



Appendix 5 – Table A2 Profile of Twenty-Five Benchmark Smart Cities

Rank and Initiatives	Smart City Definition (D), Type (T), and Vision(V)	Terms and Digital Platforms	Fab, Living or Urban Labs
<p>First place</p> <p>Amsterdam (NL)</p> <p>In 1994: Virtual Digital City (De Digital Stad-DDS)</p> <p>Since 2009: Amsterdam Smart City Program</p> <p>In 2015: IBM Smart City Challenge (SCC) Winner</p> <p>Since 2019: Amsterdam Climate Neutral2050 RoadMap Local Government and Private Sector</p>	<p>D: Not found.</p> <p>Phase 1: 2009 – 2011 focused on energy efficiency. Phase 2: 2012 – 2014 focused on energy efficiency and internet-related applications (Capra 2014, p. 40).</p> <p>V1: In 2020, Amsterdam will be one of the most sustainable cities in the world (Osieck, 2011 p. 155)</p> <p>T: Open Innovation Platform.</p> <p>V2: An open innovation platform that brings together innovation professionals from government, companies, knowledge institutions, and civil society organizations to shape the city and region of the future. (Amsterdam Smart City, 2022)</p>	<p>Fields: Economy, Environment, Living, Governance, People</p> <p>Goal: Efficiency, QoL, Sustainability</p> <p>TA: Technology</p> <p>Other: Apps, Open Innovation, Stakeholders</p> <p>Digital Platforms to Engage Citizens: Amsterdam Smart City Platform, Amsterdam Participatie, Amsterdam Smart Citizens Lab, CityData, Smart Health Amsterdam site, Budgetmonitoring, Amsterdam Smart City Living Lab, GVB app, LEAP, MyCleanCity app, Amsterdam Data Platform data.amsterdam.nl/</p>	<p>Amsterdam</p> <p>Energy City Lab</p> <p>Circle Lab</p> <p>Amsterdam</p> <p>Smart Citizens Lab</p> <p>FabLab</p> <p>Amsterdam</p> <p>Living Lab</p> <p>Circular</p> <p>Buiksloterham,</p> <p>Living Lab</p> <p>Sloterdijk III</p> <p>Waag Research Labs</p>



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



Rank and Initiatives	Smart City Definition (D), Type (T), and Vision(V)	Terms and Digital Platforms	Fab, Living or Urban Labs
<p>Second place Singapore 1986: National IT Plan 2006: Wireless@SG 2011: eGov2015 Master Plan 2012: Jurong Lake District won IBM SCC Since 2014: Smart Nation Initiative National, Local, Private</p>	<p>D: Not found, but it is pioneering in the concept of Smart Nation (Quélin and Smadja, 2021 p. 18)</p> <p>T: Digital Society, Economy, and Government.</p> <p>V: Smart Nation is a transformed Singapore where people will be more empowered to live meaningful and fulfilled lives, seamlessly enabled by technology, that offers exciting opportunities for all. It is where businesses can be more productive and take advantage of new opportunities in the digital economy. (Singapore Government, 2018)</p>	<p>Fields: Economy, People, Living, Governance Goal: Efficiency, QoL TA: Technology Others: Business, Digital Economy, Society, Government, Collaboration Digital Platforms to Engage Citizens: Smart Nation Platform, My Info, SingPass, Health Hub, Hello Lump Posts, SGSecure App, eCitizen, OneService App, CityLab Singapore Data Gov https://data.gov.sg/</p>	<p>Sustainable Living Lab (SL2) MPA Living Lab PSA Living Lab Jurong Port Living Lab NTU Smart Nation Translation Lab</p>
<p>Third Place London (UK) Since 2013: Smarter London Plan Won the ODI Annual Open Data Award 2015 Since 2018: Smarter London Together Roadmap</p>	<p>D: The general term used to discuss how cities across the globe are sharing information and making use of technology to work more efficiently (Greater London Authority, 2013 p. 58).</p> <p>T1: Smart</p> <p>V1: A city that uses the creative power of data and new technologies to serve London and improve Londoners’ lives (Greater London Authority, 2013 p. 13; 2016 p. 10)</p> <p>T2: Collaborative, Connected, and Responsive city.</p>	<p>Fields: Economy, Env., Gov., Living, People Goal: Efficiency, Sustainability, QoL TA: Connection, Technology, Information Others: Collaborative, Responsive, Data, City, Digital, Resilient Digital platforms: Talk London, Citymapper, Report It, London Living Streets, City Lab, Live Park, Citizen Lab, Safe & The City App,</p>	<p>CitizenLab Smart Mobility Living Lab (SMLL) Energy Systems Catapult Living Lab University of</p>



