Smart Mobility Planning Applications in Meeting the Needs of the Urbanization Growth

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Abstract : Massive Urbanization growth threatens the sustainability of cities and the quality of city life. This raised the need for an alternate model of sustainability, so we need to plan the future cities in a smarter way with smarter mobility. Smart Mobility planning applications are solutions that use digital technologies and infrastructure advances to improve the efficiency, sustainability, and inclusiveness of urban transportation systems. They can contribute to meeting the needs of Urbanization growth by addressing the challenges of traffic congestion, pollution, accessibility, and safety in cities. Some example of a Smart Mobility planning application are Mobility-as-a-service: This is a service that integrates different transport modes, such as public transport, shared mobility, and active mobility, into a single platform that allows users to plan, book, and pay for their trips. This can reduce the reliance on private cars, optimize the use of existing infrastructure, and provide more choices and convenience for travelers. MaaS Global is a company that offers mobility-as-a-service solutions in several cities around the world. Traffic flow optimization: This is a solution that uses data analytics, artificial intelligence, and sensors to monitor and manage traffic conditions in real-time. This can reduce congestion, emissions, and travel time, as well as improve road safety and user satisfaction. Waycare is a platform that leverages data from various sources, such as connected vehicles, mobile applications, and road cameras, to provide traffic management agencies with insights and recommendations to optimize traffic flow. Logistics optimization: This is a solution that uses smart algorithms, blockchain, and IoT to improve the efficiency and transparency of the delivery of goods and services in urban areas. This can reduce the costs, emissions, and delays associated with logistics, as well as enhance the customer experience and trust. ShipChain is a blockchain-based platform that connects shippers, carriers, and customers and provides end-to-end visibility and traceability of the shipments. Autonomous vehicles: This is a solution that uses advanced sensors, software, and communication systems to enable vehicles to operate without human intervention. This can improve the safety, accessibility, and productivity of transportation, as well as reduce the need for parking space and infrastructure maintenance. Waymo is a company that develops and operates autonomous vehicles for various purposes, such as ride-hailing, delivery, and trucking. These are some of the ways that Smart Mobility planning applications can contribute to meeting the needs of the Urbanization growth. However, there are also various opportunities and challenges related to the implementation and adoption of these solutions, such as the regulatory, ethical, social, and technical aspects. Therefore, it is important to consider the specific context and needs of each city and its stakeholders when designing and deploying Smart Mobility planning applications.

Keywords : smart mobility planning, smart mobility applications, smart mobility techniques, smart mobility tools, smart transportation, smart cities, urbanization growth, future smart cities, intelligent cities, ICT information and communications technologies, IoT internet of things, sensors, lidar, digital twin, ai artificial intelligence, AR augmented reality, VR virtual reality, robotics, cps cyber physical systems, citizens design science