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UNU-EGOV

Operating Unit on Policy-Driven Electronic Governance

U4SSC Initiatives
Blockchain for Cities (B4C)

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U4SSC

AGENDA

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1 Who we are

2 What we do

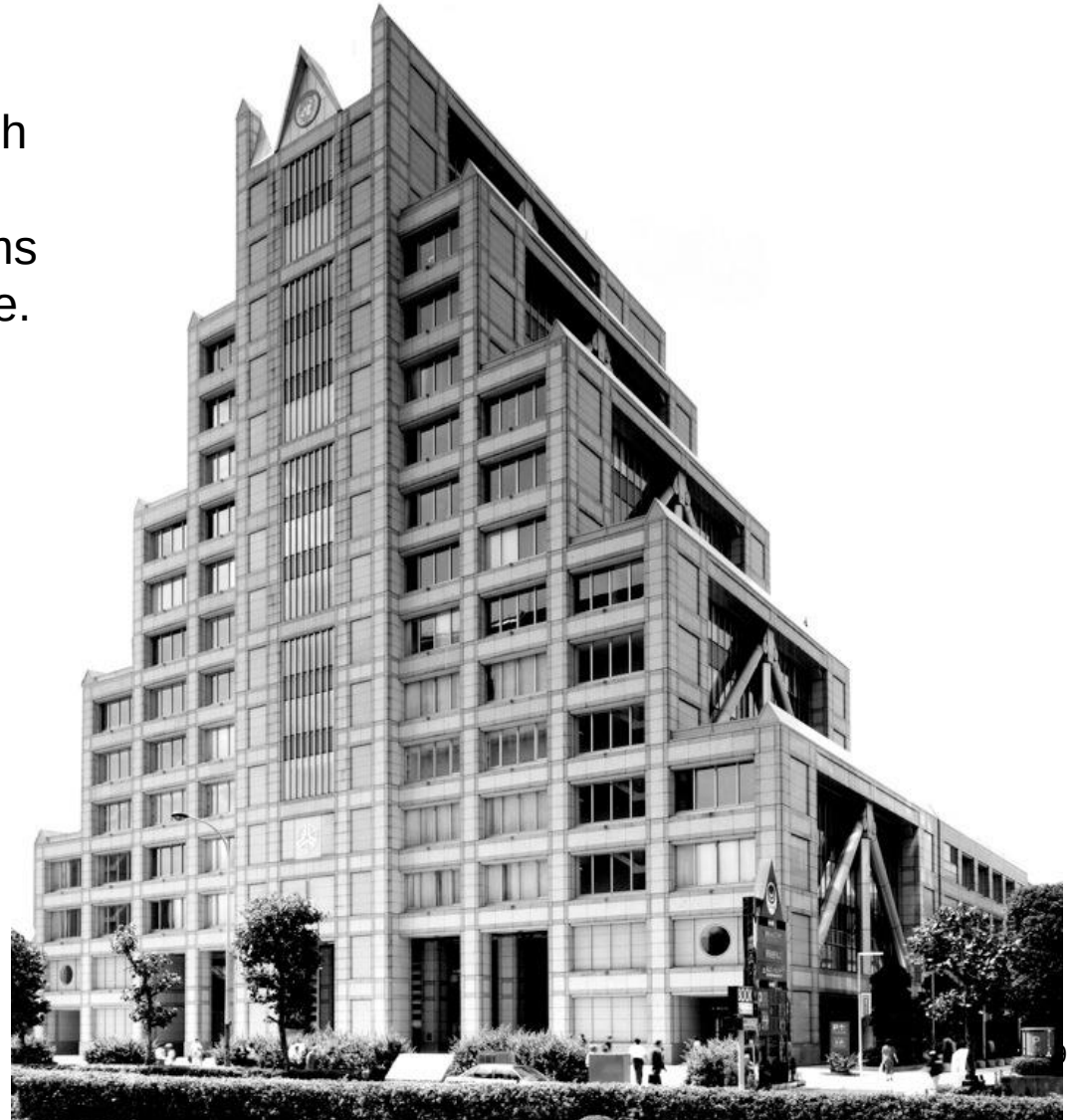
3 U4SSC: Blockchain for cities (B4C)

UNU's Mission

To contribute, through collaborative research and education, dissemination and advisory services, to resolve pressing global problems of human survival, development and welfare.

