deliver precise surface images and weather observation data, including basic matters, pollutant concentration and barometric pressure. Thanks to the integrated sensor system attached on the system, observation data can be directly used to make inputs of short-term numerical weather and climate modeling system, which the company is also building.

Limsangwoo.com

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Company Introduction

We pursue continuous attention and extensive research for our urban and dry Environment. Through this, we suggest an integrated alternative through a step-by-step process. Through the micro environment connected to the exterior environment of urban and natural environment, dry environment of buildings, detailed facility, It is not simply technical act to build a building. It is a design group as a cultural production center making stories through contents of planning, process, and results.

Relevant UN SDGs

main   sub

Relevant UN SDGs Indicators

· **3.4.1**   : Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease
· **3.9.1**   : Mortality rate attributed to household and ambient air pollution
· **11.6.2** : Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)

Relevant Seoul SDGs

1	Environment
1.5	Air quality
1.5.1	Ultrafine dust concentration

Urban Issue Addressed

Ultrafine Dust

Respiratory Health

Impact Investment Theme

Disease Prevention and Response

Green Building
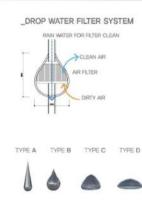
Description of core product

In Korea, There is serious air pollution, it is caused by fine dust. It started from 2007, and now. So we concentrate in the city sequence. It is about public facilities and daily life. First we design a unique place. As we know, after rain, the air is clean. Therefore, we equip place with water sprinklers. It will come in 4 types and through by the roof, it will also clean the filter. It becomes an effective solution for air pollution in urban space.

S-Green

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Company Introduction

S-Green is a global green startup founded in 2017 which is based in Seoul, South Korea. It is aimed to answer Seoul City and ultimately the world's urban problems and environmental issues. It is a problem-based business model intended to promote greener lifestyles and integrate environmentally-friendly habits into various human life aspects including transportation and daily consumption. S-Green focuses to bring collaborative solution into the worlds' complex transportation and environmental issues with UN SDG goals to achieve sustainability, prosperity, and well-being of each citizen.

Relevant UN SDGs

main　　　　　　　　　sub

3 GOOD HEALTH AND WELL-BEING

11 SUSTAINABLE CITIES AND COMMUNITIES

13 CLIMATE ACTION

Relevant UN SDGs Indicators

· **3.4.1** : Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease

· **11.2.1**: Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities

Relevant Seoul SDGs

1 Environment
1.7　Green Transportation
1.7.1　Rate of Green Transportation Use

2 Society&Culture
2.8　Health
2.8.1　Heathy Life Expectancy

Urban Issue Addressed

Traffic Congestion

Lack of Exercise

Impact Investment Theme

Fitness and Wellbeing

Smart Cities and Mobility

Environmental Health

Description of core product

S-Green is an eco-friendly mobile reward application. The app is gamified with "Green Leaves", allowing users to track sustainable habits and participate in weekly green missions for various benefits and rewards. Through S-Green's virtual community, users can monitor their green lifestyles and clearly track their progress alongside receiving new benefits as a form of motivation. Upon the launching of the application, we will introduce two features in the first phase including:

1. Green Ride: the feature to boost greener transportation habits in Seoul
2. Green Shop: the component to make consumers' shopping habits environmental friendly.

GreenBIM Engineering

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Company Introduction

GreenBIM Engineering is a start-up specialized in Building Energy Optimization, Green Building and environmental Certification of buildings. The company's goal is to make a positive environmental change to the society by providing services and products using our expertise and experience accumulated in the building & environmental industry.

