FUTURE OF CITIES

INCLUSIVE INNOVATION

WHY

SOLUTIONS DON'T FIT THE SCALE OF PROBLEMS
MOST HUMANS LIVE IN CITIES
SHIFTING LOCUS OF POWER
MORE DEMANDS // LESS RESOURCES
LOCALIZING SDGS

GETTING THE FUTURE WRONG

The speed and scale of the challenges facing our cities is faster and bigger than we predicted, and outpacing our ability to respond

GETTING THE FUTURE WRONG

Recent studies suggests 60-84% population **currently** resides in urban centers - opposed to UN estimates of 50% today.

Cities today generate more than 80% of global GDP.

They consume close to 2/3 of the world's energy.

Account for more than 70% of global greenhouse gas emissions.

Almost half a billion urban residents live in coastal areas, increasing their vulnerability to storm surges and sea level rise.

CHALLENGES URBAN CENTERS FACE

TECHNOLOGICAL ADVANCES

POPULATION FLOW

SHIFTING LOCUS OF ACCESS TO OPPORTUNITY

ENVIRONMENTAL DISASTER

NEW TYPES OF ACTORS

NETWORK/ MONOPOLY ECONOMICS

SHIFTING ROLE OF NATION-STATE

SHIFTING NATURE OF INFRASTRUCTURE

ENTRENCHED DISCRIMINATION

CHANGING FACE OF CONFLICT & VIOLENCE& SOCIAL COHESION

BEYOND THE SILVER BULLET

Complex challenges require complex solutions.

‣ Current approaches do not match the scale of the challenge: single-point, siloed approaches do not work.

‣ The interconnected nature of urban development issues requires going beyond sector-specific or technical solutions

‣ Cities are sandboxes for experimentation where multi-sector stakeholders can test new technology, lightweight prototypes, regulatory hacks, and - importantly - new ways of *being and acting*

Cities are on the forefront of how this pans out.

REINFORCING EXISTING INEQUALITIES

Data is Political

Who decides what gets measured Reliability of data Manipulation of data to reflect "way it should be" v. "way it is"

Smart is exclusive

Digital divide Ageing pop+ access to technology // middle-upper income cities with infrastructure to support implementation

Green is incomplete

Localized in urban centers Focuses on infrastructure and policies Interventions are time consuming and costly

