WORLD BANK GROUP

WORLD BANK WEBINAR

Smart Cities Indicators: How to make them practical & relevant for developing cities?

Main Findings from the 3rd edition of

2022 Smart Cities Index Report: Analysis of 31 Cities

15th Dec., 2022

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DTTM
IfM Engage
Information Systems Intelligence

About Speaker

JUNGHOON / LEE

Professional & Advisory Positions

- Professor of Technology & Innovation Management, Graduate School of Information, Yonsei University
- Program Chair for IoT Services Convergence Track, Graduate School of Information, Yonsei University
- Director of the Center for DT (Digital Transformation) Technology Management Center, ICONS, Yonsei University
- Director of Information Systems Intelligence Lab, Graduate School of Information, Yonsei University
- Member of the National Smart Cities Committee, Ministry of Land Infra. and Transport, Republic of Korea
- Chairman(2019-2021)/Member of the Smart Cities Committee of Seoul Metropolitan Government, Republic of Korea
- Member of the Public Data Strategy Working Committee, Ministry of Interior & Safety, Republic of Korea
- Chairman of the Special Committee on the Openness and Utilization of Public Data, Ministry of Interior & Safety, Republic of Korea
- Member of the National Data Policy Strategy & Working Committee, the Prime Minister's Office, Republic of Korea

Academic Qualifications

- Institute for Manufacturing, University of Cambridge, U.K.
  Ph.D. in Manufacturing Engineering and Management (IS)
- London School of Economics, University of London, U.K.
  M.Sc. in Analysis, Design and Management of Information Systems
- University of Manchester, U.K. / M.Sc. in Information Systems Engineering
- University of Manchester, U.K. / B.Eng. in Electronic Engineering

Industry Experiences

- Visiting Academic Fellow, Center for Technology Management, IfM, University of Cambridge, U.K.
- Visiting Professor, Graduate School of Business, Stanford University, U.S.A.
- Entrue Consulting Partners, LG CNS CO., Ltd, LG Group, Korea
  (Senior Business Consultant/Senior Research Fellow)
- LG-EDS Systems Inc, Korea Manufacturing and Logistics Consultant

Academic Accomplishment [Major Papers - Published in a total of 95 Journals/Conferences]

Lee, Y-J & Lee J-H (2016) "Knowledge workers' ambidexterity: conceptual separation of competencies and behavioral dispositions:, Asian Journal of Technology Innovation, Vol.24, No1. pp.1-22

Hu, MC,Wu, CY, Lee, JH Lu, YC (2014) "The influence of knowledge source and ambidexterity in the thin film transistor and liquid crystal display industry: evidence from Japan, Korea, and Taiwan", Scientometrics, Vol. 99, pp.233-260 [SSCI]

Lee, J-H, Hancock, M-G, Hu, M-C (2014) "Towards an effective framework for building smart cities: Lessons from Seoul and San Francisco", Technological Forecasting and Social Change, Vol. 89, pp.80-99. [SSCI, Most cited articles in TFS ranked 7th]

Lee, J-H, Phaal, R., Lee, S-H (2013) "An integrated service-device-technology roadmap for smart city development", Technological Forecasting and Social Change, Vol.80, pp.286-306. [SSCI, Most cited articles in TFS, ranked 6th]

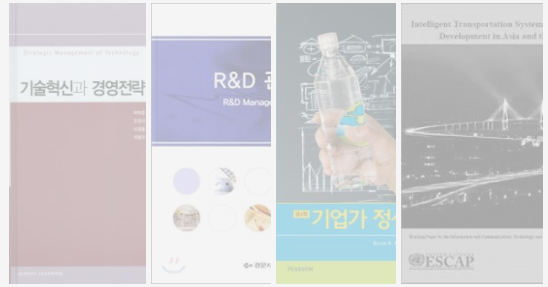
Major Bibliography

『Strategic Management of Technology and Technology Innovation』

『R&D Management』

『Entrepreneurship and Innovation』

『ITS in Asia』



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Urban & Social Problems + ICT Convergence

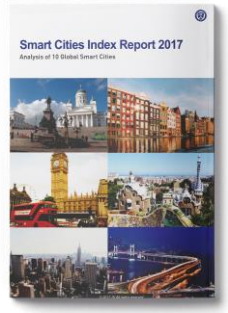
→ Smart City

*"Smart City is **an regional innovation platform or system** in which collectively discovers & develops new growth power in order to deal with urban issues with citizens, city officials, private companies etc. through intelligent & efficient management of environment, energy, urban infrastructure, & buildings using advanced ICT."* (J-H LEE, 2015 Smart City World Congress)

2022 Smart Cities Index Report

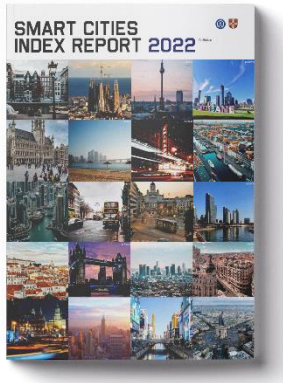
Smart Cities Index Report on 8 measurement dimensions based on 31 cities around the globe.