The company has seen an exponential growth during the last 2 years with the award of 50+ projects in 10+ different countries. Our renowned clients include Nike, Converse, Deloitte Finance, Bureau Veritas and many others.
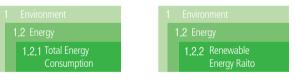
Relevant UN SDGs

main   sub

7 AFFORDABLE AND CLEAN ENERGY   3 GOOD HEALTH AND WELL-BEING   11 SUSTAINABLE CITIES AND COMMUNITIES   17 PARTNERSHIPS FOR THE GOALS

Relevant UN SDGs Indicators

· **3.4.1** : Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease
· **3.9.1** : Mortality rate attributed to household and ambient air pollution
· **7.2.1** : Renewable energy share in the total final energy consumption
· **7.3.1** : Energy intensity measured in terms of primary energy and GDP

Relevant Seoul SDGs

1 Environment
1.2 Energy
1.2.1 Total Energy Consumption

1 Environment
1.2 Energy
1.2.2 Renewable Energy Raito

Urban Issue Addressed

- Structural Carbon Emission
- Indoor Environment Quality

Impact Investment Theme

- Green Building
- Transition from Fossil to Clean Energy
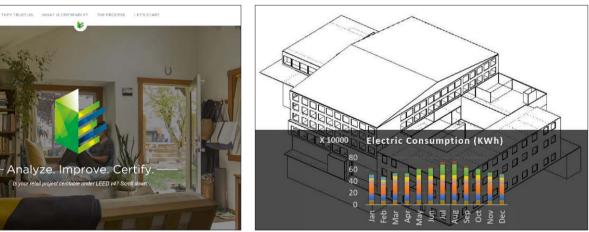
Description of core product

The services and platform are designed for engineering for architects, construction companies and corporations with construction projects. Projects type include retail, office buildings, factories, governmental buildings, universities and residential buildings. The technique used is called LEED, a high-level reference guide and certification system from the U.S. & Canada. The main goal of the services and platform is to reduce energy consumption and environmental impact of new construction and fit-out of buildings.

Je.vinci Inc.

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Company Introduction

Je.vinci, Inc. is a company that makes an auto-
motive and walking navigation system. We are
trying to gain a foothold in the U.S. Our start-up
is started from Penn State University in Pennsylva-
nia. Now, the head office is in Seoul, South Korea.

Relevant UN SDGs

main   sub

Relevant UN SDGs Indicators

· **9.4.1** : CO2 emission per unit of value added
· **11.2.1**: Proportion of population that has convenient access to
           public transport, by sex, age and persons with disabilities

Relevant Seoul SDGs

1	Environment
1.1	Climate Change
1.1.1	GHG(CO2) Emissions

1	Environment
1.7	Green Transportation
1.7.1	Rate of Green Transportation Use

Urban Issue Addressed

Quality of Urban Mobility

Impact Investment Theme

Technology and Technology Transfer

Smart Cities and Mobility

Greenhouse Gas Reduction

Description of core product

Our navigation system is so well advanced that on the traffic information can be used to adjust the route as the bypass
by total travel time. Mathematically, navigation is based on the shortest path problem, within graph theory, which
examines how to identify the path that best meets some criteria between two points in a large network. With different
algorithm about the bypass, our company strives to be distinguished among our competitors.

DaMoGO

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Company Introduction

DamoGO is a social enterprise focused on reducing food waste at the retail food industry level. Our team has extensive experience in the food industry and is dedicated to not only making a profit, but also minimizing food waste and greenhouse gases, and giving food stores an extra sales channel and exposure to more customers.

Relevant UN SDGs

main   sub

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

2 ZERO HUNGER

13 CLIMATE ACTION

Relevant UN SDGs Indicators

· **12.3.1** : Global food loss index
· **2.1.2** : Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)

Relevant Seoul SDGs

1	Environment
1.3	Waste
1.3.1	Municipal waste recycling rate

Urban Issue Addressed

Food Waste

Impact Investment Theme

Food Waste   Circular Economy   Resource Efficiency

Description of core product

DamoGO is a mobile application platform where users can purchase soon to expire foods at marts, grocery stores, convenience stores, supermarkets, etc., at a discount, right on our app. These are foods that are already being discounted in-store. Our app is location based and foods show up in real time. Stores have more sales and customers, customers save up to 80%, and there is less food waste going to landfills.

How it works — Food stores sell their about to expire foods at a discount

Log in to DamoGO → Find surplus food discounted 30-50% in nearby store → Pick up food same day within allotted time

EVERYONE WINS

Food stores & customers — Save Money
Food stores gain extra income — Make Money
Less waste & greenhouse gases — Environmentally Friendly

Why now?