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



<p>Local, Private, National</p>	<p>V2: Integrates digital technologies and uses city-wide data to the needs of respond to our citizens (Greater London Authority, 2018)</p>	<p>London Datastore data.london.gov.uk/ Transport For London (TfL) Open Data http://bit.ly/3EMB7SJ</p>	<p>Greenwich Living Lab</p>
<p>Fourth place New York (USA)</p> <p>Since 2007: PlanNYC</p> <p>Since 2011: Digital City Roadmap NYP</p> <p>Since 2015: OneNYC</p> <p>Since 2022: OneNYC 2050</p> <p>OTI Strategic Plan Local initiative</p>	<p>D1: Any local government that leverages technology solutions to promote public health, safety and welfare, and improves quality of life for the residents of the municipality, especially traditionally underserved and under-resourced communities (NY State, 2020).</p> <p>D2: A local government that uses technology and planning practices to generate better outcomes for its residents through the use of data. (NYC (2021)</p> <p>T1: Digital City; V1: be recognized as the world’s top-ranked Digital City, based on indices of Internet access, Open Government, citizen engagement, and digital industry growth (NYC, 2011)</p> <p>T2: Connected City; V2: Ensure all New Yorkers have access to effectively engage with the digital economy and society (NYC OTI, 2022 p. 10)</p>	<p>Fields: Economy, Environment, Governance, Living, People</p> <p>Goal: Efficiency, Sustainability, QoL</p> <p>TA: Connection, Technology</p> <p>Others: Data, Digital City, Digital Industry, Digital Economy, Open Government.</p> <p>Digital platforms: NYC Engage, NYC Open Data, NYC 311, Participatory Budgeting, Urban Innovation Lab, Cowlines App, Nextdoor App, Mytown App, NYC Open Data</p> <p>https://opendata.cityofnewyork.us/data/</p>	<p>NYCx Co-Lab</p> <p>Urban Future Lab</p> <p>Urban Innovation Lab</p>



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



Rank and Initiatives	Smart City Definition (D), Type (T), and Vision(V)	Terms and Digital Platforms	Fab, Living or Urban Labs
<p>Fifth place Helsinki (Fi)</p> <p>In 2010: Helsinki Region Infoshare Program</p> <p>In 2011: Won IBM SCC: A project to open data to citizens.</p> <p>Since 2012 (?): Helsinki Smart Region</p> <p>Since 2014: Smart & Clean Helsinki Metropolitan Area</p> <p>Since 2017: Helsinki City Strategy</p> <p>Local, Private, and Region</p>	<p>Not found Smart City definition.</p> <p>T1: Living Lab (a platform for collaborative projects that bring users with their ideas, experiences, and enable the business community to develop the products and services that are of the greatest interest to the public) (Hielkema and Hongisto, 2012).</p> <p>V1: Not clear</p> <p>T2: Platform for Smart and Clean Solutions.</p> <p>V2: Turn the Helsinki Metropolitan area into an internationally important reference area for ecological and smart solutions by 2021 and showcase the best products and services of Finnish and international companies. (SITRA, 2015)</p> <p>T3: Innovation ecosystem for Green and Digital Transition.</p> <p>V3: Until 2021, to be the world’s most functional city. In addition, Helsinki aims to be the city in the world that makes the best use of Digitalization (Helsinki, 2017 p. 16).</p> <p>V4: Not clear but focuses on three themes until 2030: Citizens’s City, Climate Neutrality, and Industrial Modernization. (Helsinki Smart Region, 2022)</p>	<p>Fields: Environment, Governance, Living, People, Economy</p> <p>Goal: Efficiency, Sustainability, QoL</p> <p>TA: Technology</p> <p>Others: Data, Living Lab, Platform, Innovation, City, Industrial Modernization, Digital, Ecosystem</p> <p>Digital Platforms to Engage Citizens:</p> <p>Helsinki Smart Region website</p> <p>Helsinki Regional Infoshare</p> <p>Forum Virium Helsinki</p> <p>Digital Forms</p> <p>Waste Management System</p> <p>FixMyStreet</p> <p>mySMARTLife</p> <p>Open Data Service</p> <p>https://hri.fi/en_gb/</p>	<p>Forum Virium Helsinki</p> <p>Kalasadama Urban Lab</p> <p>Jatkasaari Smart Mobility Lab</p> <p>Helsinki Living Lab</p> <p>Mobility Lab Helsinki</p>



