



Smart Cities for All

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Digital Inclusion Tools for Global Smart Cities

SMIT-VUB

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two guys
on a **global**
mission
to make
smart cities
Accessible
for all

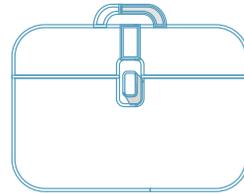


Smart Cities for All

Smart Cities

Use information and communication technologies (ICTs) to enhance livability, workability, and sustainability.

Smart Cities Council



moving around without assistance

seeing

hearing

remembering

with self-care

1 Billion

Number of people who have difficulty with

**Technology is advancing in all
aspects of our lives**



What is accessible technology?

Benefits Everyone

1. Usable by anyone, regardless of age or ability
2. Makes it easier to see, hear, & use all ICT devices
3. Personalize experience to meet own unique needs & preferences

Part of Ecosystem

1. Features built into mainstream products
2. Assistive technology
3. Interoperability

A Human Right

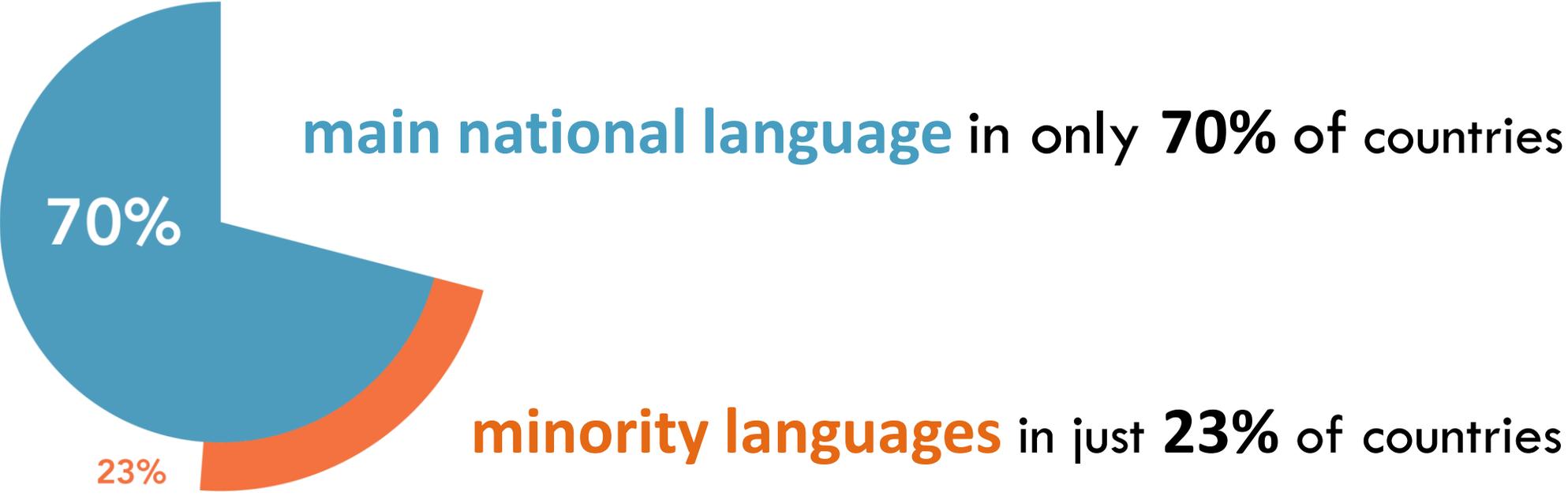
1. Preamble – A11y as enabler for rights
2. Article 3 (f) – A11y is one of 8 general principles, e.g. non-discrimination, equal opportunity, full participation in society, etc.
3. Article 9 - includes ICT in A11y definition & elevates obligations on par with built environment & transportation

Article 9(h): design for A11y at early stage of production

Article 9(2)(a): minimum A11y standards

Today's Digital Infrastructure is Not Accessible

Text to Speech availability on mobile devices in:



Today's Digital Infrastructure is Not Accessible

In just **40%** of CRPD countries, some (not all)
government websites are accessible

In just **18%** of CRPD countries are the top
10 commercial
and **media websites** accessible



The percent of
people living in
cities
worldwide will
grow from
50% today to
70% by 2025

Cities
are our
Future

>\$2
Trillion

By 2025

Smart Cities

The Leading Edge

The background of the slide is an aerial photograph of a city skyline, featuring several prominent skyscrapers. The image is overlaid with a semi-transparent gradient that transitions from a deep blue on the left to a light green on the right. The text is centered and rendered in a clean, white, sans-serif font.

Are Smart Cities Designing for Inclusion?

Today's Smart Cities...

are making the digital
divide BIGGER.