1st to market in Korea

Koreans' increased awareness on social issues

Our value is correlated with Korean Culture - 홍밥, 맛집, 먹방

Single Person Households
Youth Unemployment Rate (2015) 11.20%

15.50% (2000)   25.30% (2013)   33% (2033)

Market Size

51 Millions — Population of Korea
190,000 — Marts
30,000 — Convenience stores

Light Econergy

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Company Introduction

Light Econergy had been established on July 2015 and had a mission to light the world and light the people with sustainable and eco-friendly energies. We have developed a charcoal fuel manufacturing machine through government support and keep upgrading the machine.
Our product had awarded as one of Creative Eco-Designs 2017 by KEITI in this year. We had successfully finished Crowd Funding supported by Korea Electric Power Corporation on June 2017.
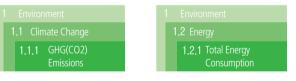
Relevant UN SDGs

main   sub
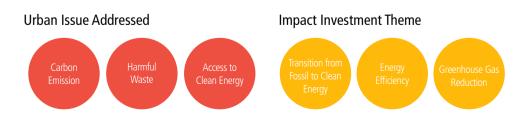
7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

13 CLIMATE ACTION

Relevant UN SDGs Indicators

· **7.1.2** : Proportion of population with primary reliance on clean fuels and technology
· **7.3.1** : Energy intensity measured in terms of primary energy and GDP
· **8.4.2** : Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP

Relevant Seoul SDGs

1 Environment
1.1 Climate Change
1.1.1   GHG(CO2) Emissions

1 Environment
1.2 Energy
1.2.1 Total Energy Consumption

Urban Issue Addressed

- Carbon Emission
- Harmful Waste
- Access to Clean Energy

Impact Investment Theme

- Transition from Fossil to Clean Energy
- Energy Efficiency
- Greenhouse Gas Reduction

Description of core product

Our charcoal briquettes will replace coal briquettes which generate lots of carbon dioxide in the atmosphere. The products will be made of charcoal using rice husk or coconut shell instead of coal from the underground. It is much lighter and easier to ignite compared to competitor's ones. Therefore, delivery cost can be saved and customer will not have to be standing outside for a long time to ignite them. It does not contain any heavy metals while coal briquette contains some such as Pb, Cd, As, and Hg, etc.

LIBERTY Co Ltd.

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Company Introduction

LIBERTY Co., Ltd. Is an energy specially company established in 2016.
Currently we are conducting collaborative testing with local governments and connecting national research technology & products acceleration.

## Relevant UN SDGs

main   sub

Relevant UN SDGs Indicators

· **7.1.2** : Proportion of population with primary reliance on clean fuels and technology
· **7.2.1** : Renewable energy share in the total final energy consumption

Relevant Seoul SDGs

1	Environment	
1.2	Energy	
	1.2.2	Ratio of Renewable Energy Use

Urban Issue Addressed

Carbon Emission

Nuclear power reliance

Impact Investment Theme

Transition from fossil to clean energy

Energy Efficiency

Description of core product

The LIBERTY-120 is changed from the traditional three blades of wind turbine to the jet engine like turbine blades structure in aircraft type working which is along the vertical axis. It can accommodate all wind from north, south, east and west while providing safety due to the absence of external exposure of blades.
It would resolve the chromic problems of wind turbines industry and this product is suitable model for urban wind power while elevating the design of the buildings. Also, it has 1.7times higher performance compared to other models in same diameter and it greatly competitive in price when it is mass production.