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



Rank and Initiatives	Smart City Definition (D), Type (T), and Vision(V)	Terms and Digital Platforms	Fab, Living or Urban Labs
<p>6th Seoul (SK)</p> <p>Since 2011: Smart Seoul 2015</p> <p>Since 2016: Global Digital Seoul 2020 Master Plan</p> <p>Since 2018: Smart City Strategic Plan</p> <p>In 2019: Magok Smart City Living Lab</p> <p>Since 2021: Smart Seoul Smart City & Digitalization Master Plan Local, Private, National</p>	<p>Not found local definition, but national</p> <p>D1: A platform to improve the quality of life of citizens, enhance the sustainability of cities, and foster new industries by utilizing innovative technologies of the fourth industrial revolution era. (South Korea Ministry of Land, Infrastructure and Transport, 2019 p. 5)</p> <p>D2: A sustainable city where various city services are provided based on city infrastructure constructed by converging and integrating construction technologies, information and communications technologies, etc. to enhance its competitiveness and livability (South Korea MOLIT, 2021).</p> <p>V1: By 2015, Seoul will become a city that best applies Smart Technologies, thought which we will make real your slogan, ‘Seoul, a city of happy citizens and a city beloved by the world’ (Seoul Metropolitan City, 2011 p. 2)</p> <p>T1: Smart Government</p> <p>V2: By 2020, a digital Seoul made by citizens for better economy lives to become a global digital leader (Seoul Metropolitan Government, 2016 p. 5)</p> <p>T2: Connected, Digital</p>	<p>Fields: Economy, Environment, People, Living</p> <p>Goal: Quality of Life, Sustainability</p> <p>TA: Technology, ICT,</p> <p>Others: Digital, Innovation, Platform, Global</p> <p>Digital Platforms to Engage Citizens:</p> <p>Seoul Smart City Platform</p> <p>Safety e-Report</p> <p>Mvoting App and Site</p> <p>Open Data Seoul https://data.seoul.go.kr/</p>	<p>Magok Smart City Living Lab (MLL)</p> <p>Living Lab in Seoul Innovation Park</p> <p>Seongdaegol Living Lab</p> <p>Yonsei University’s Information System Lab</p>



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



	V3: Seoul, Leading the Future of Digital Transformation as a Global Smart City (Seoul Metropolitan Government, 2021)		
<p>7th Copenhagen (DK)</p> <p>In 2012: CPH 2025 climate plan</p> <p>In 2013: Won IBM SCC Denmark Digital Growth</p> <p>Since 2013: Copenhagen Connecting Greater Copenhagen Smart City (?)</p> <p>Local & Private</p>	<p>D1: not found, but the smart city initiatives focused on environmental issues that are related to the commitment to carbon neutrality (Quélin and Smadja, 2021 p. 14)</p> <p>T1: Carbon Neutral</p> <p>V1: Make the city carbon neutral by 2025, and in doing creating a greener, more sustainable, and more livable capital city, as well as supporting growth (C40 Knowledge, 2017; Quélin and Smadja, 2021).</p> <p>D2: not found; T2: Connected; V2: Be the best urban environment and a unique urban life.</p> <p>Goals related to Green and Blue Capital, World best city for cyclists, carbon neutral capital, clean and healthy city. Almanac (n.d.); Holm Carlsen (2014).</p> <p>D3: A living laboratory for testing smart technologies to address the challenges of urbanization and climate change. Unique access to data and efficient public-private sector partnerships to attract many multinationals. (Copenhagen Capacity, n.d.) T3: Living Lab V3: not found.</p>	<p>Fields: Environment, Governance, Living, People</p> <p>Goal: Efficiency, Sustainability, Quality of Life</p> <p>TA: Technology, Connection</p> <p>Other: Living Laboratory, Data, PPP, Stakeholders</p> <p>Digital Platforms to Engage Citizens:</p> <p>Copenhagen Solutions Lab</p> <p>Copenhagen Citizen Service</p> <p>Copenhagen City Data Exchange</p> <p>WeSolve Better Together site and App</p> <p>Open Data DK Opendata.dk/ City-of-copenhagen</p>	<p>Copenhagen Solutions Lab</p> <p>Copenhagen Living Lab</p> <p>Copenhagen Street Lab</p> <p>DOLL Living Lab</p> <p>EnergyLab Nordhavn</p> <p>Energy & Water - Greater Copenhagen Living Lab</p> <p>Living Lab Strandvejen</p>



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



Rank and Initiatives	Smart City Definition (D), Type (T), and Vision(V)	Terms and Digital Platforms	Fab, Living or Urban Labs
<p>8th Oslo (NO) (?) Not found organized information</p>	<p>D: An urban area that has become more efficient and/or more environmentally friendly and/or more socially inclusive using digital technologies (Nordic Smart City Network, 2021 p. 6) T: Open, Connected, Sustainable, and Innovative V: It is an urban development vision to improve the lives of citizens by being open, connected, sustainable, and innovative. (Nordic Smart City Network, n.d.)</p>	<p>Fields: Economy, Environment, Living, People. Goal: Efficiency, Sust., QoL TA: Connection, Tec. Others: Open, Innovation, Digital. Digital platforms: Futurebuilt, Urban Sharing, Oslo Toll Ring Smart Oslo Accelerator Oslo Statistics Bank statistikkbanken.oslo.kommune.no/webview/</p>	<p>Living Lab Vollebekk Oslo Living Lab Smart Security Lab</p>
<p>9th Vienna (AT) Since 2011: The Big Smart City Wien Initiative Since 2014: Smart City Wien Framework Strategy Reviewed 2022: Smart Climate City Strategy Vienna Local</p>	<p>D1: A city that faces the challenges in the wake of decreasing resource consumption combined with rising demands (Stadt Wien, 2015 p. 6). T1: Livable City; V1: In 2050, Vienna is a vibrant metropolis and one of Europe’s most attractive cities. Goals: To offer optimum quality of life, combined with the highest possible preservation of resources, to all citizens. This can be achieved through comprehensive innovations. (Stadt Wien, 2015 p. 16 and p. 19). D2: The smart city never loses sight of the “human dimension”; a city that places the focus on the needs of the local people. The development of a</p>	<p>Fields: Environment, Living, People Goal: Sustainability, QoL TA: Technologies Others: Resource Conservation, Social Innovation, Technical Innovation Digital platforms: The Smart City Wien websi+B24te junges.wien.gv.at</p>	<p>Aspern Smart City Living Lab Siemens Living Lab Process Industries Smart City Lab</p>