Smart Cities Index Report: 3rd Edition

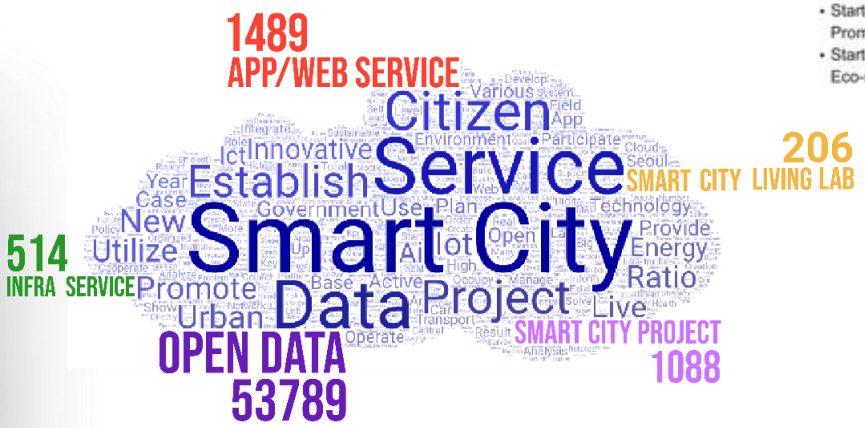


2017

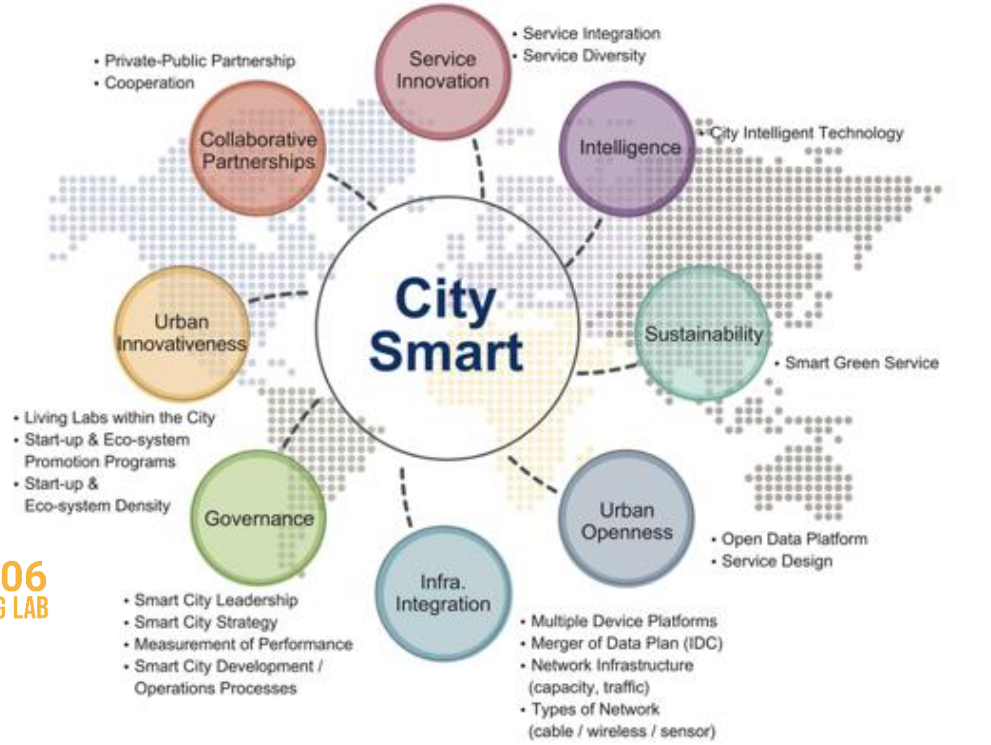
2019



2021/2022



Performance Measurement Dimensions



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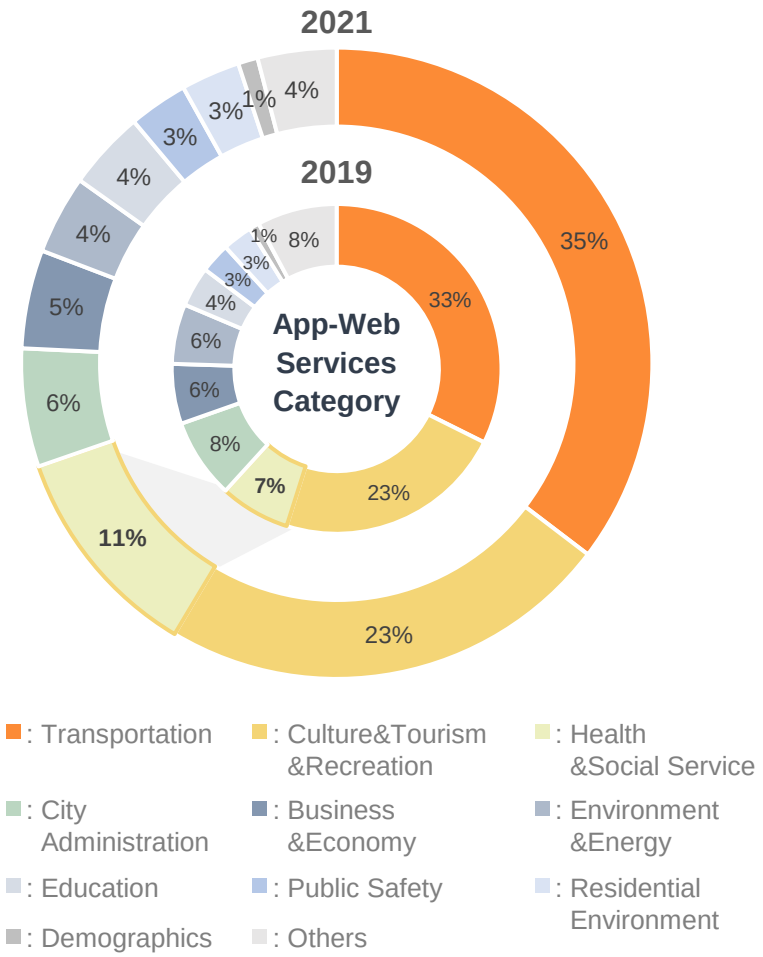
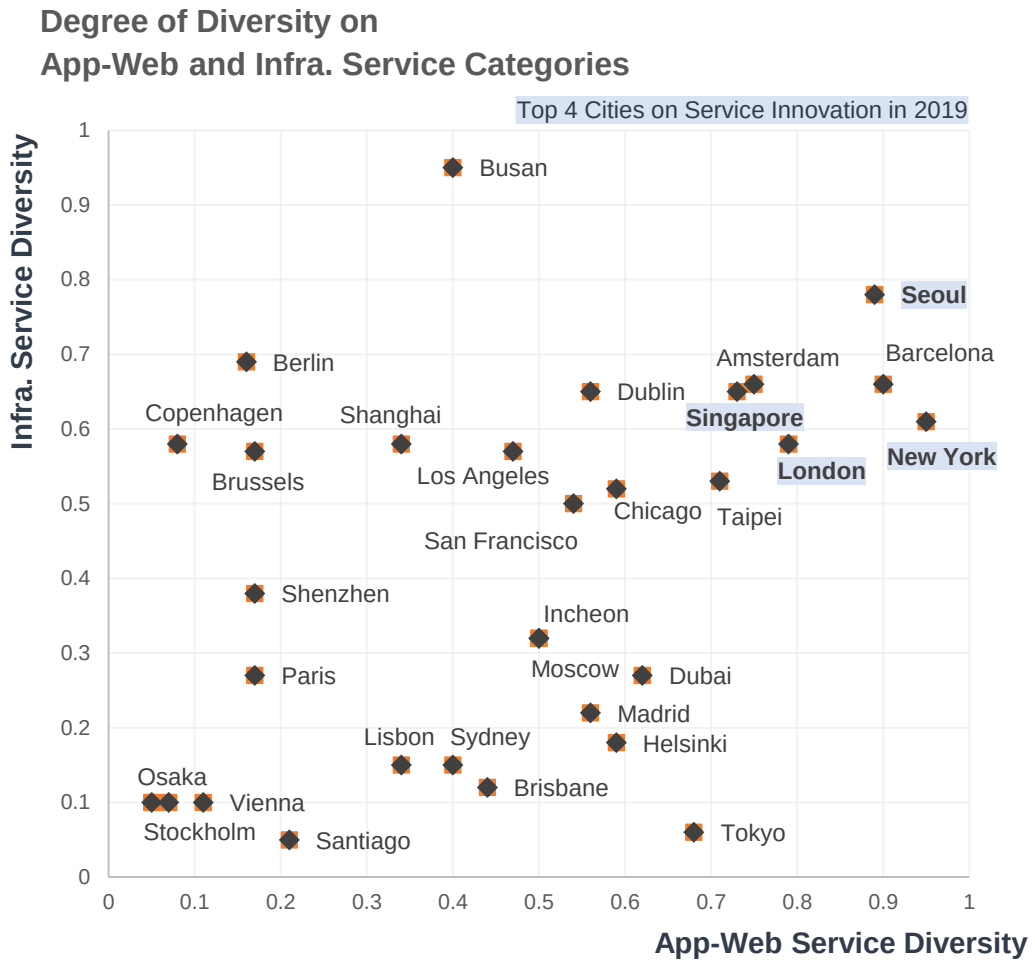
Key Findings: Service Innovation