INCLUSIVE INNOVATION

OPEN **+** SMART **+** GREEN

Centers marginalized voices as experts

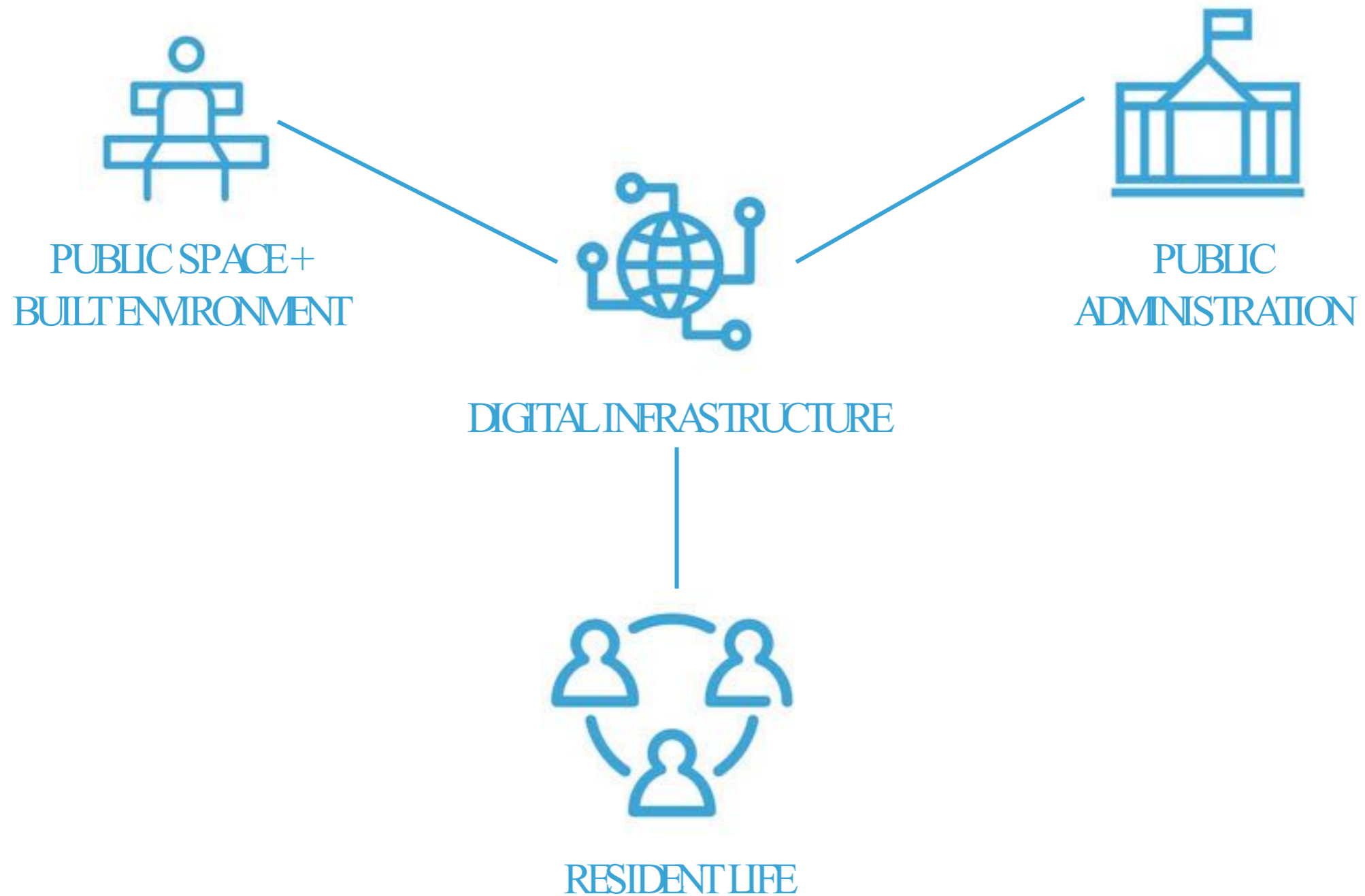Ensures access to opportunity

Fairly distributes prosperity

INCLUSIVE

Solutions designed by/for/with "beneficiaries"

Reshapes application of Open, Smart, Green approaches
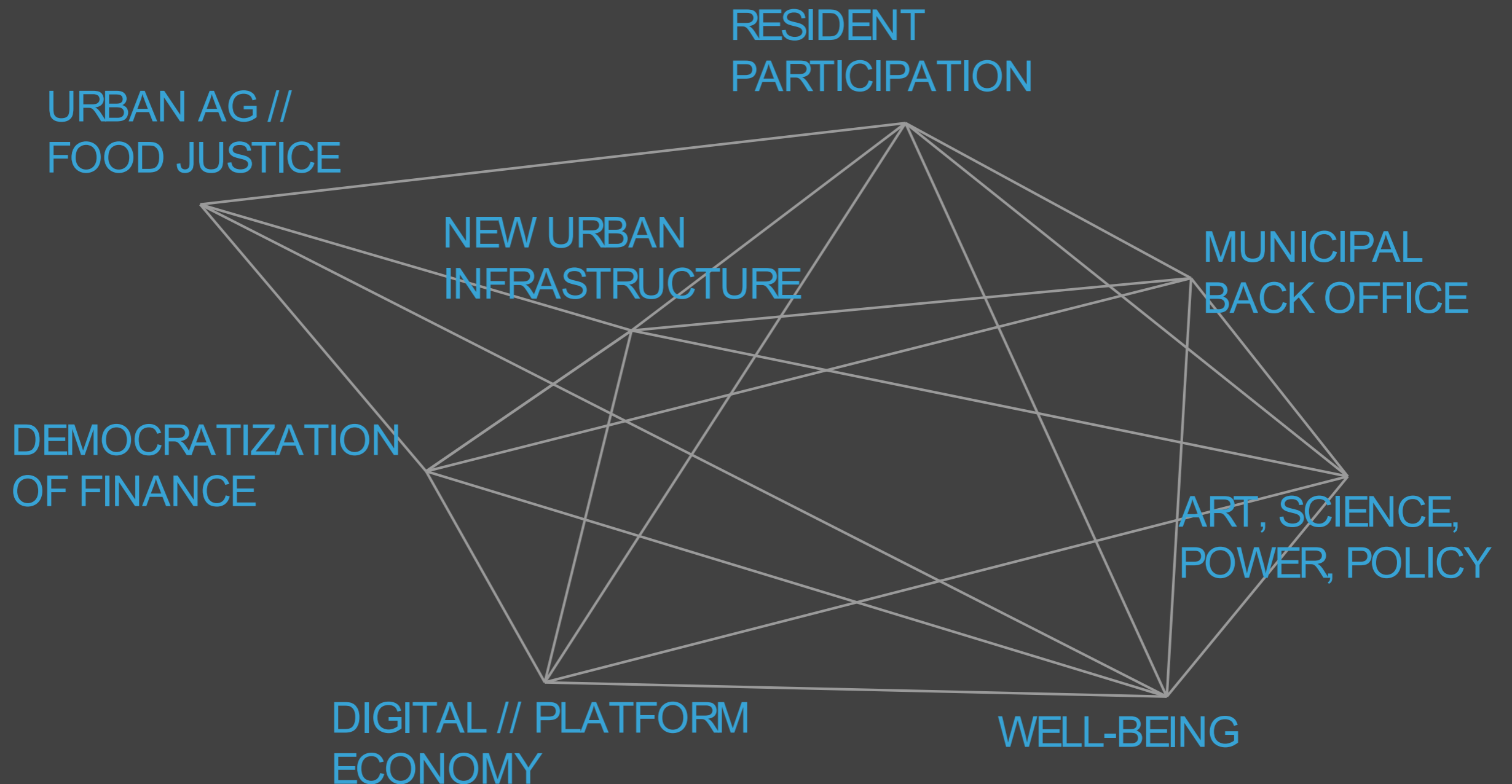
DEFINING DOMAINS OF PUBLIC LIFE