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



	<p>sustainable and livable city is only successful if everyone benefits, and everyone is able to play their part.</p> <p>T2: Sustainable, Livable City</p> <p>V2: a city where life is good, but not at the expense of the environment and thus of future generations. Vienna uses the opportunities that social innovations and new technologies bring with them actively and prudently to achieve the goals. (Stadt Wien, 2020; 2022p 21)</p>	<p>ALBin Project</p> <p>Digital School project</p> <p>The Vienna City Bike System</p> <p>MA 48 Waste App</p> <p>Open Government Data (OGD) Wien Platform digitales.wien.gv.at/ open-data/</p>	
<p>10th Washington, D.C. (USA)</p> <p>Since 2016: Smart DC Initiative National</p>	<p>D: One in which information and communication technology facilitates improved insight into and control over the various systems that affect the lives of residents. (Cuddy et al., 2014).</p> <p>T: Connected City</p> <p>V: A city to connect its communities, build economic strength, protect the natural environment, and maintain the safety and security of its infrastructure.</p> <p>Goal: to become a connected city that benefits all components of the transportation systems—agencies, users, and infrastructure—and that the transportation systems support the district’ systems and broader goals (Washington District Department of Transportation, 2016 p. 1 and p. 25)</p>	<p>Fields: Economy, Environment, Mobility, People.</p> <p>Goal: Efficiency, Sustainability</p> <p>TA: Connection, ICT</p> <p>Other: Infrastructure, Transportation System</p> <p>Digital Platforms to Engage Citizens: OCTO website 311DC App My DC Water App Washington Open Data https://data.wa.gov/</p>	<p>The Lab @ DC</p> <p>UrbanPlan</p> <p>Virginia Tech Urban Living Lab</p>



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



Rank and Initiatives	Smart City Definition (D), Type (T), and Vision(V)	Terms and Digital Platforms	Fab, Living or Urban Labs
<p>11th Zurich (ZH)</p> <p>Since 2018: Strategic Smart City Zürich Local Initiative</p>	<p>D: A city that connects people, organizations, and infrastructure in such a way that social, ecological, and economic added value is created. The networking of data, sensors, and applications allows new and more efficient solutions for the users of urban infrastructures, as well as for those who operate them. Good networking with the population strengthens opportunities for participation and contact with the administration (Zurich City, 2018 p. 4)</p> <p>T: Connected, Collaborative, and Digital City</p> <p>V: Not found.</p>	<p>Fields: Economy, Env., Governance, Living, People Goal: Efficiency, Sustainability, QoL TA: Connection, ICT, Technology Other: Applications, Data, Stakeholders, Networking, Sensor, Collaborative</p> <p>Digital platforms: The Smart City Zurich website, City Lab, The Zurich Pedestrian Navigation System, Pikmi on-demand transport service, ZüriMobil app, My account, Zurich Open Data data.stadt-zuerich.ch/</p>	<p>Reallabor Hunziker Areal Hunziker Areal Living Lab Smart City Lab</p>
<p>12th Berlin (DE)</p> <p>Since 2015: Smart City Strategy Berlin 2017: Launch of Smart City Charter: Making Digital Transformation at the local level sustainable</p>	<p>D1: Cities which achieve a significantly higher or stable quality of life while using the same or a lower level of resources. This can only be achieved by means of an urban management which, by using innovative information and communication technologies...</p> <p>T1: Smart Administration, E-Government</p>	<p>Fields: Economy, Environment, Governance, Living, People Goal: Efficiency, Sustainability, QoL TA: Connection, ICT, Technology Other: Digital, Integration, Network, Resources, Urban Management, Innovation, Cooperative, Resilient, Open,</p>	<p>CityLAB Berlin, Citizens Create Climate Knowledge Climate Art Lab EUREF Campus My-Co Place</p>



<p>2021 Strategic framework Smart City Berlin Since 2022: Digital Together: Berlin Strategy UE, Private and Local Initiatives</p>	<p>V1 (?): Smart Berlin is both a place to live and an economic area which develops sustainably through the systematic and intermodal deployment of innovative technologies, materials, and services... (Berlin Senate Department for Urban Development and the Environment, 2015 p. 5) D2: Smart city is Livable, Lovable, Diverse, Open, Participatory, Inclusive, Climate neutral, Resource efficient, Competitive, Open-Minded, Innovative, Responsive, Sensitive, Safe, and freedom enhancing city. (BBSR and BMUB, 2017 p. 25) D3: "smart" means tackling challenges sustainably, with a focus on the common good and working collaboratively, and all the while shaping change processes in a resilient manner. T2: Livable, Digital V2: A sustainable, community-oriented, resilient and cooperative city (Berlin State, n.d; 2022)</p>	<p>Inclusive Digital Platforms to Engage Citizens: Berlin.de Berlin App Berlin Citizen Participation Platform Berlin Living Lab Open Data Berlin https://daten.berlin.de/</p>	<p>SAI-Lab</p>
---	--	--	----------------