- **Less than half of experts know of a Smart City with a focus on ICT accessibility – 44%**
- **Just 18% of experts know of a Smart City using ICT accessibility standards**
- **60% of experts say Smart Cities are failing persons with disabilities**



Smart Cities for All

Smart Cities for All Toolkit

This toolkit contains resources to help Smart Cities worldwide include a focus on ICT accessibility and digital inclusion of persons with disabilities and older persons.

The toolkit supports a range of organizations and roles related to Smart Cities, including program managers, policy makers, Chief Information Officers (CIOs), IT professionals, academics, procurement officials, accessibility experts, technology suppliers to Smart Cities, developers who design Smart City apps and solutions, and disability organizations and advocates.

1. **Guide to Priority Standards**
2. **Guide to Adopting a Procurement Policy**
3. **Communicating the Case for Digital Inclusion**
4. **Database of Solutions**
5. **Maturity Model – in development**

Guide to Implementing Priority ICT Accessibility Standards

Accessible information and communications technology (ICT) standards are key to designing a more inclusive approach to Smart Cities. This guide provides an inventory of three key standards that define ICT accessibility criteria and presents a step-by-step checklist of impactful actions that leaders can take to ensure their city is aware of these standards and using them effectively.

- **Accessibility standards ensure that ICT can be designed and developed to meet the needs of all users –**
 - including people who experience the world in different ways because of impairments and disabilities.
- **3 Priority ICT accessibility standards:**
 - ETSI EN 301 549
 - US Section 508
 - Web Content Accessibility Guidelines (WCAG) 2.0 (ISO/ IEC 40500:2012)

Smart Cities ICT Accessibility Standards Checklist



Step 1: Become familiar with the three priority ICT accessibility standards

Step 2: Do a citywide ICT accessibility assessment using an ICT accessibility standard

Step 3: Evangelize ICT accessibility standards

Step 4: Adopt an ICT accessibility standards strategy

Guide to Adopting an ICT Accessibility Procurement Policy

Cities worldwide are uniquely positioned to use their considerable purchasing power, including of ICTs, to advance the rights and digital inclusion of persons with disabilities and older persons. This guide helps cities adopt a policy that requires any ICT purchases be accessible to persons with disabilities and older persons. The guide showcases a model procurement policy and provides a step-by-step checklist for adopting it.

- **What are ICT public procurement policies and why do they work?**
- **Cities can lead on digital inclusion with procurement**
 - Demographic trends & leadership on metrics related to human rights, technology, and economic output
- **G3ict-ITU Model Procurement Policy**
 - Sample language for main stages of procurement (e.g. calls for tender, assessment, selection processes, evaluation and review)
 - References US Section 508 or the ETSI EN 301 549

Adopting a Procurement Policy

Step 1: Organize and raise awareness among leaders

Step 2: Review existing ICT and procurement policies

Step 3: Adopt an international ICT accessibility standard and implement at a local level

Step 4: Build public awareness and support for adopting an ICT accessibility procurement policy

Step 5: Adopt the model policy to integrate into city-level procurement guidelines

Step 6: Enable implementation across city agencies

Step 7: Review and monitor implementation of the new procurement policy

Communicating the Case for Stronger Commitment to Digital Inclusion in Cities

One of the biggest challenges to creating more inclusive smart cities is raising awareness of disability and ICT accessibility. This tool is designed to help effectively communicate the advantages of incorporating ICT accessibility into a city's digital services. It provides the business, human rights, and technical arguments for stronger commitment to digital inclusion of persons with disabilities and can be used to help socialize the idea that a Smart City must also be an accessible city with a variety of stakeholders.

- **Global Trends Case**
 - Growing digital divide - Americans with disabilities are around three times as likely as those without a disability to say they never go online (23% vs. 8%)
- **Demographic & Business Case**
 - Persons with disabilities and their families have a disposable income of > \$8 Trillion USD
- **Rights and Policy Case**
 - People with disabilities have poorer health, lower education achievements, less economic participation and higher rates of poverty than population as a whole
- **Technical Arguments**
 - ICT accessibility benefits go beyond legal compliance and risk – e.g. web SEO and localization

How to Communicate the Case for Digital Inclusion

Step 1: Set the Communications Goals and Objectives

- Communication goals will vary with different audiences

Step 2: Develop Key Messages That Effectively Speak to Your Audience

- Identify different stakeholders & tailor messages to them for impact

Step 3: Identify Priority Communications Channels

- What techniques and tools are most likely to reach the target audience

Step 4: Create A Communications Strategy

- Clearly define, layout and track all the key steps mentioned above

Step 5: Mobilize Allies and Resources

- What types of resources can be leveraged to amplify your message?

Step 6: Measure and Evaluate Outcomes

- Use indicators and milestones to see if the message is being effectively received.