PUBLIC SPACE +
BUILT ENVIRONMENT

PUBLIC
ADMINISTRATION

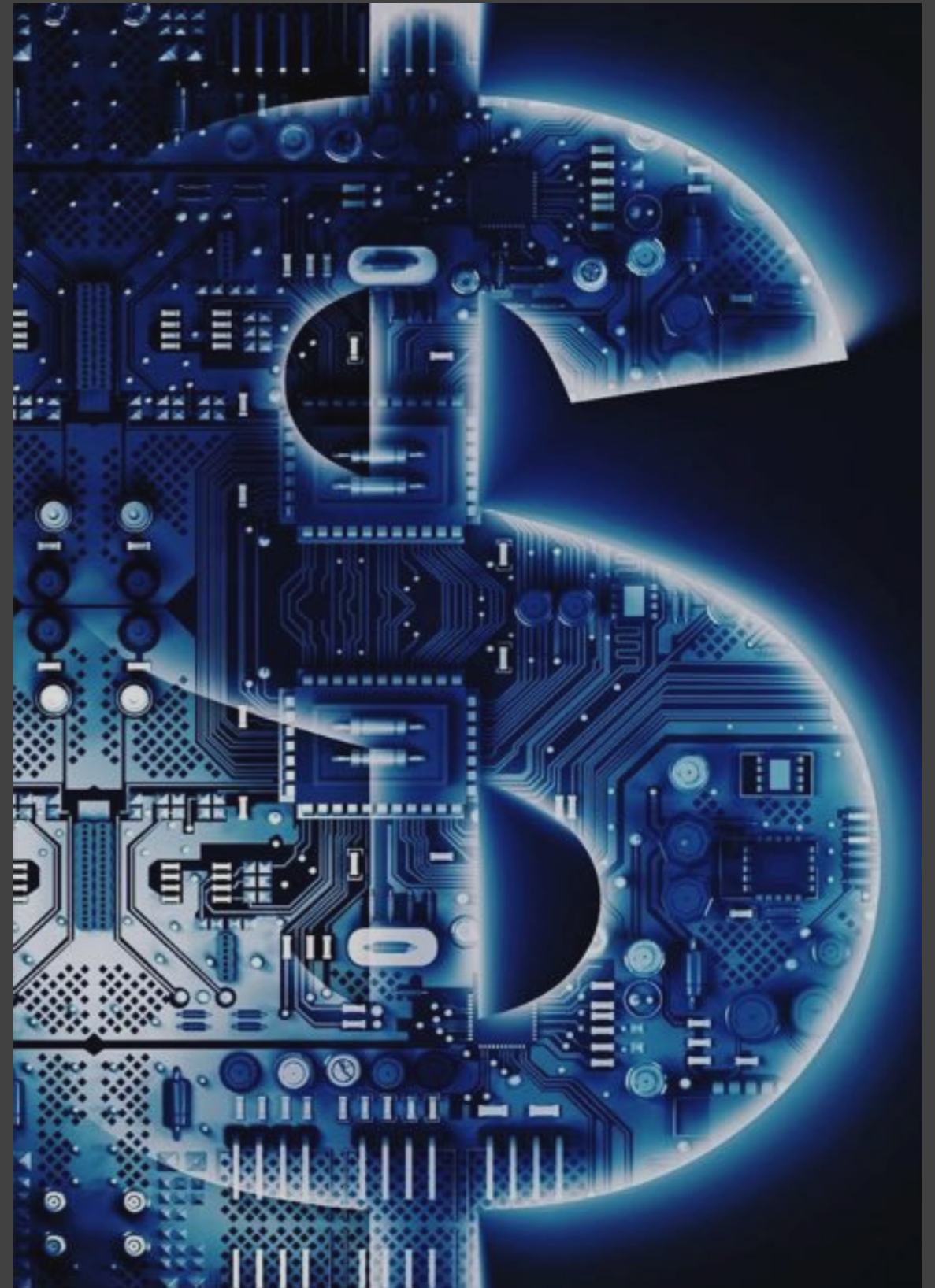DIGITAL INFRASTRUCTURE

RESIDENT LIFE

WHERE

ZONES OF
EXPERIMENTATION

DEMOCRATIZATION OF FINANCE

Exploring the potential of online platforms, mobile money, crypto currencies, behavioral insights, blockchain and new forms of finances, to strengthen the resource base for cities and directly engage residents in the financial decision-making process.

SOCIAL IMPACT BONDS

Finance public good.

Neighborly gives you access to the multi-trillion dollar municipal bond market that funds vital public projects like schools, libraries and parks.

Get started

[Neighborly](#) is a San Francisco startup democratizing social finance.

‣ Governments list large public projects that require public financing.

‣ Investors - from individuals to market advisors - create personal profiles that list out how much they want to invest and the kind of return and risk they want to assume.

‣ Users get notifications about upcoming sales and issuances.

Neighborly also uses machine learning techniques to evaluate the risk of municipal bonds in addition to the analysts and rating agencies an investor would normally use. On the city side, government officials can store and manage all their documentation, cutting out legal and advisor work.