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



Rank and Initiatives	Smart City Definition (D), Type (T), and Vision(V)	Terms and Digital Platforms	Fab, Living or Urban Labs
<p>13th Sydney (AU)</p> <p>Since 2020: Smart City Strategy Framework</p> <p>Digital strategy</p> <p>Local Initiative</p>	<p>D: Is one that uses information and communications technology to enhance its livability, workability, and sustainability. (City of Sydney, 2020 p. 55; Bane, 2022)</p> <p>T1: Dynamic, Digital, Responsive</p> <p>V1: Its vision is a dynamic, responsive city, harnessing technology and data to enable collaborative innovation and create a thriving, inclusive, and resilient future for all. (City of Sydney, 2020a p. 12)</p> <p>T2: Innovative, Livable</p> <p>V2: Sydney to continue to be one of the most innovative and livable cities in the world. (City of Sydney, 2020b)</p>	<p>Fields: Governance, Living, Economy, Environment</p> <p>Goal: Sustainability QoL</p> <p>TA: ICT. Technology</p> <p>Other: Data, Collaborative, Resilient, Innovation, Work</p> <p>Digital platforms: Sydney Your Say website, City of Sydney Data hub, The City of Sydney App, cityofsydney.nsw.gov.au City of Sydney Data Hub data.cityofsydney.nsw.gov.au</p>	<p>Intergener8</p> <p>Living Lab</p> <p>Infosys Sydney Living Lab</p> <p>Sydney Science Park Living</p> <p>CSIRO Urban Living Lab</p>
<p>14th Taipei (Taiwan)</p> <p>In 2008: The Institute for Information Policy established Living Lab</p> <p>In 2013: Won IBM SCC</p> <p>Since 2016: Taipei Smart City</p>	<p>D: Government as a Platform; City as a Living Lab, focusing on one core vision (Livable+Sustainable) plus seven fields: Smart Security, Building, Transportation, Education, Health, Environment, and Economy. (Taipei City Government, n.d.)</p> <p>T: Platform, Living Lab</p> <p>V: As part of National Vision: Smart technologies are applied to solve the pain points of local government</p>	<p>Fields: Economy, Environment, Governance, Living, Mobility, People.</p> <p>Goal: Efficiency, Sustainability, QoL</p> <p>TA: Information, Technology</p> <p>Other: Innovation, Stakeholders (PPP), Security, Living Lab, Platform</p> <p>Digital platforms: Living Lab, Tapei Navi, Taipei CooC-Cloud, The Taipei Smart Parking System, Smart Taipei</p>	<p>Fablab Dynamic</p> <p>Taipei Smart City Living Lab</p> <p>JCA Living Lab</p>



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



<p>Project Management Office Since: 2020 Taipei Smart City 1+7 Framework National, Local and Private Initiative</p>	<p>and civilians, boost cross-domain industry collaboration, and achieve local and industrial innovation. (Taiwan Ministry of Digital Affairs, n.d.)</p>	<p>website, Open Platform for Government Information of the New Taipei City. https://data.ntpc.gov.tw/ Taipei City Data Big Platform https://data.taipei/</p>	<p>Living Lab +</p>
<p>15th) Barcelona (ES) Since 2000: 22@Barcelona Project 2008Urban Lab Since 2011: IT Strategy aligned to EU Horizon Strategy Smart City Strategy Smart City Expo and World Congress Since 2015: Barcelona Digital City Plan EU, Local, and Private</p>	<p>D1 and V1: ‘To become a self-sufficient city of productive neighborhoods at human speed, within a hyper-connected zero emissions metropolitan area’ (Olivella, 2012; Ferrer, 2017 p. 73; T. Miao and Phelps, 2019 p. 14) T1: Self-sufficient, hyperconnected, urban lab D: Not found T2: Digital, Sovereign City V2: not clear, but there is this declaration: Barcelona aspires to evolve the Smart City Agenda towards becoming a digital sovereign city, empowering citizens to discuss and articulate their own priorities, set direction, and decide upon ethical uses of technological innovations with clear social impact and public return. (Ajuntament Barcelona, 2019 p. 5).</p>	<p>Fields: Economy, Governance, People, Environment Goal: Efficiency, Sustainability, QoL TA: Connection, Technology Others: Innovation, City, Stakeholders Digital platforms: Aplicaciones.bcn Barcelona in your pocket Decidim Barcelona Governance Model Participa.barcelona Wesolve – Better Together app Open Data BCN</p>	<p>City Lab Barcelona Fab City Hub Barcelona Fab Lab Barcelona Data City Lab 22@LIVING Lab The Healthcare Living Lab Catalonia (HCLLC) The Library Living Lab – Barcelona (L3)</p>