Innovative Services & Projects Fuel Economic Recovery



Sample : 993 App-Web Services(2019), 1,489 App-Web Services(2021)

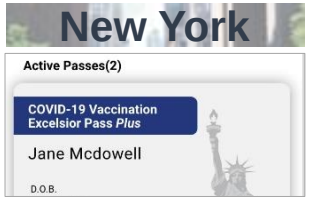


Sample : 1,489 App-web Service, 514 Infra-based Service

Digital Innovation

<CLOVA Carecall>

Emerging Industry Services



<NYS Excelsior Pass Scanner>

Healthcare &Social Services

<Farmaguia>

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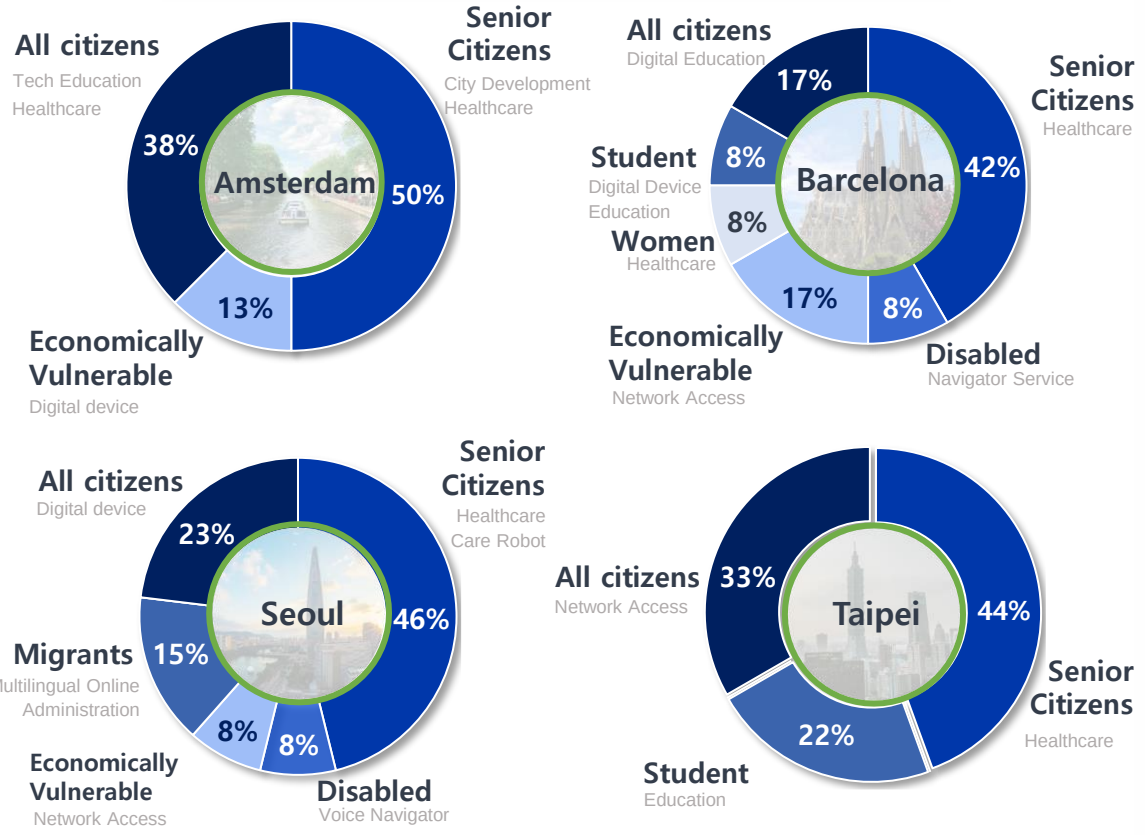
Key Findings: Service Innovation

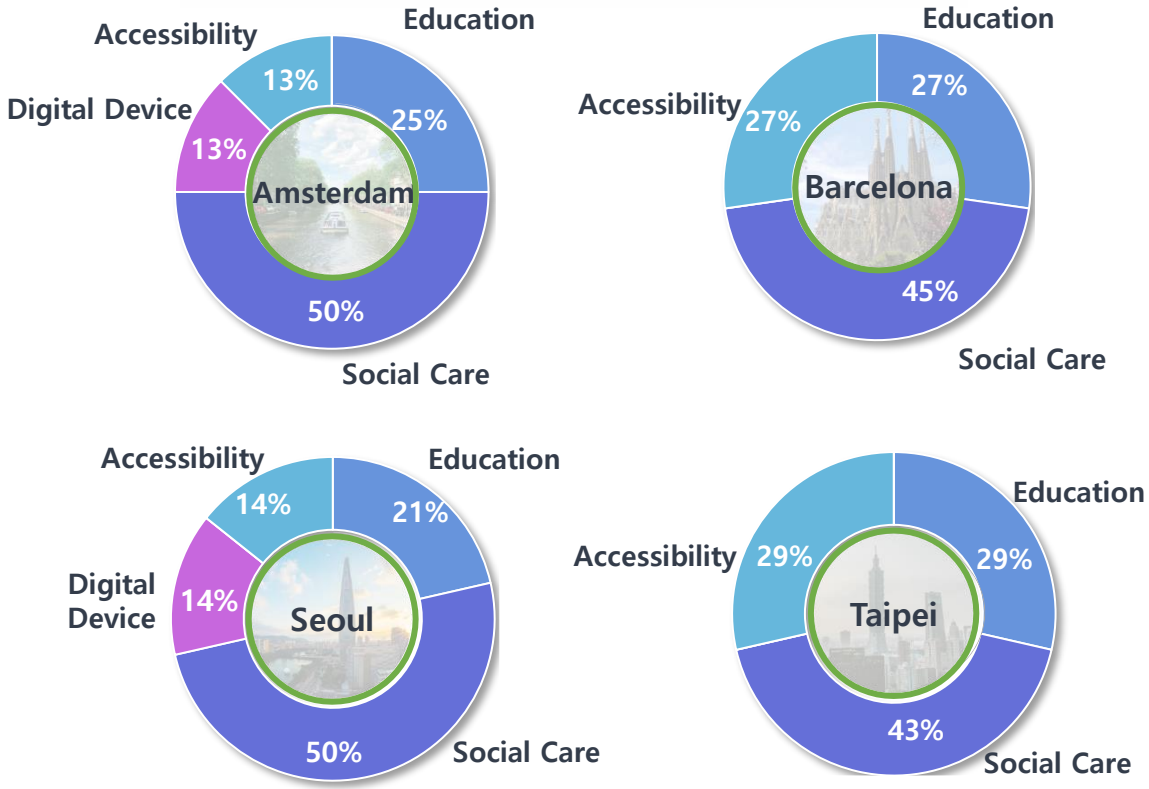
Citizen centric Digital Inclusion

"Inclusive Digital Transformation through Citizen-centric Smart City"