BLOCKCHAIN FOR REMITTANCES

Град Ниш
City of Niš

To search type and hit enter

НАЈНОВИЈЕ ОБЈАВЕ

CITY OF NIŠ / MAYOR'S OFFICE / NEWS
Blockchain links Serbian diaspora and their families back home

CITY OF NIŠ / **MAYOR'S OFFICE** / NEWS

Blockchain links Serbian diaspora and their families back home

BY **ZP** · 20. JULY 2018.

Nis City Mayor Darko Bulatovic and Ms. Steliana Nedera, acting Resident Representative of the UNDP Office in Serbia signed a Memorandum of Understanding between the United Nations Development Program (UNDP) and the City of Nis on the implementation of the pilot project Blockchain-based diaspora remittances in the City of Nis. The National bank of Serbia fully endorsed the test (pilot project) to be conducted by

UNDP Serbia, UNDP AltFin Lab, and AidTech partnered with the City of Nis to pilot blockchain-based remittance program that aims to reduce the transaction cost of remittance payments by **X%** and make transfers and purchases more transparent.
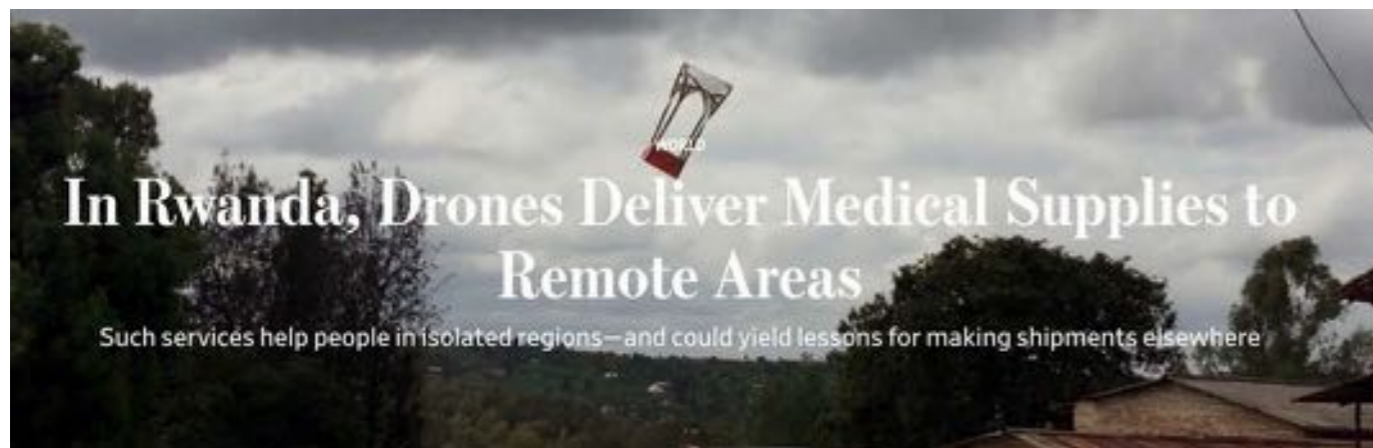
This gives peace of mind to those living abroad and supporting families at home by ensuring bills get paid, and food is purchased.

