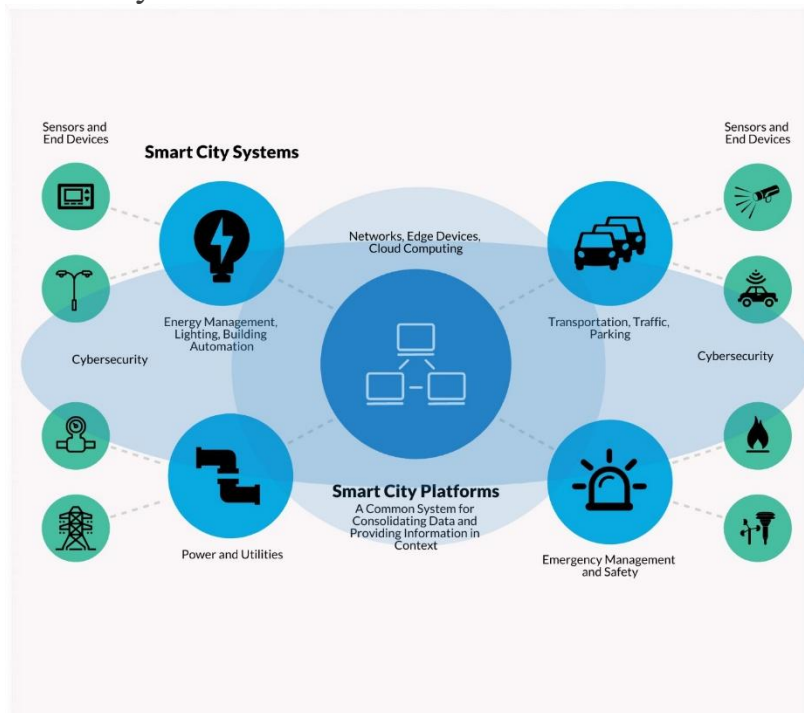


DATA PLATFORMS FOR SMART CITIES

IoT data platforms for smart cities act as the foundational digital nervous system. They ingest, aggregate, and analyze high-volume streams from urban sensors (e.g., smart meters, traffic lights, air quality monitors).

Smart City Platforms

Smart cities are comprised of a “system of systems.” These can include smart city lightings, building automation systems, emergency management systems, security and access control systems, intelligent grids, renewable power, water treatment and supply, transportation, and more. The smart city concept is not new; many of these systems existed well before the term “smart cities” was coined. However, many end users are now attempting to integrate information from these disparate systems into a unified whole to provide a holistic view of the overall performance and state of the city and its various functions.



Smart City Platforms Provide a Common level of Abstraction and Manage Information from Multiple Smart City Systems

The age of the Internet of Things (IoT) has brought with it an increasingly broad range of sensors and IoT platforms. Many of these have made their way into the smart cities sector. In many ways, IoT technology holds the best promise for providing unification and context to the huge array of data generated by smart cities and turn this data into actionable, contextualized information that can be used to reduce energy consumption and operational costs while improving the safety and quality of life of citizens.

In the Industrial Internet of Things architecture, smart city platforms reside at the enterprise level. These platforms perform many functions, including analytics, remote asset monitoring, performance management, decision support and/or presentation components. At a minimum, the functionality of a smart city platform must include:

- Visualization
- Application enablement
- Data management

The platform may also include:

- Cybersecurity
- Device management
- Network management
- Application development
- Analytics
- GIS
- Mobility
- Reporting

Leading IoT data platforms are deployed via robust cloud infrastructure or specific smart city frameworks:

- **Cloud-Native Hyperscale Platforms:**
 - **AWS IoT Core & AWS Smart City:** Provides comprehensive device management, edge data processing, and analytics through Amazon Web Services (AWS).
 - **Azure IoT:** Offers robust security, digital twins, and AI capabilities for urban analytics via Microsoft Azure.
- **Specialized Smart City & IoT Frameworks:**
 - **FIWARE:** A highly adopted open-source framework and API standard in the EU and globally, allowing cities to share and manage context information through the [FIWARE Foundation](#).
 - **Cisco Kinetic for Cities:** Designed specifically to connect, compute, and manage urban data from streetlights, parking, and transit for [Cisco](#).
 - **Sensolus:** An asset tracking and IoT data platform used primarily for smart waste management and municipal fleet tracking through [Sensolus](#).

- **Government Initiatives:**
 - In India, the **Smart Cities Mission** operates unified data platforms in 100 cities to foster data-driven urban governance, accessible via the [Smart Cities Mission Data Portal](#).