NEW RENEWABLE ENERGY
The new product wind turbine generator.
It has 4times higher performance compared to other models in same diameter, and it greatly competitive in price when it is mas production

ROKISA ROKISA

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Company Introduction

Development of Artificial Intelligence(AI) Consulting Platform Based on Big Data Analysis to Reduce Electric Charges

Relevant UN SDGs

main   sub

Relevant UN SDGs Indicators

· 7.3.1 : Energy intensity measured in terms of primary energy and GDP

Relevant Seoul SDGs

1	Environment
1.2	Energy
1.2.1	Total energy consumption

Urban Issue Addressed

Energy Inefficiency

Impact Investment Theme

Resource Efficiency

Energy Efficiency

Description of core product

Sevice

– *Electric energy cost reducing consulting*   – *Efficient electric energy using*

– *Sensible selection of electric charges system*

Before
(Electric energy cost rate)

Basic cost   Etc
Usage cost   VAT

10%
10%
30%
50%

ROKISA(Energy Platform)

Electric energy cost saving

Big data analysis

Peak load management

Artificial Intelligence(AI)

After
(Electric energy cost rate)

Basic cost   Etc
Usage cost   VAT

Saving

10%
10%
25%
30%
25%

Technology

Data crawling   Big-data acquisition Reprocessing technology   Analysis (Machine learning)   Storage of data   Web-service   Web-page

bynd **bynd**

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Company Introduction

Bynd is an efficient urban mobility solution that provides better commuting experience and transportation efficiency for people and corporations through carpooling. Our technology connects co-workers with similar routes, so they can share their rides, offering an extremely user friendly interface that allows on demand requests and identifies possible matches real-time. The idea is to improve people's quality of life by optimizing their daily commute, reducing transportation and parking costs while expanding their network within the company and reducing their carbon emissions.

Relevant UN SDGs

main   sub

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE   **11** SUSTAINABLE CITIES AND COMMUNITIES   **13** CLIMATE ACTION
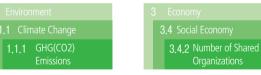
Relevant UN SDGs Indicators
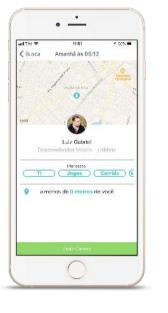
· **9.1.2** : Passenger and freight volumes, by mode of transport
· **11.2.1**: Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities

Relevant Seoul SDGs

1	Environment
1.1	Climate Change
1.1.1	GHG(CO2) Emissions

3	Economy
3.4	Social Economy
3.4.2	Number of Shared Organizations

Urban Issue Addressed

Traffic Congestion   Air Pollution

Impact Investment Theme

Smart Cities and Mobility   Energy Efficiency   Technology and Technology Transfer

Description of core product

Bynd reinvented carpooling by using technology to facilitate the connection between people and promote hassle-free sharing. The mobile app can calculate all possibilities on a route in a blink of an eye and also includes public transportation as a complementary option to reach the best commuting outcome. Bynd is focused on enterprises and other organizations, which brings safety to the carpooling network and unlocks the sharing potential by providing the necessary critical mass of users moving the same way every day.

we2lab

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Company Introduction

'we2lab' are researching artificial intelligence based shared services solutions. Through shared services, we want to make more people more economical and improve the environment.

Relevant UN SDGs

main   sub

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

11 SUSTAINABLE CITIES AND COMMUNITIES

13 CLIMATE ACTION

Relevant UN SDGs Indicators

· **9.4.1** : CO2 emission per unit of value added
· **11.2.1** : Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities

Relevant Seoul SDGs

1 Environment
1.1 Climate Change
1.1.1 GHG(CO2) Emissions

1 Environment
1.2 Energy
1.2.1 Total energy consumption

1 Environment
1.7 Green Transportation
1.7.1 Rate of Green Transportation Use

Urban Issue Addressed

Traffic Congestion

Air Pollution

Parking Issue

Impact Investment Theme

Fitness and Wellbeing

Greenhouse Gas Reduction

Smart Cities and Mobility

Description of core product

Artificial intelligence based electric bicycle sharing service is an economical and environmentally friendly solution. It can solve various urban problems - parking, traffic and air pollution. IoT sensors and artificial intelligence technologies prevent theft and improve profitability.