Subjects of the Digital Inclusion Services



Types of Digital Inclusion Services



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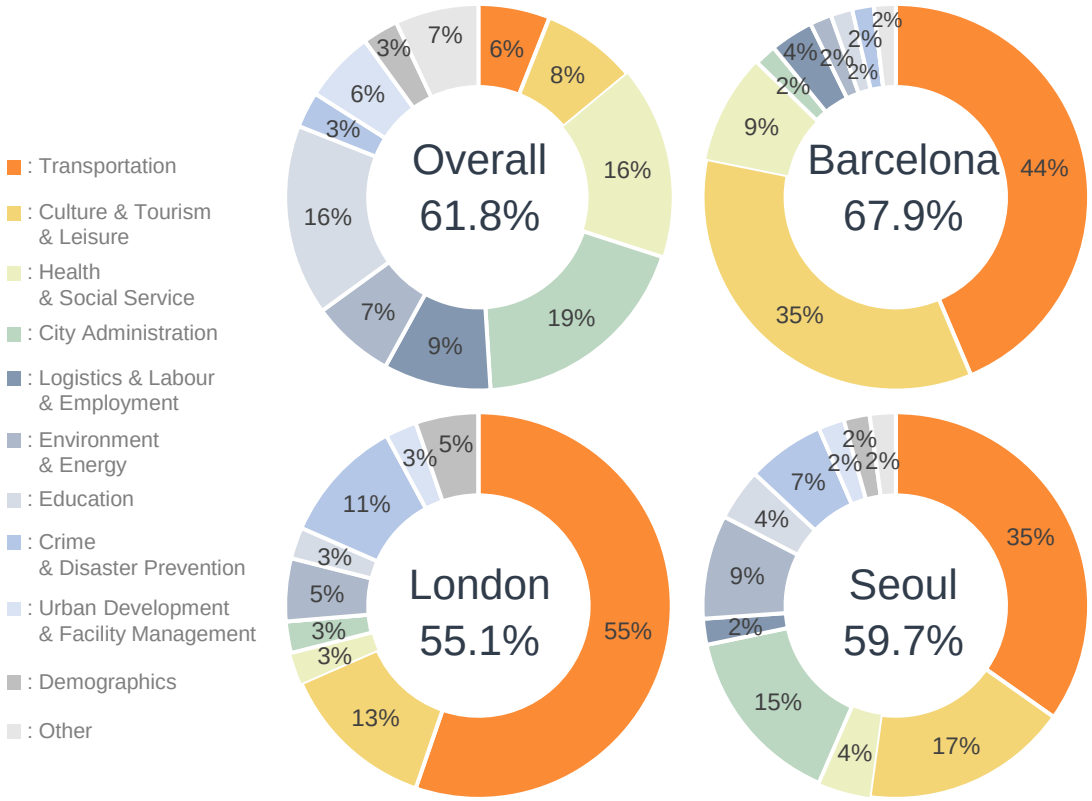
Key Findings: Urban Openness

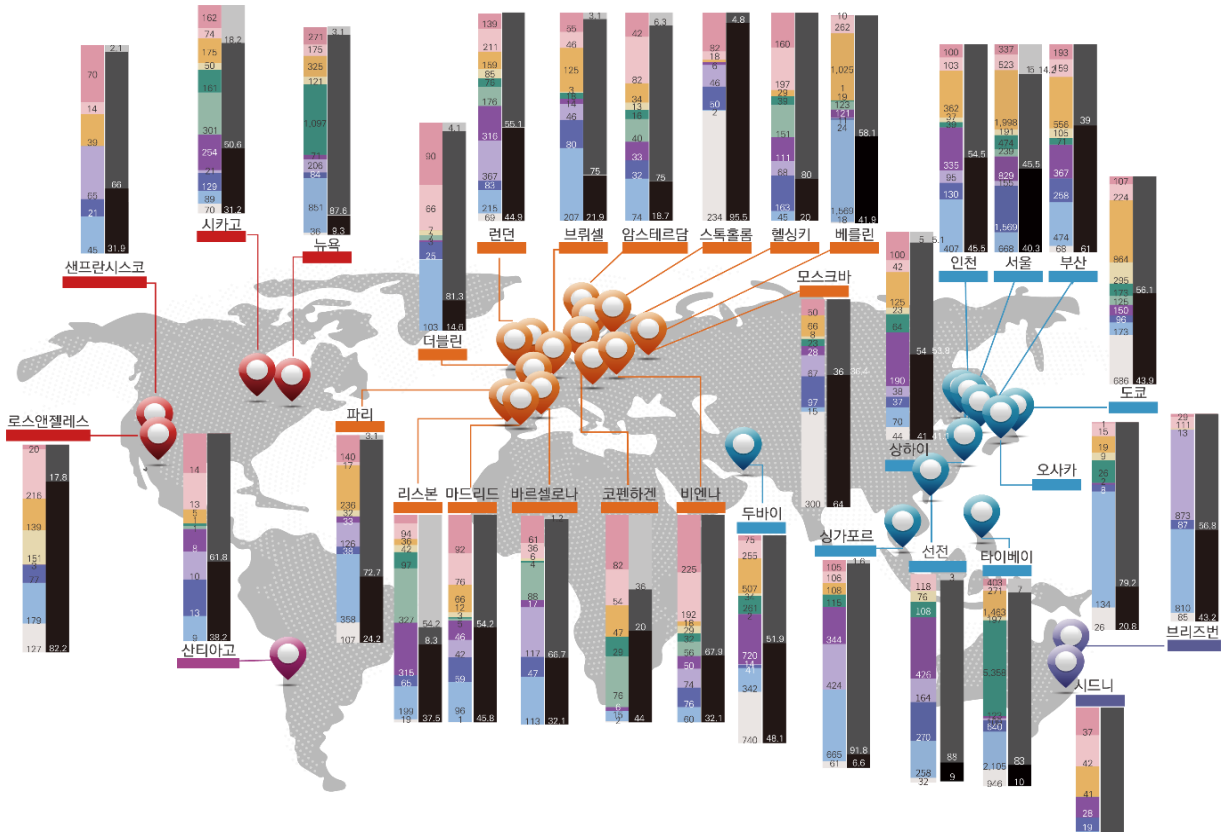
Urban openness, the driving force of innovation and an important factor to determine the competitiveness of a city, provides an activity-friendly environment for talents in the development of smart city services

