Original Article

Smart Cities: Data, Design and Development

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Abstract:

Smart Cities is a concept in which ICT and IoT both are used as a backbone to accomplish (improve) better life style and more connectivity for simplest and easier life. Traffic, public crowd in queue for registration, orders and much more can be minimized with the help of connectivity over internet. Urban areas developed with technological support offers such things. To make technologically smart area, areas which support this are transport, infra, energy and various public services Smart cities developed with keeping in mind the agenda to offer more sustainability, more livable environment and better efficiency. Characteristics behind the smart cities are efficiency enhancement, sustainability, quality improvement of life, citizen engagement, strong connectivity and data sharing. Although smart cities work with 5G and Beyond networks but it actually works with 6G technology-that is smart government, smart people, smart environment, smart economy, smart transportation and smart life

Keywords: Smart City, ICT, IoT, Urbanization, Data Analysis

Introduction

Technologies and networking concepts created a distance apart communication mechanism to connect different devices and equipment's for digital data transfer. IoT and ICT are the recent technologies who offered the distance apart communication, distributed communication. Sensors, digital electronic equipment's helps in better day to day data sharing and distance apart communication. Access to the future situation earlier saves time and efforts. This can be possible with the help of technological connectivity with real day to day life activities in public nature.

Smart Cities is a concept in which ICT and IoT both are used as a backbone to accomplish (improve) better life style and more connectivity for simplest and easier life. Traffic, public crowd in queue for registration, orders and much more can be minimized with the help of connectivity over internet. Urban areas developed with technological support offers such things. To make technologically smart area, areas which support this are transport, infra, energy and various public services Smart cities developed with keeping in mind the agenda to offer more sustainability, more livable environment and better efficiency. Characteristics behind the smart cities are efficiency enhancement, sustainability, quality improvement of life, citizen engagement, strong connectivity and data sharing.

Sensors with the support of data analytics and GPS connected devices (Vehicles) keep track of and analyses the traffic flow, do management of parking and offers better transportation at public places. West management, medical waste management and different such areas are enhanced by smart cities concept. Government sectors modified with IoT and ICT offered better public management and engagement of peoples(citizens) in various mechanisms. Control, optimization and real-time monitoring of urban area is completed with technological backbone support. Distance apart distributed communication is possible only with internet connectivity. Connectivity of devices, equipment's done with network support, wireless network sensors act as foundation for data collection from various sectors spread in city. Sensors do the real time monitoring. Local Area Network (LAN), Metropolitan Area Network (MAN), Wide Area Network (WAN), Device to Device(D2D) communication, mobile networks are various networking technologies used nowadays for better communication. Smart cities concept uses various of these networks in hybrid mode.

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Sensors works depends on connectivity speed and backend technology used. Smart cities use 5G network, high speed, optical fiber cables are used for distance apart connectivity. These are all backbone support to collect, store, design, develop and manage data. Data Management and processing is done with the IoT, cloud Computing, Edge Computing, ICT, Data Analytics. The ore infrastructure behind this smart city is transportation in smart way, smart grid, smart water management, waste management, public safety and so on. Although smart cities work with 5G and Beyond networks but it actually works with 6G technology-that is smart government, smart people, smart environment, smart economy, smart transportation and smart life. We are now entered into a new era of technology and smart cities, it's a requirement for businesses and various leaders to adapt this new concept and stay in touch and in developed phases to acquire the needs required for modernization. Internet of things, streetlights, phones, cameras are embedded with sensors and software that allow business and cities to share vital data and instantaneously create statistical models. IoT is a heart of smart cities network. In recent 10 years as internet service grow rapidly the applications which are data intensive has exponentially increased. The IoT facilitates physical objects integration in a smart cities network.UVS and robotics are used for automation of processes and distance transportation. Services offered by smart cities network are enhanced delivery of services, traffic monitoring, environment monitoring, safety and security controls, telecommunication services. Cloud computing offers a cost-effective computations and data storage centers to support applications required by smart network. Bhopal, Indore, Agra, Varanasi, Chennai, Pune, Pimpri-Chinchwad, Amravati and many more cities are now a days leaders of smart cities.As cities are day by day playing vital role in GDP growth, urbanization with smart city helped by new technologies is need of future.

Conclusion

We are now entered into a new era of technology and smart cities, it's a requirement for businesses and various leaders to adapt this new concept and stay in touch and in developed phases to acquire the needs required for modernization. Internet of things, streetlights, phones, cameras are embedded with sensors and software that allow business and cities to share vital data and instantaneously create statistical models. IoT is a heart of smart cities network. In recent 10 years as internet service grow rapidly the applications which are data intensive has exponentially increased. The IoT facilitates physical objects integration in a smart cities network.

Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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