PAS
QUICKNOTES

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Digital Trust in Public Spaces

Today's urban infrastructure includes digital systems such as smart lighting, traffic management, and public wifi. While these technologies enhance urban life, they depend on continuous data collection and artificial intelligence (AI)-enabled processes, raising privacy, security, and misuse concerns. Building digital trust—public confidence in responsible and transparent data practices—is essential for successful adoption of these technologies.

Digital Trust for Places & Routines (DTPR), an open-source communication standard, provides planners and placemakers with a framework to clearly communicate data and technology practices. This makes digital infrastructure more understandable and enables public participation that can help foster community trust in data-driven smart cities.

BACKGROUND

Building and maintaining digital trust is essential for public acceptance of smart technologies and the full realization of their potential benefits. Just as physical infrastructure requires rigorous planning, transparent review processes, and public engagement to ensure alignment with community needs, digital infrastructure must also meet clear guidelines for planning and participation to retain public support for its often-unseen benefits and impacts. Digital trust relies on three pillars:

- **Transparency:** Clear, accessible communication about data practices from collection to storage, which builds public understanding and trust.
- **Security:** Robust protections against unauthorized access and misuse, which require cybersecurity measures, vendor accountability, audits, and transparent procurement policies.
- **Ethical management:** Technology use that aligns with community values, which can be achieved by prioritizing inclusivity, privacy, and accountability, especially for underserved groups.

Without digital trust, cities face the risk of public skepticism or even active opposition to the use of smart urban infrastructure. This mistrust can lead to protests, reduced adoption rates, or legal challenges, delaying or halting smart city projects. In San Diego, the City installed smart streetlights to improve energy efficiency and support transportation management by optimizing parking and traffic flow, but public concern over the use of data-collecting technologies resulted in an implementation delay of over three years until the City adopted a surveillance technology oversight ordinance. Without clear, consistent communication and responsible data handling, cities may struggle to implement data-driven innovations, compromising the potential benefits and eroding public support for future projects.

ABOUT DTPR

DTPR is an open-source communication system that makes digital technology use in public spaces visible and understandable. Developed to simplify complex data processes, DTPR enables clear communication about how public technologies collect and use data, including its increasing use in AI-enabled urban processes and systems.

DTPR uses a structured taxonomy with standardized icons and terminology. The icons represent the purpose of the technology, the types of data it collects, how the data is processed, where the data is stored, and who has access to the data. Icons are shown on physical signage at the point of interaction with public technologies, such as sensors or cameras, while QR codes provided on the signage link to online channels where residents can learn more about data handling, security practices, and privacy protections. This combination of physical and digital communication enables residents to quickly understand the technologies around them and how their data is used without needing technical expertise.

By making urban data practices visible and understandable, DTPR aligns technology use with community expectations, fostering public confidence and engagement. Image courtesy Helpful Places.

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In Charlotte, North Carolina, the City installed DTPR signage at PoleVolt EV charging stations, which use utility poles to provide free curbside charging. Signs displayed icons explaining the air quality sensor and smart lighting technologies involved and included QR codes for detailed information, empowering residents to engage with urban innovations. In Australia's Sydney Olympic Park, the Park Authority used DTPR signage and a digital portal to inform the public about dynamic crowd measurement (DCM) technology, the types of data it collected, and associated privacy measures. This approach allowed residents to ask questions, provide feedback, and help define appropriate boundaries for the technology's use, ensuring it aligned with community expectations and ethical considerations.

USING DTPR IN SMART CITY PROJECTS

Integrating DTPR into smart city projects supports careful planning and collaboration for digital infrastructure. Planners should start by organizing public workshops on DTPR's transparency tools to support discussions on project goals, gather input on communication needs, and address potential privacy and data concerns. These sessions empower residents by building digital literacy, especially for communities unfamiliar with public realm technology.

By supporting public engagement throughout all stages of technology planning and deployment, DTPR helps build understanding and trust, enabling residents to contribute meaningfully to decisions about technology deployment and data practices. This participatory approach ensures that the integration of data and technology reflects community values and needs by bringing together diverse stakeholders, including residents, community leaders, and technology providers, to create a shared sense of responsibility and agency.

LONG-TERM BENEFITS OF DIGITAL TRUST

Maintaining digital trust through consistent use of DTPR offers lasting benefits for cities and communities. By continuously reinforcing transparency, DTPR helps foster an informed and engaged public. When residents feel confident in how their data is collected and handled, cities are better positioned to implement future smart city technologies with community support.

Institutionalizing digital transparency and trust goes beyond signage. Cities can embed DTPR's principles of legibility and accountability across urban planning processes, setting a precedent for responsible data use in all public initiatives. Standardizing DTPR within policies on technology procurement, data management, and public communication ensures that transparency remains a priority, regardless of project type or changing administrations.

DTPR can also build ongoing public support for smart cities. It empowers residents to understand and engage with urban technologies, transforming them from passive users to active participants. By using DTPR as a core component of public engagement, planners can create feedback channels, host periodic workshops, and update online resources, sustaining public involvement over time. This ongoing relationship builds trust, encouraging communities to support smart city projects that align with shared values. Incorporating DTPR into the broader fabric of city governance thus creates a robust foundation of trust, enabling cities to advance technological innovation while respecting residents' privacy and fostering an inclusive, community-driven approach to urban development.

CONCLUSIONS

Transparency and digital trust are essential pillars of successful smart city projects. By making data practices visible and understandable, DTPR aligns technology use with community expectations, fostering public confidence and engagement. As an open-source standard, DTPR is a valuable tool to help cities implement responsible, community-centered approaches to digital infrastructure. Embedding DTPR's principles into urban development policies builds trust and ensures that technology advances in ways that respect privacy and empower residents. With DTPR, cities can achieve technology use in which innovation and accountability come together for the benefit of all community members.

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FURTHER READING

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