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



Rank and Initiatives	Smart City Definition (D), Type (T), and Vision(V)	Terms and Digital Platforms	Fab, Living or Urban Labs
<p>16th Toronto (CA) In 2016: TRBoT created the Smart Cities Working Group In 2017, the Canada Government launched the Smart City Challenge In 2018: Toronto Smart City Challenge Submission Connected Community Smart City Project (?)</p> <p>National & Local</p>	<p>D: Is a city that improves access to information and data, to help it become an economically, socially, and environmentally connected community. (City of Toronto, 2017).</p> <p>T: Connected Community</p> <p>V: not found</p>	<p>Fields: Economy, People, Environment Goal: Efficiency, Sustainability, QoL TA: Connection, Information Other: City, Data Digital platforms: ConnectTO program The City of Toronto website, the Trip Planner app, The MyWaterToronto Portal, The 311 Toronto App, Cowlines App, Cycle Now app, Garbage Day App, Transit App, Toronto Open Data https://open.toronto.ca/ Open Data Master Plan 2018-2022</p>	<p>Future Living Lab Google Quayside Sidewalk Toronto University of Toronto Living Lab</p>
<p>17th Paris (FR) Since 2010: Urban Lab Since 2015: Paris Smart and Sustainable Plan – Looking ahead to 2020&Beyond</p>	<p>D: A City that develops common services, applications, and goods that meet the basic needs of its inhabitants and their quest for well-being. It is an innovative approach based on a medium and long-term global and systemic vision of the city to improve the quality of life by leveraging three</p>	<p>Fields: Economy, People, Environment, Governance, Living Goal: Sustainability, QoL TA: Connection, Technology</p>	<p>Agrilink 3E-Paris Periurban Lab La Fabrique du Futur</p>



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



<p>Local and Private Initiative</p>	<p>major catalysts to transform urban life: deepening social ties and creating value, rethinking urban infrastructures, and capitalizing on technological revolutions, especially digital technologies. (Mairie de Paris, 2015 p. 5)</p> <p>T: Connected, Open, Sustainable City</p> <p>V: Our vision of Smart and Sustainable Paris is based on three major pillars: the open city., the connected city and the sustainable city. Each one of these brings value and resources to the comprehensive approach that will help develop the new trajectory of this 21st-century metropolis. Data use and governance will also influence these three dimensions for the city of tomorrow. (Mairie de Paris, 2015 p. 25)</p>	<p>Other: Open City, Applications, Data</p> <p>Digital Platforms to Engage Citizens:</p> <p>Budget Participatif</p> <p>Data.gouv.fr</p> <p>Réinventer Paris</p> <p>Open Data Paris https://opendata.paris.fr/</p>	<p>Liberté Living Lab</p> <p>Le Rosa Lab – Fabrique de La Ville Creative et Durable</p> <p>Universcience Living Lab</p>
<p>18th Madrid (ES)</p> <p>Since 2015: Madrid Intelligence Project (MiNT)</p> <p>Since 2022: Madrid Digital Capital - Transformation Strategy for the</p>	<p>D: Holistic vision of a city that applies ICTs to improve the quality of life and accessibility of its inhabitants and ensures sustainable economic, social and environmental development in permanent improvement. (MINETAD, 2015 p. 3)</p> <p>In partnership with IBM, in 2015, Madrid Intelligence Project (MiNT) was implemented to improve urban services and the quality of citizens'</p>	<p>Fields: Economy, People, Environment, Governance, Living, People</p> <p>Goal: Efficiency, Sustainability, QoL</p> <p>TA: ICTs, Technology</p> <p>Other: Open, Inclusive, Digital Transformation</p>	<p>Madrid International Lab</p> <p>The Internet of Things Laboratory of the City of Madrid (IoTMADLab)</p> <p>Madrid Urban Lab</p>



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



<p>City of Madrid</p> <p>Private, Local and UE</p>	<p>services, to make the city more sustainable (IBM, 2014).</p> <p>T: An Open, Inclusive, Digital, and Sustainable City</p> <p>V: a strategy to continue being a city benchmark in the digital field, designed for all people and companies that are part of Madrid, for its neighborhoods and districts, and for the City Council itself, as a key driver of the digital transformation of the capital (Ayuntamiento de Madrid, 2022 p. 4-7)</p>	<p>Digital Platforms to Engage Citizens:</p> <p>Decide Madrid</p> <p>Getafe Participa</p> <p>SmartAppCity</p> <p>Open Data Madrid Portal</p> <p>datos.madrid.es/portal/site/egob/</p>	<p>Observatorio de La Ciudad</p> <p>The Madrid Smart Lab</p>
<p>19th Busan (SK)</p> <p>In 2017: won IBM SCC</p> <p>Since 2018: Busan Eco Delta City: A National Smart City Project</p> <p>Local, Private, National</p>	<p>Not found a local definition, but national.</p> <p>D1: A platform to improve the quality of life for citizens, enhance the sustainability of cities, and foster new industries by utilizing innovative technologies of the 4th Industrial Revolution era. (South Korea Ministry of Land, Infrastructure and Transport, 2019 p. 5)</p> <p>T: Digital, Augmented, and Robotic City (Busan Metropolitan City, n.d.)</p> <p>Definition of the project: Three (Digital, Augmented, and Robotic City) future city operation platforms, where all citizens will benefit from balanced opportunities and inclusive growth as a mecca of the future industry and improve the quality of</p>	<p>Fields: Economy, Environment, Governance, Living, People</p> <p>Goal: Efficiency, Sustainability, QoL</p> <p>TA: Technology</p> <p>Other: Platform, Innovation, Digital, Augmented, Robot, 4th Industrial Revolution, International Leadership</p> <p>Digital Platforms to Engage Citizens:</p> <p>Busan Eco Delta Smart City Portal</p> <p>www.busan.go.kr/eng/</p>	<p>Busan Innovation Fab Lab</p> <p>Busan EDC Village</p> <p>Busan's IoT Living Lab</p> <p>Busan Network of Living Lab (BNoLL)</p>