MUNICIPAL BACK OFFICE FUNCTIONS

Blockchain and open procurement meet AI and regulatory sandboxes to create spaces for informed experimentation and innovations in open and responsive governance.

REGULATORY SANDBOXES // FINTECH, IOT, DRONES

In Rwanda, Drones Deliver Medical Supplies to Remote Areas

Such services help people in isolated regions—and could yield lessons for making shipments elsewhere

Rwanda Utilities Regulatory Authority introduced the Department of Innovation and Cybersecurity with the express mission of creating a regulatory sandbox to safely experiment with IOT, FinTech, E-governance, and 4th Industrial technology to tackle endemic problems around health, safety, and security. In partnership with Zipline, a technology company based in San Francisco, they are testing drone delivery of blood to remote hospitals; a journey that once took 3 hours overland, now takes 15 minutes by air and is saving lives.

ANONYMOUS, BIOMETRIC IDENTIFICATION

How biometrics is giving identities to 'invisible citizens'

Simple user interface guides collection

Can be seamlessly integrated into any existing workflow and application

Frontline worker places a beneficiary's finger

Rugged, waterproof, mobile fingerprint scanner built for the toughest conditions on the frontlines

System runs matching algorithm

Offline or online. Rapid matching that reduces errors and improves accuracy, compliance and quality

Unique ID links to records and next steps in care

Fingerprint serves as a globally unique and secure ID that cannot be forgotten or lost

Simprints is using biometric identities in more than 9 countries to help organizations deliver food, immunizations, health records, microfinance to those without formal identification. It is allowing aid organizations to leap frog from paper-based systems direct to mobile solutions while reducing fraud, increasing transparency, and reducing inefficiencies in the field.

WELL-BEING

Blending real time data, built environment, science, and technology to promote better and more efficient public health.

PUBLIC HEALTH AND PUBLIC SPACE

Mapping the Urban Biome

We aim to build a molecular profile of cities around the globe to improve their design, functionality, and impact on health. Public transportation systems represent the densest interaction space for millions of people each day, and yet, there is little known about the dynamics of the microbiome and metagenomics profile on these surfaces, and most importantly, how these dynamics and our interactions with these surfaces can impact an individual's health, as well as the health of a city.

MetaSub partners with public health investigators to sequence and map DNA and other microorganisms from public spaces to identify new gene sequences, anti-microbial resistance markers, develop potential treatments, and predict outbreaks in cities around the world.

ENFORCING ENVIRONMENTAL REGULATIONS USING BLOCKCHAIN

MEASURE URBAN POLLUTION AND TAKE ACTIONS IN REAL-TIME

Decibel.LIVE helps cities monitor environmental pollution in real-time using a connected network of sensors, providing undeniable proof of data using the Ethereum blockchain

Different from competitors, Decibel.LIVE uses smart contracts on Ethereum to enforce regulations

Decibel: it is an example of algorithmic regulation where the interplay of technology seeks to level the playing field between the private interests and citizens. specifically they use IoT to measure air and noise pollution around construction sites, and when these exceed legally mandated limits, the smart contract automatically transfers a penalty fee from the company to apartment owners in the vicinity of the site who are paying 'the cost' of the construction works.

RESIDENT PARTICIPATION

Leveraging resident expertise, low-fi interventions, and horizon technology in urban planning and policy making to design, build, and test new approaches to public space and public life.