User Web and App Service

Electric Bike Moving Station System

Electric Bike Shared Solution

Electric Bike Management System

SDGs Urban Impact Summary
: Health

SheForHer

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            1972065216382703/?ref=bookmarks

Company Introduction

SheForHer is a social venture that aims to provide young Nepali girls access to safe and healthy sanitary pads through vending machines. The production of sanitary pads will create job opportunities for women trying to rebuild their households from the damages of earthquake and provide them a solid source of income.

Relevant UN SDGs

main   sub

6 CLEAN WATER AND SANITATION

3 GOOD HEALTH AND WELL-BEING

5 GENDER EQUALITY

8 DECENT WORK AND ECONOMIC GROWTH

Relevant UN SDGs Indicators

· 6.2.1 : Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water
· 8.5.2 : Unemployment rate, by sex, age and persons with disabilities

Relevant Seoul SDGs

2 Society&Culture	3 Economy
2.1 Gender Equality	3.4 Social Economy
2.1.1 Female Economic Activity Participation Rate	3.4.1 Number of social enterprises

Urban Issue Addressed

Feminine Hygiene Product Issues

Impact Investment Theme

Products and Services for Women

Maternal and Reproductive Health

Disease Prevention and Response

Developing World Jobs

Description of core product

Sanitary pads SheForHer produces will be free of any toxins by keeping the necessary chemicals to a minimum amount. They will also be produced with 100% organic cotton to secure safe and accountable usage for all women.

KEZ

한눈가전 블랙박스형 기통소프트 웨어러블

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Company Introduction

Black box-type children protection wearable device based on sensing.

Relevant UN SDGs

main   sub

11 SUSTAINABLE CITIES AND COMMUNITIES

3 GOOD HEALTH AND WELL-BEING

16 PEACE, JUSTICE AND STRON INSTITUTIONS

Relevant UN SDGs Indicators

· **3.2.1** : Under-5 mortality rate

· **11.7.2** : Proportion of persons victim of physical or sexual harassment, by sex, age, disability status and place of occurrence, in the previous 12 months

· **16.1.4** : Proportion of population that feel safe walking alone around the area they live

Relevant Seoul SDGs

2	Society&Culture
2.8	Health
2.8.1	Healthy life expectancy

Urban Issue Addressed

Children's Health Monitoring

Crime against Children

Impact Investment Theme

Fitness and Wellbeing

Description of core product

1. Automatic video capturing system using body data
   If the wearer's temperature, heartbeat, and stress index are reached above a certain level, surrounding environment will be automatically captured and sent to the cloud server, informing the wearer's guardians at the same time.

2. Automatic video transmission device with LTE module
   It is possible to send video with faster and more exactly by applying LTE module. It does not charge additional communication expense if sent by data sharing.

3. Safety management monitoring through personal blackbox wearable device (PC version)
   KEZ is manufacturing a blackbox type wearable device that protects social safety to weak people who are in dangerous situations by enabling to make calls or enable to freely deal with phone or machine.

ASKapp

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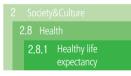**Website**   www.askapp.dk

Company Introduction

Founded in Jan 2016 in Copenhagen, Denmark, by two cousins Katja & Simon, ASK connects people to psychologists on a digital platform they can use as an outlet to distress and heal. ASKapp is currently competing in the finals in the largest HealthTech start-up competition in Denmark.

Relevant UN SDGs

main   sub

3 GOOD HEALTH AND WELL-BEING   8 DECENT WORK AND ECONOMIC GROWTH   16 PEACE, JUSTICE AND STRON INSTITUTIONS

Relevant UN SDGs Indicators

· **3.4.2** : Suicide mortality rate
· **3.5.1** : Coverage of treatment interventions (pharmacological, psychosocial and rehabilitation and aftercare services) for substance use disorders
· **8.2.1** : Annual growth rate of real GDP per employed person
· **16.1.3** : Proportion of population subjected to physical, psychological or sexual violence in the previous 12 months

Relevant Seoul SDGs

2	Society&Culture
2.8	Health
2.8.1	Healthy life expectancy

Urban Issue Addressed

Suicide Rate   Mental Health

Impact Investment Theme

Mental Health

Description of core product

ASKapp helps users connect to psychologists cheaper, faster and anonymously. The need for the app is scalable, e.g. In Korea due to a strong shame affiliated with psychologists deeper problems are concerned, whereas in Denmark it is marketed as everyday problems that we currently don't seek help for, as it is too expensive or time consuming.
ASKapp provides a test to help users categories their problems, and the option to chose preferences for a psychologist. Further we offer the opportunity to also talk to psychologist students and users-to-user for free.