- **Taipei, Seoul, New York etc. lead on Urban Open Data**
- **Average Public Data Utilization Rate: 61.8%**



Source: 31 Cities, 52,337 Data Sets

Singapore, Sydney, New York, Taipei are leading cities on Public Data Utilization [Over 90%]▼



Source: 2022 Smart Cities Index Report

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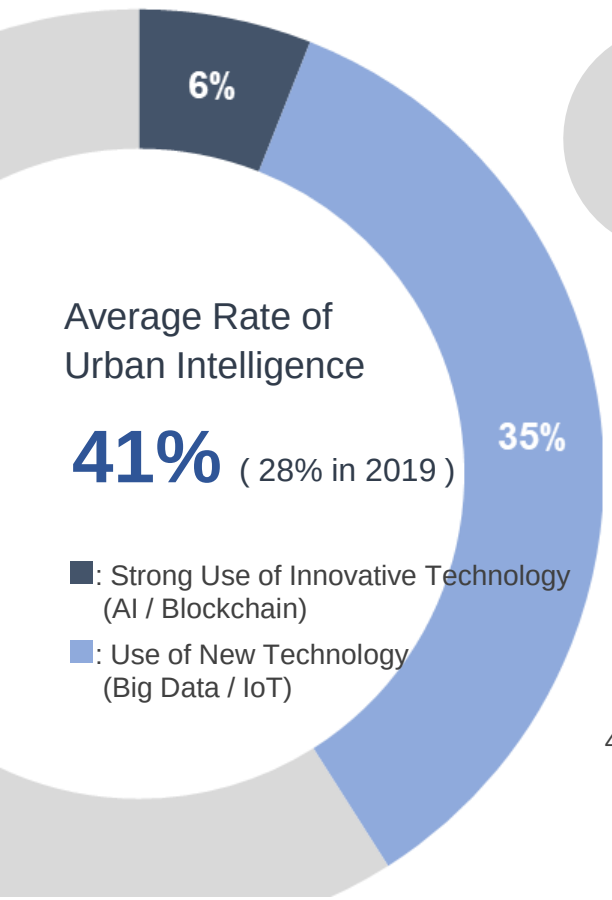
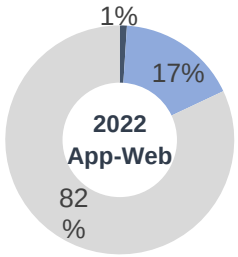
Key Findings: Urban Intelligence

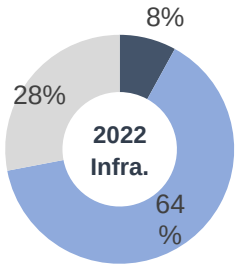
Urban Intelligence rate has grown 13%p with more broad service portfolio

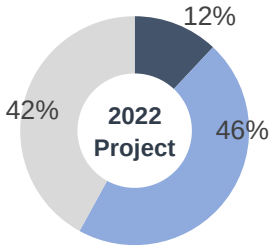
Cities are getting *MORE INTELLIGENT*

Sample : 1,628 Service/Infrastructure/Project (2019)
3,090 Service/Infrastructure/Project (2022)

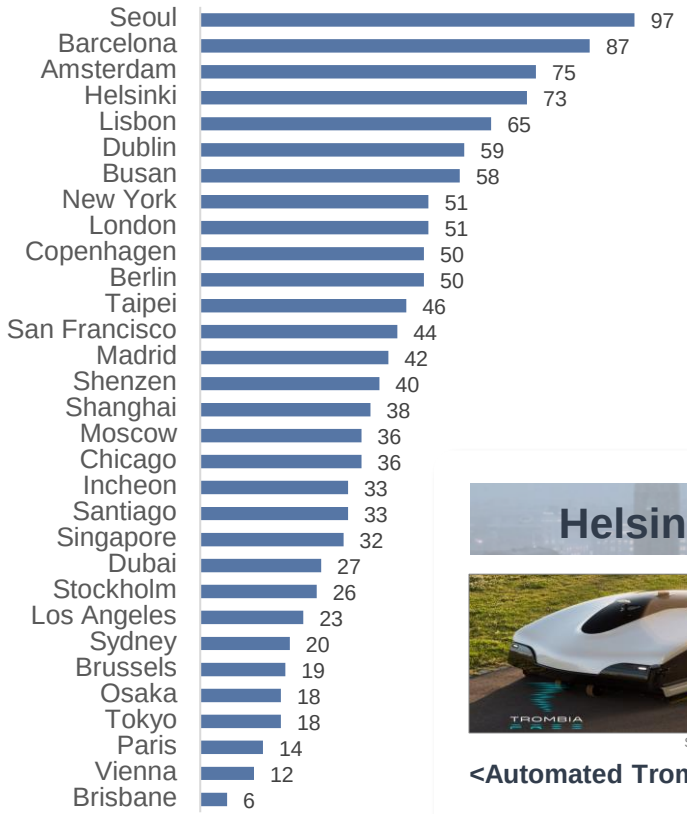




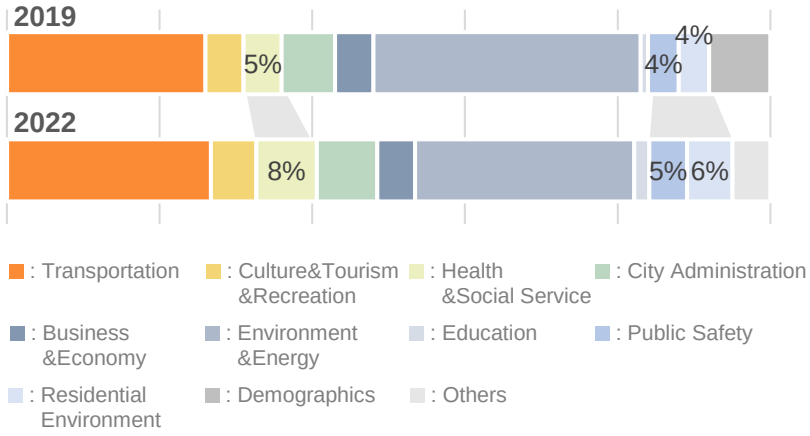




Urban Intelligence Ranking (Unit : Score)