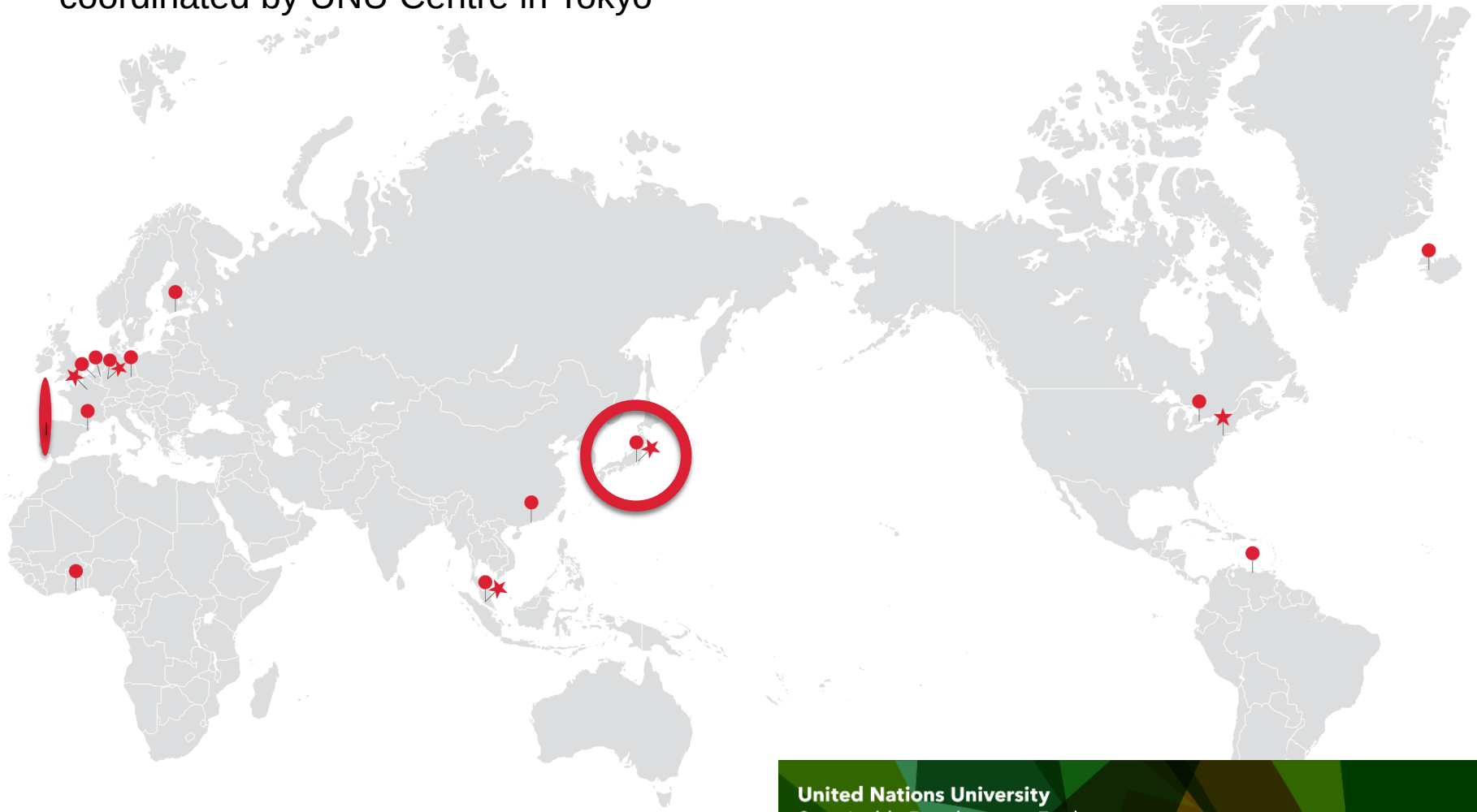
These priority areas have been refined and built upon over the ensuing four decades to form the three thematic clusters that UNU pursues today:

1. **Peace and Governance**
2. **Global Development and Inclusion**
3. **Environment, Climate and Energy**



UNU System

A global system of research and training institutes, coordinated by UNU Centre in Tokyo



UNU-EGOV - MISSION

Part of the United Nations University and based in the city of Guimarães, north of Portugal

UNU- EGOV : Operating Unit on policy-driven Electronic Governance:

- a **think tank dedicated to Electronic Governance**
- a core **centre of research, advisory services and training**
- a **bridge between research and public policies**
- an **innovation enhancer**
- a **solid partner within the UN system and its Member States** with a particular focus on sustainable development, social inclusion and active citizenship.

… striving to cement its role as **an international reference of excellence**, bringing together multidisciplinary and multicultural teams around complex problems and emerging challenges

United for Smart Sustainable Cities

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SUSTAINABLE DEVELOPMENT GOALS

Supported by:

Convention on Biological Diversity

ECLAC

United Nations Economic Commission for Africa

UN WOMEN

UNDP
Empowered lives. Resilient nations.