USING AR AND VR TO ENGAGE RESIDENTS IN CITY PLANNING INITIATIVES

Cleaner, Smarter Cities

Creating Mobility Markets in Rionegro and Medellín, Colombia

As a part of the Bloomberg Aspen Initiative on Cities and Autonomous Vehicles, Rionegro and Medellin Colombia are exploring the feasibility of driverless tourist shuttles as part of a proposed "Smart Path" cultural heritage trail. They are employing a civic planning model involving virtual reality simulations to inform the public engagement processes and help residents envision the city of the future.

POLICIES AND PROJECTS BY, FOR, WITH RESIDENTS

Decide Madrid is online platform for public policies and project designed by, with, and for residents. It leverages resident participation to inform, design, and fund public initiatives. It was proposed to the City as the brainchild of non-profit, Ahora Madrid, dedicated to transparency in government and a software engineer. The free customizable platform, Consul, has been adapted for use in 18 countries and 60 municipal governments and engaged more than 70 million people globally.

ART, SCIENCE, POWER, AND POLICY

Backcasting from emerging futures, and across arts and science, back to the policy space.

BUILDING THE FUTURE UPON THE PAST

#NEWPALMYRA LAUNCHES THE #PALMYRAVERSE BUILDING CAMPAIGN WITH LIKECOIN ETHEREUM TOKENS PAID TO ARTISTS

In response to the wholesale destruction of World Heritage Sites in the past two decades through war and natural disasters, the application of 3D modeling has given rise to future forward "conservationists."

NewPalmyra – inspired by a Palestinian-Syrian software developer who had played a key role in pioneering open access data in Syria – creates 3D models based on crowd-sourcing and open data. They recently adopted LikeCoins Ethereum tokens to pay artists for their contribution to the archive.

MAKING THE INVISIBLE, VISIBLE

Invisible Dust
@Invisible_Dust

Follow

Air pollution is invisible. Up to 9,500 people die prematurely in London each year #HumanSensorLDN makes the invisible, visible #UnderHerEye

Invisible Dust works with leading artists and scientists to produce new works of contemporary art that explore our environment and climate change.

This interdisciplinary work brings the unseen negative impacts of the industrial revolution to the fore and offers a visual narrative of our collective responsibility.

NEW URBAN INFRASTRUCTURE

Formalizing informal structures and systems in cities to do more with less and unlock investment in multi-use infrastructure.

PROVIDING ENERGY THROUGH BLOCKCHAIN AND COOPERATIVE OWNERSHIP

Cryptocurrency may light up renewable energy in Moldova

UNDP + Sun Exchange – a marketplace that finances solar power with cryptocurrency – to help one of Moldova's largest universities go solar.

The establishment is expected to meet most of its energy needs from solar power overnight and make considerable savings on its bills, thanks to rooftop installations expected to reach 15,000 square meters in surface area.

People who purchase solar cells through the South Africa-based Sun Exchange can lease them out to hospitals, businesses, schools and private residences. The exchange uses SolarCoin, a cryptocurrency introduced by blockchain start-up ElectriCChain.

NEW INFRASTRUCTURE SOLVING OLD CHALLENGES

Plastic roads: India's radical plan to bury its garbage beneath the streets

16,000km of road have been paved in the state of Tamil Nadu using mixed plastic waste. 13,000 km more in the pipeline. Of this, 8,600km have already been completed.

Using the same process to merge waste plastic and stone with materials like limestone, ceramic waste and granite, Dr Vasudevan created another eco-friendly building material that consumes up to 40% more waste plastic than that used in the road laying process. This material called "plastone" is lasting, durable and cheap.

WHY UNDP

GLOBAL NETWORK OF INNOVATION

BEYOND EXPERIMENTATION

PHASE 1
System mapping to frame challenges & opportunities

PHASE 2
Design process to refine specific ideas

PHASE 3
Accelerator programme to develop prototypes

PHASE 4
Implement Prototypes

PHASE 5
Scale solutions that work

OPEN INNOVATION
residents participation at every step of the design process

OUR APPROACH - CITY EXPERIMENTATION FUND

If the assumption holds true - emerging city-based practices at the intersection of domains, sectors, technologies, and approaches will result in more tangible, equitable outcomes that advance implementation of SDG's - then the engagement modality aims to:

- **Identify positive deviance initiatives** or local energy "from the fringes"
- **Invest** experimentation at the intersections.
- **Provide tools**, support structures, and expertise for iteration and implementation
- **Connect** initiatives to international network and opportunities
- **Scale** to amplify impact

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