AFTERAIN

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Company Introduction

All over the world, people who live in big cities have difficulty in breathing. According to OECD Research, among 38 countries of OECD members, the air quality of KOREA is ranked 38th. As time goes by, this problem would get worse and worse. WE MUST TAKE ACTIONS! We developed "AFTERAIN SYSTEM" which can directly reduce the fine dust & provide clean air in activity space of CITIZEN.

Relevant UN SDGs

main   sub

3 GOOD HEALTH AND WELL-BEING   **11 SUSTAINABLE CITIES AND COMMUNITIES**   **13 CLIMATE ACTION**

Relevant UN SDGs Indicators

· **3.4.1** : Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease
· **3.9.1** : Mortality rate attributed to household and ambient air pollution
· **11.6.2** : Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)

Relevant Seoul SDGs

1	Environment
1.5	Air quality
1.5.1	Ultrafine dust concentration

Urban Issue Addressed

(Ultrafine Dust) (Respiratory Health)

Impact Investment Theme

(Disease Prevetion and Response) (Fitness and Wellbeing) (Green Building)

Description of core product

We, AFTERAIN, use purification method from nature. "AFTERAIN CLEAN AIR LOOP SYSTEM" is air circulation system which provide clean air constantly in certain zone. You can breathe with CLEAN AIR in outdoor space, without mask, and this prevent indoor air pollution because it blocks the inflow of outside dust like clean room of semiconductor factory. This can be used in the entrance of building, sidewalk, playground, and square, and also applied in diverse spaces such as subway stations, bus stops, and smoking areas.

IntelFlows

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Company Introduction

IntelFlows is offering an air pollution monitoring system for (smart) cities.
Using the latest developments in sensing technologies and IoT, IntelFlows is creating a hyper-localized map of air pollution in cities, by installing its sensors on public transportation.
Combining this data with other data sources, IntelFlows is creating heat maps, reports and recommendations on how to tackle air pollution in urban settlements.
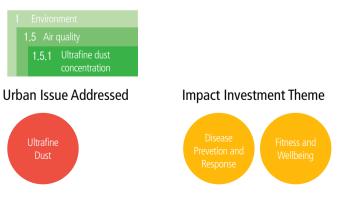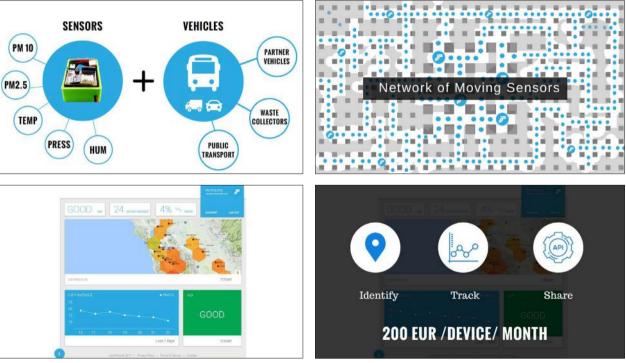
Relevant UN SDGs

main   sub
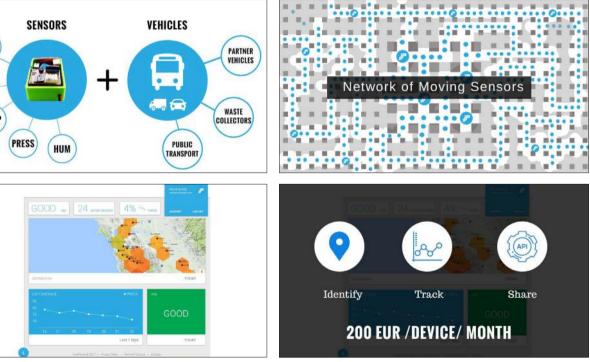

Relevant UN SDGs Indicators

· **3.4.1** : Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease

· **3.9.1** : Mortality rate attributed to household and ambient air pollution

· **3.d.1** : International Health Regulations (IHR) capacity and health emergency preparedness