Database of Solutions (Alpha version)

Smart cities that incorporate ICT accessibility into their programs and solutions can deliver enormous benefits for citizens with disabilities, older citizens, and the population as whole. This tool is designed to showcase existing products and solutions that can be deployed by Smart Cities to positively impact citizens in critical areas, such as independent living, public safety, transportation, employment, and online public services, etc.

- **Online public services**
 - CUIDAPP - Guadalajara - direct personalized channel to city information and services
- **Financial Services**
 - TransitLink – Singapore -contactless fare payments using Account-Based Ticketing (ABT) for public transport
- **Voting and Democratic Processes**
 - LiveBallot – Global – delivers electronic ballots securely to voters with disabilities, remote voters, and others.
- **Many more...**

What is a maturity model?

- Method to evaluate and measure relative maturity of processes or operations
- Key elements:
 1. **Dimensions:** units of analysis. Core city processes which the model evaluates for level of maturity of digital inclusion and accessibility
 2. **Levels of maturity:** used to measure capability of city operations (dimensions) to promote digital inclusion and digital accessibility. 5 Levels.

Five Dimensions for Smart Cities

Important Smart City operations & processes that must relate to digital inclusion and digital accessibility:

1. **Strategy** (vision, business case, leadership, etc.)
2. **Culture** (innovation & citizen engagement, etc.)
3. **Process** (budget, procurement, communications, etc.)
4. **Technology** (standards, solutions development, etc.)
5. **Data** (what gathered, how used, etc.)

1. Strategy

1. Vision
2. Business & Rights Case
3. Leadership

- Optimizes for accessibility and an improving Quality of Life for citizens with disabilities and older citizens.
- Defines a vision for digital inclusion that supports key city goals, such as economic development and sustainability.
- Develops the business and rights case for inclusion and details how the city plans to capitalize on accessibility and inclusion as a strength and competitive advantage.
- Includes a systemic and coordinated future vision for city operations that are accessible, usable, and able to be personalized by all citizens to meet their individual needs and abilities.
- Leaders promote a commitment to smart city technology deployments that advance inclusion for all.

2. Culture

1. Innovation
2. Citizen Engagement

- Apply innovation and citizen engagement to increasing accessibility, digital inclusion, and Quality of Life for people with disabilities & older persons.
- Move beyond just compliance to minimum accessibility requirements. Motivated by creativity and opportunity not risk avoidance.
- Recognize potential for innovation & emerging technologies to solve longstanding accessibility and digital inclusion challenges to the benefit all citizens.
- Citizen sourcing (e.g. mobile apps, operational information, and new ideas, etc.) is possible using social networks and mobile devices. If fully accessible.
- Capitalize on the resources of all citizens and convene leaders from government, industry, and civil society to bridge inclusion gaps and narrow the digital divide.

3. Process

1. Governance
2. Partnerships

- Governance and partnerships are key enablers of continually improving the accessibility and inclusiveness of smart city programs and digital services.
- Governance measures the structure and procedures for implementing change in cities, e.g. ICT procurement policies, budgeting, communications, monitoring, roles definitions.
- Collaborations with ICT vendors, academia, private industry, DPOs, and citizen groups are necessary to deploy accessible and inclusive smart solutions.
- They support innovation ecosystems that include a focus on design for all and using emerging technologies to enable digital inclusion.

4. Technology

1. Universal Design
2. Accessibility Standards
3. New Solutions
4. Tech Adoption

- More than just ICT infrastructure, related technologies, and the development of enterprise architecture.
- Extent to which technology assets are accessible, usable by everyone, and support an improving Quality of Life (QoL) for all citizens.
- Universal Design principles and accessibility standards are prioritized as cities develop and deploy mainstream smart solutions and technologies.
- Use emerging technologies for solutions to improve outcomes for persons with disabilities, e.g. education, independent living, mobility, and employment.
- Recognize existing digital divide & proactively work to promote greater connectivity and adoption of technology by persons with disabilities

5. Data

1. More Data About PwD
2. More Data By PwD
3. Data For Better Outcomes

- Big data and open government lead to greater inclusion not less.
- Address persons with disabilities as a data desert.
- Statistics about them are almost nonexistent. Improving efforts to collect, standardize and analyze data about persons with disabilities.
- Ensure data generation and collection programs, like crowd-sourcing, include a specific focus on hard-to reach and underrepresented communities, e.g. persons with disabilities and older persons.
- Use data analytics and mining to support predictive and preventative resource allocations and processes that benefit all citizens, including specifically improved outcomes for persons with disabilities and older persons

1

Provide Direct Technical Assistance to Smart Cities

2

Expand Tools Available to Smart Cities

3

Evangelize ICT Accessibility at a Global Scale

4

Increase Capacity Via Training and Knowledge Sharing

5

Drive Accessible Technology Innovation in Smart Cities Solutions

6

Change the Global Narrative

Additional Resources

Visit www.smartcities4all.org
and download additional tools.

Contact

info@smartcities4all.org