Intelligent Service Portfolio



Helsinki

Source : GeekWeek

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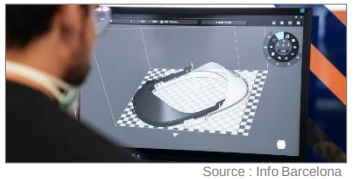
Seoul

Source : gather.town

<Metaverse : Gather.town>

Barcelona



Source : Info Barcelona

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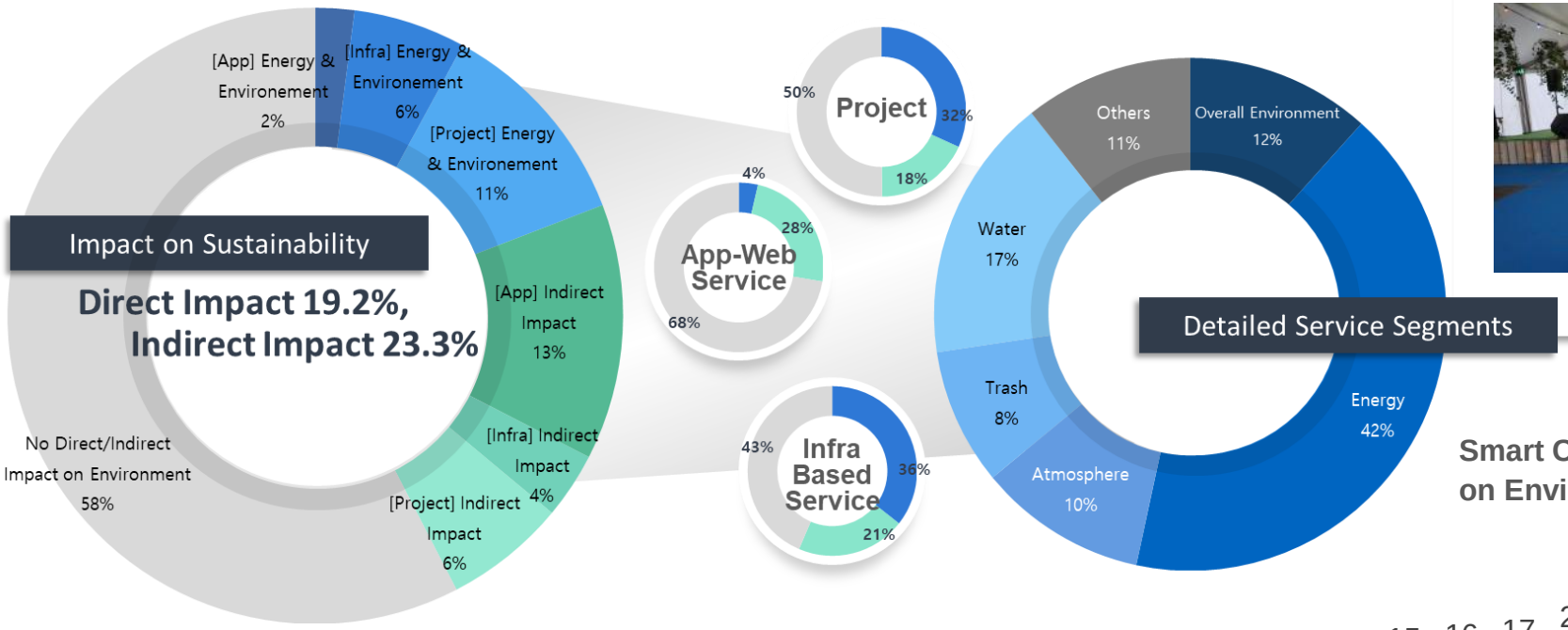
Key Findings: Urban Sustainability