· **13.2.1** : Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)

Relevant Seoul SDGs

1	Environment
1.5	Air quality
1.5.1	Ultrafine dust concentration

Urban Issue Addressed

Ultrafine Dust

Impact Investment Theme

Disease Prevetion and Response

Fitness and Wellbeing

Description of core product

IntelFlows offers an air pollution monitoring service to local municipalities to help them tackle pollution in the most efficient way. Our system is comprised of two parts:

1. Hardware
   The device is equipped with GPS, GSM and different sensors: temperature, pressure, humidity, PM 2.5 (Particle Matter), PM 10.

2. Platform
   The results (heat-maps, pollution levels, recommendations), are accessed by the municipalities on our platform. Moreover, the data can be distributed through our API.

WOORIKIDS

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Company Introduction

We are developing IOT-based hand sanitizer.

Relevant UN SDGs

main   sub

6 CLEAN WATER AND SANITATION

3 GOOD HEALTH AND WELL-BEING

Relevant UN SDGs Indicators

· **6.2.1** : Proportion of population using safely managed sanitation services,
              including a hand-washing facility with soap and water
· **3.2.1** : Under-5 mortality rate
· **3.d.1** : International Health Regulations (IHR) capacity and health emergency
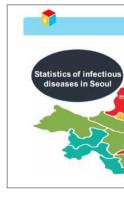   preparedness

Relevant Seoul SDGs

2	Society&Culture	
	2.8	Health
		2.8.1 Healthy life expectancy

Urban Issue Addressed

Sanitation and Health

Pandemic and Epidemic Diseases

Access to Clean Energy

Impact Investment Theme

Sanitation

Disease Prevention and Response

Fitness and Wellbeing

Description of core product

Increase in infectious diseases of children due to increased harmful environmental factors.
Hand washing is effective in preventing 70% of infectious diseases.
Interesting approach to hand washing education program and contents through play.
Development of smart hand disinfectant stamp that can collect information and has learning effect that children can do hand washing training by oneself.
Providing prevention guidance for infectious diseases of infants.

Market Analysis

Satisfaction of 2193 parents(consumer) who used the product: **95%**
Paid subscription willingness: **95%**

95%

Item Details

Linkage

Item Details

Statistics of infectious diseases in Seoul

National health alarm service

1. 96% removal of bacteria
2. Easily hand disinfection at anytime
3. Making bacterial characters that children can easily approach
4. Educational implication that bacteria disappear if they wash hands by using stamps

PathwaysAI

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Company Introduction

PathwaysAI is leveraging the latest developments in artificial intelligence, quality of life metrics, and mobile apps to allow users suffering from chronic diseases to take never-before-possible control of their lifestyle factors. We are proud to debut PathwaysAI, a mobile app designed to address the need of Parkinson's Patients at all stages of disease progression. PathwaysAI uses groundbreaking Artificial Intelligence technology to give unparalleled and individualized insight into an individualized quality of life factors.

Relevant UN SDGs

main

6 CLEAN WATER AND SANITATION

sub

10 REDUCED INEQUALITIES

Relevant UN SDGs Indicators

· **3.4.2** : Suicide mortality rate

· **3.8.1** : Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population)

Relevant Seoul SDGs

2	Society&Culture
2.8	Health
2.8.1	Healthy life expectancy

Urban Issue Addressed

Mental Health   Ageing

Impact Investment Theme

Mental Health   Ageing   Access to Healthcare

Description of core product

Our product, PathwaysAI allows Parkinson's patients to monitor their quality of life, monitor their medical adherence, find beneficial therapies, and work as a communication tool with their care team. PathwaysAI gives patients the right tools at the right times to slow the progression of their Parkinson's Disease and live their best lives. Most importantly, PathwaysAI gives Parkinson's patients control over their life back to them.