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



	<p>life of citizens, including education, culture, safety, and environment (South Korea Ministry of Land, Infrastructure, and Transport, 2021).</p> <p>V: a place of innovative and international leadership for future living where nature, people and technology come together.</p>	<p>ecodelta01</p> <p>Busan Open Data Portal data.busan.go.kr/</p> <p>Busan Metropolitan City Big Data Platform bigdata.busan.go.kr/</p> <p>City-Bot</p>	
<p>20th Dublin (IE)</p> <p>Since 2012:</p> <p>Intel Labs</p> <p>Europe, Dublin</p> <p>City Council and Trinity College start Sustainable Connected Cities</p> <p>In 2014: Won IBM Smart City Challenge</p> <p>Since 2016:</p> <p>Smart Dublin Program</p> <p>Local and Private Initiatives</p>	<p>D: A real-time, connected, and data-driven city. (Smart Dublin, n.d. p. 3)</p> <p>T: Open, Connected, and Engaged City.</p> <p>Open to promote economic development through open data, open government, and open innovation.</p> <p>Connected to drive efficiencies through connected networks, connected infrastructure, and connected city region. Engaged to engage with entrepreneurs, citizens, researchers, and business to solve city region challenges.</p> <p>(Dublin City Council, n.d. p. 2)</p> <p>V: To be a world leading open, connected, and engaged Smart City Region to live in, work in and visit. (Smart Dublin, n.d. p. 6)</p>	<p>Fields: Economy, Governance, Living, People</p> <p>Goal: Efficiency, QoL</p> <p>TA: Connection, Data, Innovation</p> <p>Other: Real-time, Data Driven, Open, Engage</p> <p>Digital Platforms to Engage Citizens:</p> <p>Smart Dublin website</p> <p>Dublin Dashboard</p> <p>Smart Dublin Public Trello Board</p> <p>See.Sense</p> <p>Smart Dublin Challenges</p> <p>Open Data Dublinlinked data.smartdublin.ie/</p>	<p>I-CHANGE</p> <p>Dublin Living Lab University College Dublin (UCD)</p> <p>iSCAPE Dublin Living Lab</p> <p>Dublin Coastal City Living Lab</p>



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



Rank and Initiatives	Smart City Definition (D), Type (T), and Vision(V)	Terms and Digital Platforms	Fab, Living or Urban Labs
<p>21st) Melbourne (AU)</p> <p>In 2015: Won IBM Smart City Challenge</p> <p>In 2021: Economic Development Strategy 2031</p> <p>Community Engagement Policy Melbourne neighborhood planning framework</p> <p>Local & Private</p>	<p>D: Not found.</p> <p>T: City as a System (ARUP, 2010 p. 12). A City Lab (City of Melbourne, n.d.)</p> <p>V: To enhance the aspects of our city that make us uniquely Melbourne, and intelligently prepare for the changing needs of the community, the environment, and the economy. (City of Melbourne, n.d.)</p> <p>T2: Digitally Connected City, adapting to connectivity as a knowledge-enabled Smart City</p> <p>V2: By 2031 the City of Melbourne will be a global leader in creating jobs and enterprises that focus on the needs of the future.</p> <p>City of Melbourne (2021 p. 6)</p>	<p>Fields: Economy, Environment, People</p> <p>Goal: Efficiency, Sustainability, QoL</p> <p>TA: Technology, Connected</p> <p>Other: City, Innovation, Open Data, System</p> <p>Digital platforms: Participedia, CityLab</p> <p>FreeWifi, Melbourne Conversations, Neighborhood Portals</p> <p>http://bit.ly/3YgrXoz</p> <p>Melbourne Open Data data.melbourne.vic.gov.au/pages/home/</p>	<p>Future Self and Design Living Lab</p> <p>Infosys Melbourne Living Lab</p> <p>RMIT Healthy Liveable Cities Lab</p> <p>Swinburne Living Lab</p>
<p>22nd) Los Angeles (USA)</p> <p>Since 2020 SmartLA 2028 strategy</p> <p>Local and Private Initiative</p>	<p>D: Is one that efficiently and ethically uses secure technologies, data, & resources to improve quality of life and sustainability for residents, businesses, and visitors.</p> <p>T: Digital, and Connected City</p> <p>V: The City of Los Angeles envisions a high digital and connected city in 2028.</p> <p>City of Los Angeles (2020 p. 3; p. 5)</p>	<p>Fields: Economy, Environment, Governance, Living, People</p> <p>Goal: Efficiency, Sustainability, QoL</p> <p>TA: Connection, Technology, Data,</p> <p>Other: Stakeholders, Resources</p> <p>Digital platforms: MyLA311, LA Metro Transit app, Vision Zero LA, Open Data Portal,</p>	<p>Urban Movement Lab</p> <p>UCLA CityLAB</p>