Sustainable Growth is the Main Concern of Smart Cities

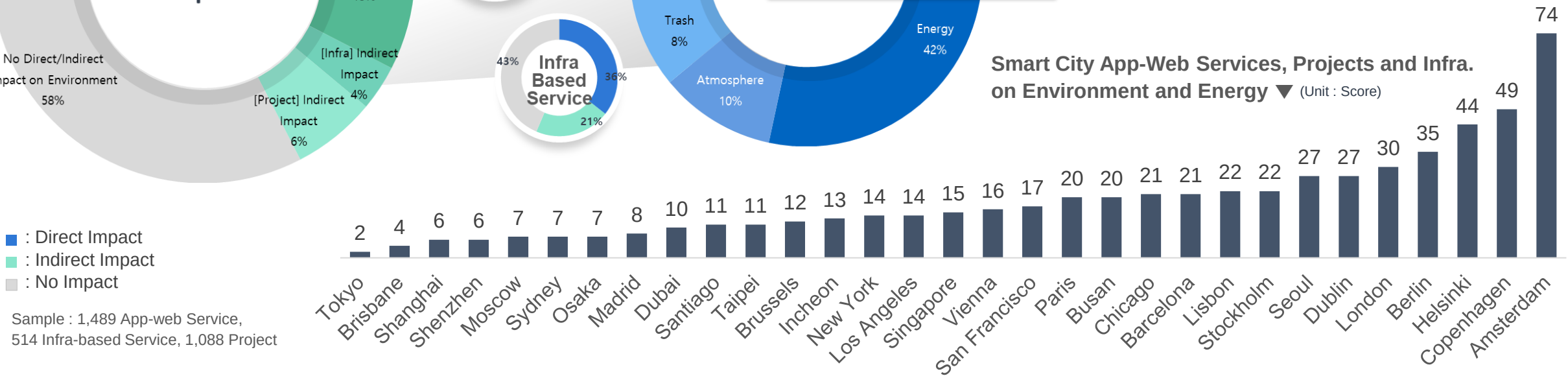


Source : Amsterdam Smart City

<3-cycle>

Source : Copenhagen Solutions Lab

<Project Air View>



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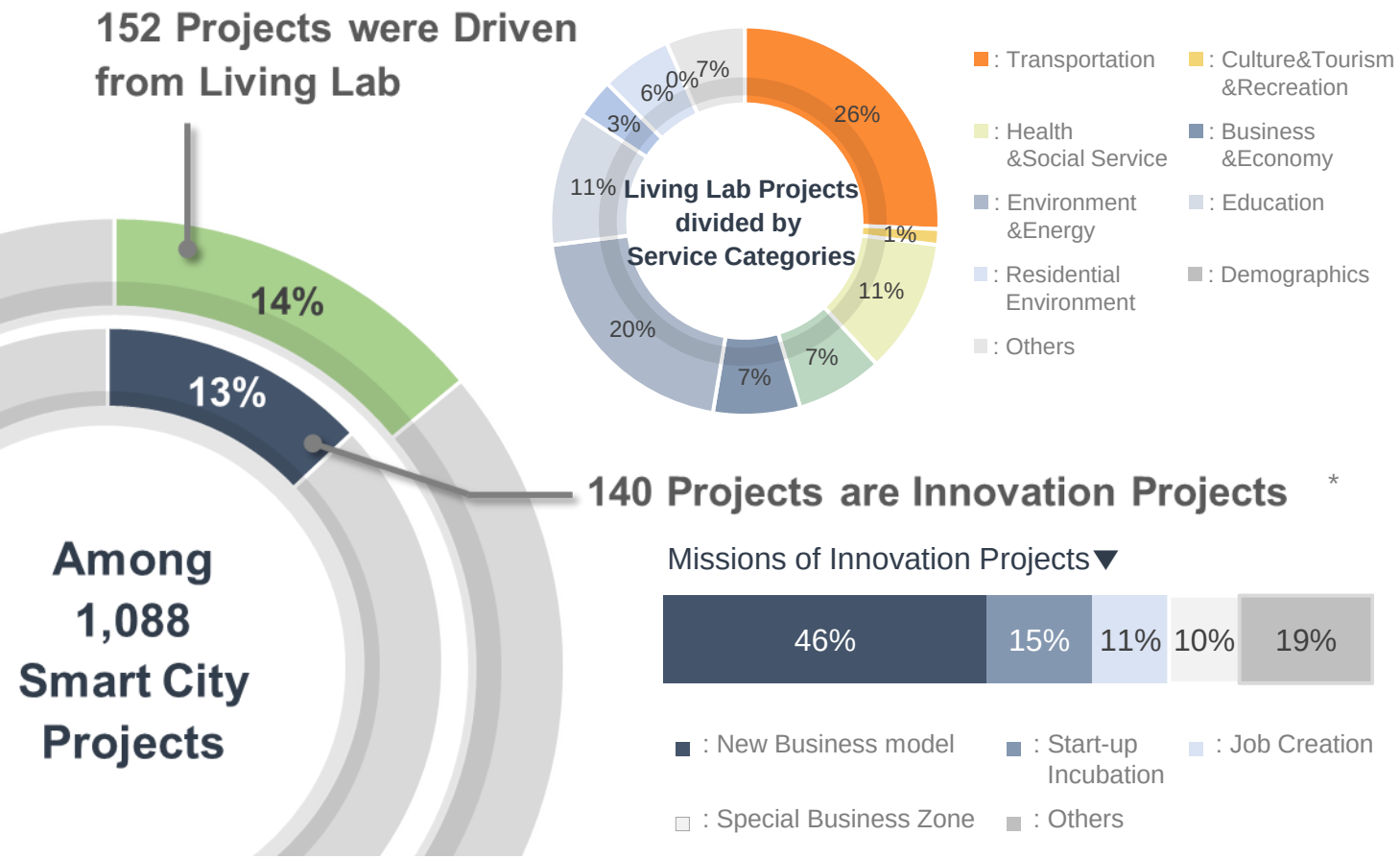
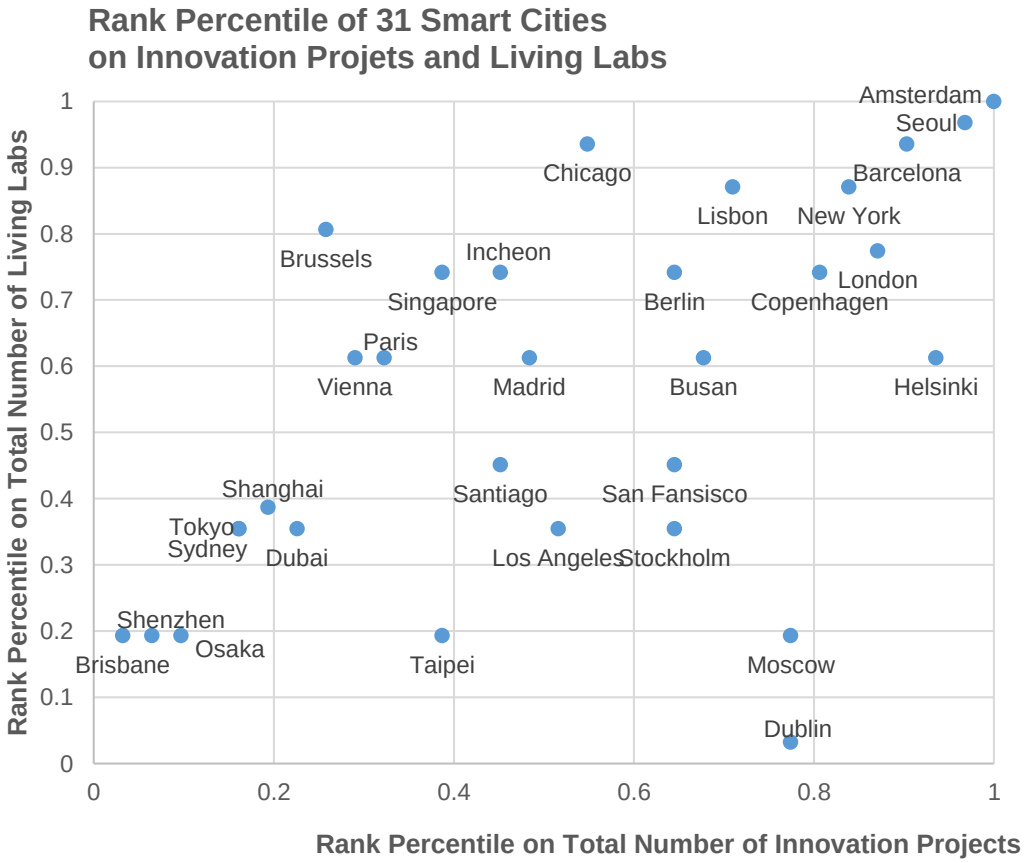
Key Findings: Urban Innovation

Innovative projects are breakthrough for protracted economic depression while Cities are deriving creative solutions on city issues through citizen-engaged Living Labs.

Living Lab Driven or Innovative Smart City Projects





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* Innovative Project is defined as a project that discovers, develops, and commercializes new services by introducing new technologies or methods that have not been done before, and creates new values by building a new ecosystem. (Source : Isi Lab Smart City KPI Definition)

Key Findings: Infrastructure Integration

Smart city infra, which is an aggregation of 4th industrial innovation technologies, is the basic infrastructure for ICT to be serviced on a platform of a city

Rader Chart for the 6 Elements that Make up the Digital Infrastructure of Smart Cities