UNESCO
United Nations Educational, Scientific and Cultural Organization

UN environment
United Nations Environment Programme

UNEP FINANCE INITIATIVE

UNIDO

Coordinated by:

World Meteorological Organisation

ITU

UNECE

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UN HABITAT
FOR A BETTER URBAN FUTURE

U4SSC Initiative

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Launched by ITU and UNECE, in response to the Sustainable Development Goal 11: "Make cities and human settlements inclusive, safe, resilient and sustainable. “

U4SSC advocates for public policy to encourage a responsible use of ICTs to facilitate and ease the transition to smart sustainable cities.

U4SSC – Ongoing projects

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- Blockchain 4 Cities
- City science application framework
- Guidelines on strategies for circular cities
- Guidelines on tools and mechanisms to finance SSC projects
- Guiding principles for artificial intelligence in cities
- The Impact of Frontier Technologies on Cities

B4C – Blockchain for Cities

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- Objectives: Understand and assess the effective contribution of BC to develop SSC
- Present the potential and transformative effect of blockchain on sustainable smart cities.
- Identify, define and assess the benefits and risks of the use of blockchain.
- •Create a framework for policy assessment and design

Purpose of the deliverable

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Guideline for supporting local regional and/or nationals decision makers

How blockchain technology can contribute to make Smart and Sustainable cities?

- Illustrating the application of blockchain in supporting sectoral strategies and development at the city level (e.g. transportation, climate, health, finance etc) or by using the Generic Urban Problem Categories
- Identifying the Challenges and Benefits of B4C
- Developing a framework for assessing and designing blockchain to support decision makers in implementing blockchain

Socio-technical perspective (Technology, Context, Resources and capabilities, Ethics and regulations, sustainability, etc)

Providing policy recommendations

Guideline (or key considerations) for design and implementation

Blockchain for Cities (B4C)

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Roles and responsibilities

STAKEHOLDER	ROLES	KEY RESPONSIBILITIES
ITU	General coordination	• Strategic guidance and support • Dissemination of the results
UNU-EGOV	Project Lead	• Coordination of the deliverable • Consolidation the report • Edition and Review of the report
Municipalities	Target audience	• Validate the structure and content of the report
Experts	Project team/Authors	• Enrich the discussions, participate in meetings, contribute for the content deliverables • Submit case studies and good practices of B4C • Review the deliverables

Blockchain for Cities (B4C)

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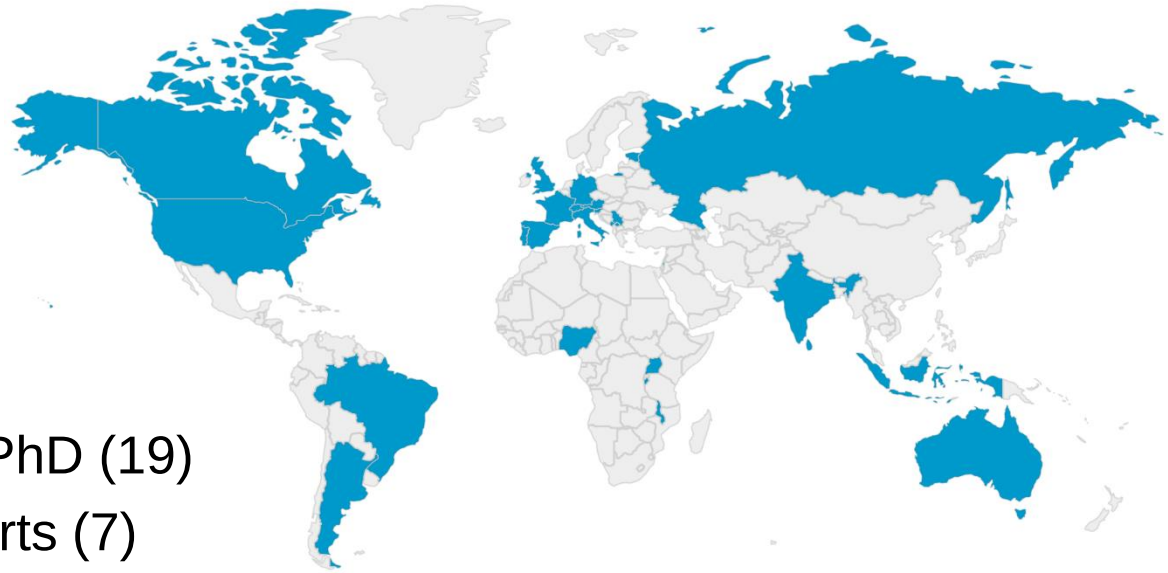
Experts

- 126 submissions
- 06 continents
- 66 experts selected
- Backgrounds:
    - Researchers- PhD (19)
    - Technical experts (7)
    - B4C (6)
    - Professionals (25)
    - Regulations/Standards (9)