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



		Cowlines App, LA Open Data - https://data.lacity.org/	
<p>23rd) San Francisco (USA)</p> <p>Since 2016:</p> <p>San Francisco Smart City Challenge</p> <p>National and Local Project</p>	<p>D: a framework for using data, digital technology, civic and policy innovation to enhance the quality of life for all residents, making cities more effective, efficient, equitable and responsive (City and County of San Francisco, n.d., p. 4)</p> <p>T: Connected and Shared City.</p> <p>V: to make more shared choices available so that people of all backgrounds can easily get around without needing to own a car. By promoting shared options, we will ensure that more people can access affordable, safe, clean, and reliable transportation than ever before. (City and Council of San Francisco, 2016)</p>	<p>Fields: Economy, Environment, Living, Mobility, People</p> <p>Goal: Efficiency, Sustainability, QoL</p> <p>TA: Connected, Technology</p> <p>Other: Framework, Data, Digital, Culture of Sharing, EV, Autonomous Vehicles</p> <p>Digital Platforms to Engage Citizens:</p> <p>San Francisco Smart City website</p> <p>SF311 app, SFWifi, SFPark, Cowlines App, Nextdoor app, OpenDataSF</p> <p>datasf.org/opendata/</p>	<p>Create + Build</p> <p>San Francisco Smart City Institute</p> <p>The Urban Prototyping Lab</p>
<p>24th) HK (China)</p> <p>Since 2018:</p> <p>HK Smart City Blueprint 1.0</p> <p>Since 2021:</p> <p>HK Smart City Blueprint 2.0</p> <p>Local</p>	<p>D: People Centric. It should be built upon the needs of the people, and the benefits should be seen and felt by residents and visitors (HK Innovation and Technology Bureau, 2017 p.2)</p> <p>T: World-class smart city.</p> <p>V: Embrace innovation and technology to build a world-famed Smart HK characterized by strong economy and high quality of life. (HK Innovation and Technology Bureau, 2017 p.3; 2020 p. 3)</p>	<p>Fields: Economy, Living, People</p> <p>Goal: Efficiency, QoL</p> <p>TA: Technology</p> <p>Other: Innovation</p> <p>Digital Platforms to Engage Citizens:</p> <p>Smart City Dashboard, iMSmart App, Geospatial Lab, MyObservatory, HKSmart City website.</p> <p>Open Data HK</p> <p>https://data.gov.hk/en/</p>	<p>CMASS iSPACE</p> <p>HKUST</p> <p>Sustainable Smart Campus, Geospatial Lab</p>



AMAZON FEDERAL UNIVERSITY – FACULTY OF TECHNOLOGY



Rank and Initiatives	Smart City Definition (D), Type (T), and Vision(V)	Terms and Digital Platforms	Fab, Living or Urban Labs
<p>25th Montreal (CA)</p> <p>Since 2014: Montreal Smart and Digital City Strategy</p> <p>Local and Private</p>	<p>The Strategy mentioned two definitions according to Ville de Montréal (2015 p. 10) and Open North (2018 p. 40)</p> <p>D1: Effective integration of physical, digital, and human systems in the built environment to deliver a sustainable, prosperous, and inclusive future for its citizens (BSI, 2014).</p> <p>D2: Systems of people interacting with and using flows of energy, materials, services, and financing to catalyze sustainable economic development, resilience, and high quality of life; these flows and interactions become smart through making strategic use of information and communication (European Innovation Partnership on Smart Cities and Communities, 2013).</p> <p>T: Smart and Digital City</p> <p>V: By 2017, Montreal will be the world’s leading smart city.</p>	<p>Fields: Economy, Environment, Governance, Living, People</p> <p>Goal: Efficiency, Sustainability, and QoL</p> <p>TA: ICT, Information</p> <p>Other: Digital, System, Integration, Communication, resilience.</p> <p>Digital platforms:</p> <p>Montreal Smart City website, Je fais Mtl</p> <p>Civic Tech Montréal, MTL Connect. Montreal BIXI app,</p> <p>Montreal Open Data donnees.montreal.ca/</p>	<p>Living Lab de Montréal</p> <p>Cité-ID Liv-ing Lab</p> <p>Concordia University’s Creative engAGE Living Lab (ELL)</p> <p>Rehabilitation Living Lab in the mall (RehabMaLL)</p>