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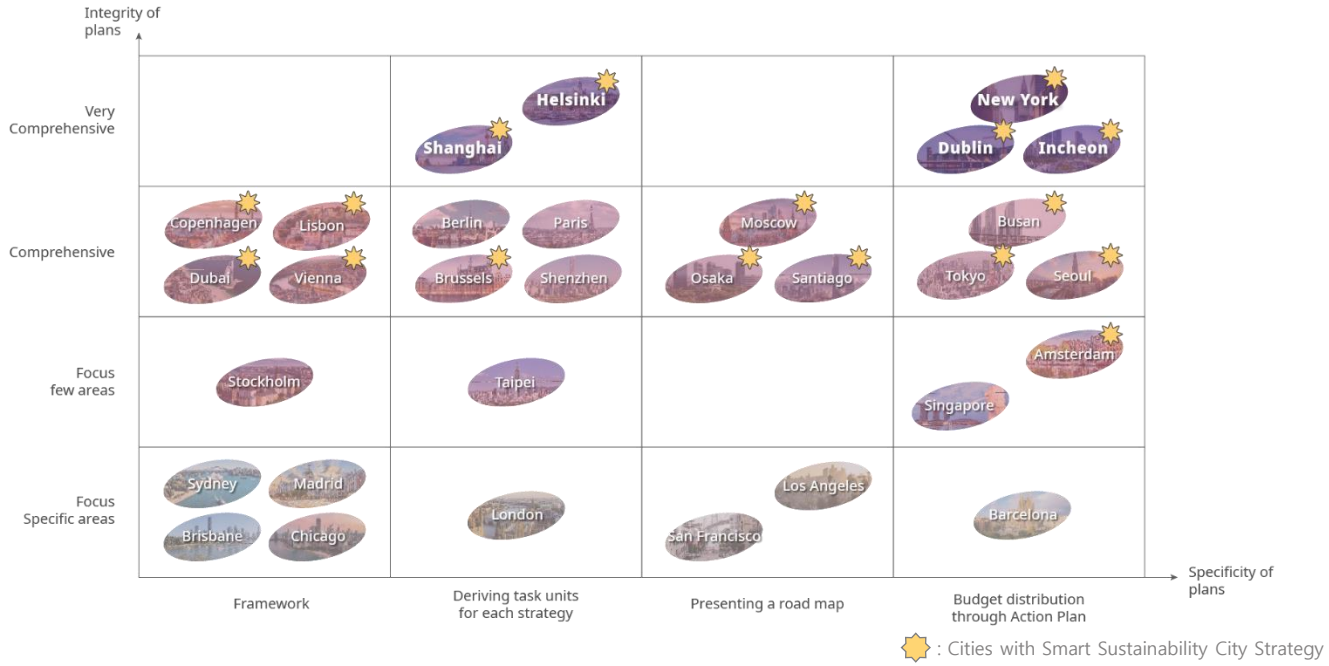
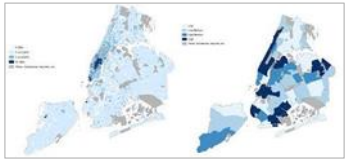
Key Findings: Smart City Governance

17 cities included strategic initiatives of ‘Smart Sustainability’ while ‘Vienna’, ‘Dubai’ and ‘Singapore’ are leading SDGs based Smart City Strategy.

Integrity and Concreteness of Global Smart City Strategies



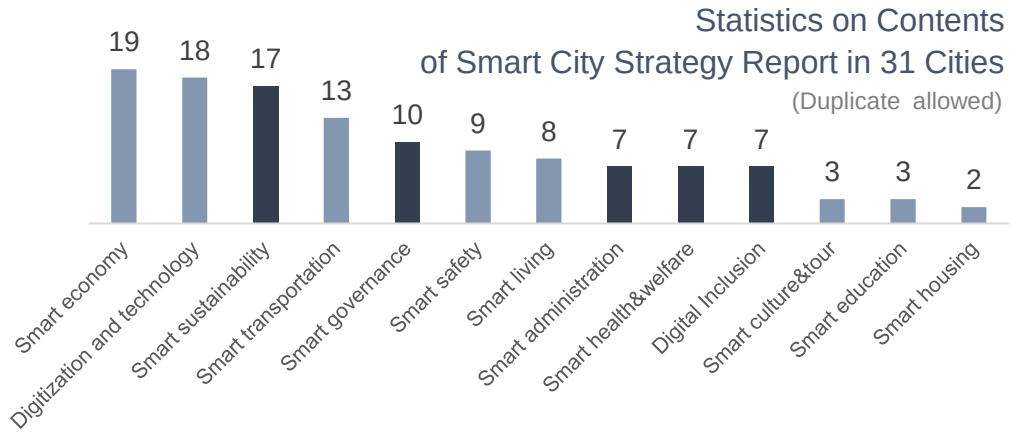


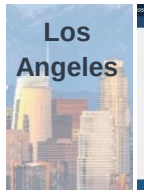
Internet Master Plan for Universal Broadband

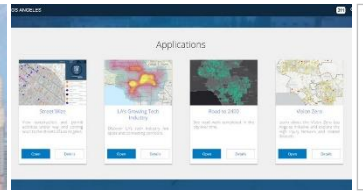
- A $157 million initiative which will expand low-cost or no-cost Internet access to every New Yorkers

Source : One NYC 2050

Governance for Citizen Participation & Social Equity







GeoHub

- Citizen-participating city administration tool with location-based data support efficient urban operation

Source : Esri

Digital Equity Strategy

- Strategies on improving access to internet, promoting digital literacy, and achieving sustainable, meaningful impact for underserved citizens

Source : Digital Equity Strategic Plan 2019-2024

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CONCLUSION

Test Bed for Energy & Env. Innovation

26% of Smart Cities have Innovation Specific District

61% of Smart Cities are maintaining or advancing their Living Labs

Core Unit of Intelligence

Average rate of urban intelligence has increased 13%p

48% of Smart Cities have advanced Open Data Portal

Cradle for Social Inclusion

42% of Smart Cities have initiatives on digital inclusion or smart health & welfare

39% of Smart Cities have advanced Public Free WiFi area

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IfM Engage Course Introduction

Smart Cities: Strategic planning and strategy implementation

Why IfM Engage Course?

- An overview of how a smart city vision and strategy can be defined.
- Introduction of key concepts and practice examples of a smart city.
- Insight about tools and techniques for strategic planning and measuring the success of the strategy implementation
- Learn methods that favour a fast start and agile implementation in order to achieve quick results, and benefit from exchanging experiences and lessons with delegates from other cities and countries.

Who should attend?

- Mayors, city authorities and councillors
- Ministers and policy makers
- Public and private sector professionals involved in urban planning and development

Register at:
https://engage.ifm.eng.cam.ac.uk/project/smart-cities-course/

- Smart city trends and drivers
- Case studies and global good practices in smart cities
- Identifying stakeholder needs
- Defining a smart city vision and strategy
- How can new technologies improve strategic planning and deliver on
- Identifying, prioritising and selecting new initiatives
- Measuring the success of the strategy
- Conducting a multi-stakeholder approach
- Design-thinking approaches to co-creation with citizens

All sessions will be live online meeting with application of i nteractive tools.

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THANK YOU

2022 Smart City Index Report

Available at

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YONSEI UNIVERSITY

UNIVERSITY OF CAMBRIDGE
Department of Engineering

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