Outcome from the Questionnaire to the municipalities

1. Expections from the reports

Better and in-depth understanding of the technology and its use in context of cities and communities

- Use-cases and apllications (68%)
- Managerial viewpoint of BC (61%)
- Benefits of BC (61%)
- Risks (48%)
- Challenges (45%)

→ Presentation of Cross-sectoral approach on the implementation of BC
→ Financing and Business opportunities from BC for Cities
→ Legal and ethical information for using BC
→ Is Blockchain a future tool for voting processes ? Use-cases opportunities and risks?
→ Security and feasibility considerations in the integration of BC with traditional business processes and systems

Outcome from the Questionnaire to the municipalities

2. Understand the technology

- Yes 82%
- No 12%

3. Using BC Technology

- Yes 24 %
- No 75%

4. Planning or Interesting in the technology

- Yes 77%
- No 23%

Blockchain for Cities (B4C)

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Overview

Deliverables	Responsible	Deadline	Status
Call for experts	U4SSC/ITU	2018	Completed
Experts selection process	UNU-EGOV	2018	Completed
Evaluation of the structure of the report	Experts	2018	Completed
Official starting of the report	UNU-EGOV	January 2019	Completed
Validation of the structure/content of the deliverable by the target group	UNU-EGOV	February 2019	Completed
Deliverable Preparation	Experts/UNU-EGOV	February/Sept 2019	To be concluded
First complete version of the Deliverable	Experts/UNU-EGOV	September 2019	To be concluded
Review and final complete version of the deliverable	Experts/UNU-EGOV	October 2019	To be concluded
Edition of the deliverable	ITU/UNU-EGOV	Nov-Dec 2019	To be concluded
Publication	ITU/UNU-EGOV	January 2019	To be concluded

Structure of the report

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Executive summary (Policy recommendations)

Glossary

1. Introduction

- 1.1. Background
- 1.2. Motivation,
- 1.3. Purpose and objectives
- 1.4. Approach and methodology
- 1.5. Structure of the deliverable

2. Smart Sustainable Cities & Communities/settlements (SSCC) (main challenges and opportunities for SSC)

- 2.1. General background on smart cities & Communities/settlements
  - 2.1.1. Context of smart city & Communities/settlements
  - 2.1.2. Smart city & Communities/settlements definition (What is a smart city ?)
  - 2.1.3. Smart city & Communities/settlements characteristics (What makes a city smart?)
  - 2.1.4. Smart city business models and local project funding
- 2.2. Sustainable cities & Communities/settlements
- 2.3. Smart city & Communities/settlements main opportunities
- 2.4. Smart city & Communities/settlements main challenges

Structure of the report

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3. Blockchain technology and DLTs for Smart sustainable cities & Communities/settlements

- 3.1. BC technology and DLTs
- 3.2. Data Management, ethical challenges, Data protection and privacy
- 3.3. Is Blockchain a disruptive technology for cities?
  - 3.3.1. Benefits of Blockchain for cities
  - 3.3.2. Foreseen risks and challenges of BC technologies for SSC
- 3.4. Example of blockchain applications for cities (potential use-case)

4. B4C Framework

- 4.1. Presentation and description of the framework
- 4.2. Relevance of BC and its contribution to **cities & Communities/settlements** challenges
- 4.3. Definition of the technical solution of BC4C
- 4.4. Requirements and capabilities for BC4C
- 4.5. Definition of the design and implementation
- 4.6. Benefits and barriers of BC4C implementation

5. Policy recommendations (Key considerations, guideline and/or action plan for B4C design, policies)

Policies and Legislation, Institutional Accountability, Strategic Planning and Financing, Stakeholder Programme Design and Delivery, Engagement and Participation of Non-State Actors

Outcome of the report

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- **Analysis of the questionnaire addressed to municipalities managers**
- **Interview of Experts and head of startups developing smart cities solutions in different areas**
- **Analysis of Smart cities and communities challenges and issues that can be addressed using Blockchain technology**
- **Analysis of Blockchain characteristics and properties**
- **Development and Analysis of 12 use-cases**

The B4CC Framework will provide information for municipalities regarding:

- The context of the city that adopted (or is planning to adopt) the Blockchain-based Solution
- Urban/local issues addressed by the use of BC and why
- The benefits, risks and challenges of BC for SSCC
- Definition of the technical solution, requirements and capabilities for BC4C
- Compliance with sustainability, Data protection, privacy and ethical issues of BC for SSCC

- Key considerations for B4SSC design and implementation
- Guidelines for Policies and regulation and for Engagement of Non-State Actors


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Thank you.
Any questions?

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