Accelerating Innovation for Sustainable Cities and Infrastructure

SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Since decades we are facing continuing urbanization on a global scale, which will lead to two-thirds of the global population living in cities by 2050. This development causes overcrowded cities, inadequate housing for many, especially in developing countries, overburdened infrastructure and services (roads, waste collection, sanitation systems) and increased air pollution.

The global issues caused by urbanization are worsened by COVID-19, and have an even larger impact in poor, densely populated areas. In crowded cities, it has been hard for individuals and communities to live by the recommended measures to mitigate the effects of COVID-19, like social distancing and self-isolation.

This calls for governments to accelerate innovative city and infrastructure planning to create resilient and healthy cities. The rising issues are in many areas too comprehensive for governments to deal with on their own. So we need the corporate and academic world to be part of the solution as well. The pandemic surfaced in the middle of a digital revolution. The growing cities are not just melting pots of culture and connected communities, they are taking a role at the forefront of innovation, relying on technology to combat many issues.[1] Although transforming smart cities comes at a huge cost, many cities are using the opportunity to increase their technology investment in smart city infrastructure. On the one hand they are reducing the spread of the virus, while on the other hand rejuvenating economic growth in their cities.

Some examples. Singapore uses new tech tools to respond to the pandemic with data analytics, artificial intelligence and sensors to modernize government initiatives. The UAE government ensures that guidelines regarding social distancing and lockdown are obeyed by implementing an AI-based system that helps local police wearing smart helmets equipped with a thermal camera to detect those infected with COVID-19 from a safe distance. The system also helped identify people who were on the roads without the necessary authorization. And in India cities have set up operational integrated command and control centers, serving as quasi-war rooms to make emergency decisions, manage contact tracing activities and monitor lock down efficiency. Dashboards are used to identify quarantine violations, deliver essential commodities and conduct emergency alert response. These measures are raising concerns about privacy and fundamental human rights where digital technologies such as contact tracing and surveillance tools are used. Yet, when data is used securely,

these technologies can deliver major benefits also post-pandemic. Collaboration by organizations to protect data is the way forward. And citizen engagement should also be part of it.

And here are some other examples of developments we have seen during the pandemic that could impact how we organize our cities. Education, work and entertainment nowadays come at the click of a mouse. This could create an opportunity for city governments to accelerate infrastructure improvements and for urban developers to fundamentally change how they build the next generation of cities. Urban planning for the future can include sustainability measures such as green roof gardens, different use of transportation vehicles, more use of AI in decision making.[2] The pandemic showed how (public) space can be transformed for other uses, such as outdoor retail expansions, health corridors and parking spaces converted into outdoor patios. Telehealth services also rapidly improved. And there are many initiatives around the world to train for jobs resilient to market swings, incentivise switching to electricity, support industries that produce lower-carbon goods.[3]

Cities are cooperating with the private sector to apply the use of technology across public (digital) infrastructures to plan for a climate smart, resilient growth.[4]

Your Challenge

What can your company do to increase the synergies between SDG 9 and 11 and solve some of the most pressing problems of increasing urbanization? From the targets in SDG 9, identify areas that could simultaneously contribute to the targets in SDG 11. Consider the many challenges growing cities face and identify an impactful pathway to make cities more inclusive, safe, resilient and sustainable – in a certain region, or in multiple settings. Work on a solution (product, service or other) that your company could deliver, build the business case and prove that it will work, with impact!

Sources:
1. GCN, how COVID accelerated smart city development by Siva Sooryaa Muruga Thambiran
2. Future Cities Canada: Resilient Cities, Post Covid-19, Accelerating Innovation
3. National Observer: COVID-19 crisis offers Canada route to low carbon economy
4. Eria.org: Three Narratives for Smart Livable Cities in the Post COVID-19 Era

SDG 9 and 11 at a Glance…

Be sure to explore these goals further!
Further resources to get started: SDG 9 | SDG 11

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

BUILD RESILIENT INFRASTRUCTURE, PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALIZATION AND FOSTER INNOVATION

BEFORE COVID-19

MANUFACTURING GROWTH WAS DECLINING

DUE TO TARIFFS AND TRADE TENSIONS

FINANCING FOR SMALL-SCALE INDUSTRIES IS NEEDED FOR THEIR SURVIVAL THROUGH THE CRISIS

ONLY 35% HAVE ACCESS TO CREDIT IN DEVELOPING COUNTRIES (2006–2018)

COVID-19 IMPLICATIONS

THE AVIATION INDUSTRY HAS SUFFERED THE STEEPEST DECLINE IN HISTORY

AIR PASSENGER NUMBERS **FELL BY 51%** FROM JANUARY TO MAY 2020 (COMPARED TO THE SAME PERIOD IN 2019)

INVESTMENT IN R&D IS GROWING BUT NEEDS TO ACCELERATE

2010   2017

$1.4 TRILLION (2010)
$2.2 TRILLION (2017)

FEWER THAN 1 IN 5 PEOPLE USE THE INTERNET IN LDCs (2019)

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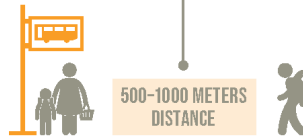
11 SUSTAINABLE CITIES AND COMMUNITIES

MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE

BEFORE COVID-19

SHARE OF URBAN POPULATION LIVING IN SLUMS ROSE TO 24% IN 2018

ONLY HALF
THE WORLD'S URBAN POPULATION HAS CONVENIENT ACCESS TO PUBLIC TRANSPORT (2019)

500-1000 METERS DISTANCE

COVID-19 IMPLICATIONS

OVER 90%
OF COVID-19 CASES ARE IN URBAN AREAS

AIR POLLUTION
CAUSED 4.2 MILLION PREMATURE DEATHS IN 2016

47% OF POPULATION LIVE WITHIN 400 METRES WALKING DISTANCE TO OPEN PUBLIC SPACES

400M