EIDWare

EIDWARE

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Company Introduction

Eidware has been developing 'warm technology' and universal design to assist those who are in need, rather than to provide comfort for able-bodied users. For example, Eidware was the first company in Korea to develop a voice recognition engine for disabled people, and the first company in the World to commercialize embedded voice recognition for the elderly. The latest from Eidware: "Soundmind" is the most comprehensive solution for MCI patients, to delay the onset of Alzheimer's disease.
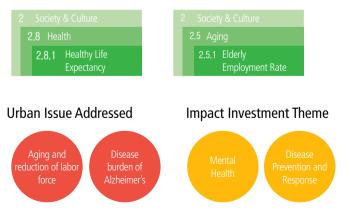
Relevant UN SDGs

main
6 CLEAN WATER AND SANITATION

sub
1 NO POVERTY
8 DECENT WORK AND ECONOMIC GROWTH

Relevant UN SDGs Indicators

· **1.3.1** : Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims and the poor and the vulnerable

· **3.4.2** : Suicide mortality rate

· **3.8.2** : Proportion of population with large household expenditures on health as a share of total household expenditure or income

· **8.5.2** : Unemployment rate, by sex, age and persons with disabilities

Relevant Seoul SDGs

2 Society & Culture
2.8 Health
2.8.1 Healthy Life Expectancy

2 Society & Culture
2.5 Aging
2.5.1 Elderly Employment Rate

Urban Issue Addressed

Aging and reduction of labor force

Disease burden of Alzheimer's

Impact Investment Theme

Mental Health

Disease Prevention and Response

Description of core product

'Soundmind' is an app-based cognitive solution for pre-dementia patients. Mild Cognitive Impairment (MCI) patients require personalized training contents for at-home brain training. Our proprietary voice recognition engine for seniors allows for easy communication with the A.I. Expert System, which guides users through the tailored regimen made up of more than 50 different cognitive tasks of varying difficulty levels, all based on the protocols set by the American Academy of Neurology.

soundmind
Digital Vaccine for Brain Anti-aging

ZIO MEDIC

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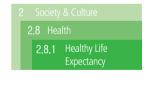
Relevant UN SDGs
main

3 GOOD HEALTH AND WELL-BEING

Relevant UN SDGs Indicators

· **3.8.1** : Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population)

· **3.d.1** : International Health Regulations (IHR) capacity and health emergency preparedness

Relevant Seoul SDGs

2	Society & Culture	
2.8	Health	
	2.8.1	Healthy Life Expectancy

Urban Issue Addressed

Nutrition and Health

Impact Investment Theme

Fitness and Wellbeing
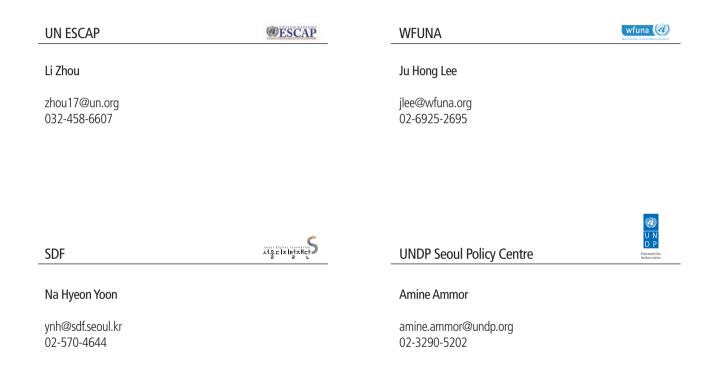
Disease Prevention and Response

Description of core product   Automatic prescription of Personal Nutritional Supplement Subscription service through medical nutritional data analysis algorism (Linked to health medical examination)

ǀ Contact

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URBAN INNOVATION CHALLENGE
CITYPRENEURS

SEOUL METROPOLITAN GOVERNMENT

UNITED NATIONS ESCAP
Economic and Social Commission for Asia and the Pacific

wfuna
World Federation of United Nations Associations

Seoul Digital Foundation
서울디지털재단