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## Case Study of Smart Nagarpalika

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## ➢ Introduction to Smart City

A smart city is an urban area that uses advanced technology and data-driven solutions to improve the quality of life of its citizens and enhance sustainability. In a smart city, various systems such as transportation, energy, communication, and public services are interconnected and automated to make cities more efficient, livable, and sustainable. Some of the key features of a Smart city include:

a) **Intelligent transportation systems:** Smart cities use technology to manage traffic flow, optimize public transportation systems, and reduce congestion.
b) **Energy-efficient buildings**: Smart cities use green building practices and technology to reduce energy consumption and greenhouse gas emissions.
c) **Smart grids**: Smart cities use digital technology to manage energy distribution and consumption, reduce waste, and promote renewable energy sources.
d) **Public safety**: Smart cities use sensors, cameras, and data analysis to improve public safety and emergency response times.
e) **Citizen engagement**: Smart cities use technology to engage citizens in decision-making processes, improve access to information, and enhance communication between citizens and government.

Alongside the IoT solutions, smart cities also use technologies including:

a) Application Programming Interfaces (APIs)
b) Artificial Intelligence (AI)
c) Cloud Computing Services.
d) Dashboards.
e) Machine Learning.
f) Machine-to-Machine Communications.
g) Mesh Networks, etc.

The main goal of a smart city is to use technology and data-driven solutions to create a more sustainable, efficient, and livable urban environment for all citizens.

## ➢ Smart Nagarpalika

Smart Nagarpalika is an idea of smart city development in India which falls under the Municipal corporation/Municipality type of urban local bodies for the administration of urban areas. The main goal of introduction of Smart Nagarpalika is to implement the services in a more smart, efficient and citizen centric alternative and uplift the quality of life of the citizens.

National Smart Cities Mission is an urban renewal and retrofitting program by the Government of India with the mission to develop smart cities across the country, making them citizen friendly and sustainable. The Union Ministry of Urban Development is responsible for implementing the mission in collaboration with the state governments of the respective cities.

## ➢ History and Fiscal Planning for the Smart City mission

"100 Smart Cities Mission" was launched by Prime Minister Narendra Modi on 25 June 2015. A total of ₹98,000 crore (US$12 billion) was approved by the Indian Cabinet for the development of 100 smart cities and the rejuvenation of 500 others. ₹48,000 crore (US$6.0 billion) for the Smart Cities mission and a total funding of ₹50,000 crore (US$6.3 billion) for the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) have been approved by the Cabinet.
In the 2014 Union budget of India, Finance Minister Arun Jaitley allocated ₹7,016 crore (US$880 million) for the 150 smart cities. However, only ₹924 crore (US$120 million) of the allocated amount could be spent until February 2015. Hence, the 2015 Union budget of India allocated only ₹143 crore (US$18 million) for the project.
The first batch of 20 cities was selected. Known as 20 Lighthouse Cities in the first round of the All India City Challenge competition, they will be provided with central assistance of ₹200 crore (US$25 million) each during this financial year followed by ₹100 crore (US$13 million) per year during the next three years. The Urban Development Ministry had earlier released ₹2 crore (US$250,000) each to mission cities for preparation of Smart City Plans.

## ➢ Status of Smart Nagarpalika in India

In recent years, there has been a push for smart cities and municipalities in India, and many nagarpalikas have been implementing various smart initiatives to improve their services and quality of life for their citizens. The progress of smart city development in India has been mixed. Some cities such as Pune, Surat, and Bhubaneswar have made significant progress in implementing smart city solutions such as intelligent transport systems, smart waste management, and digital governance.
The progress of smart city development in India has been mixed. Some cities such as Pune, Surat, and Bhubaneswar have made significant progress in implementing smart city solutions such as intelligent transport systems, smart waste management, and digital governance. However, many cities have faced challenges such as delays in project implementation, lack of funding, and inadequate infrastructure. The COVID-19 pandemic has also impacted the progress of smart city development in India, with many projects being delayed due to budget constraints and disrupted supply chains.

Here are a few examples of smart nagarpalikas in India:

**a)** Surat Nagarpalika: Surat is considered one of the smartest cities in India, and its nagarpalika has been instrumental in implementing various smart initiatives such as a city-wide Wi-Fi network, smart traffic management systems, and a citizen engagement platform.

**b)** Pune Nagarpalika: Pune has been a pioneer in smart city initiatives in India and its nagarpalika has implemented several projects such as intelligent traffic management systems, smart waste management, and public transportation.

**c)** Bhopal Nagarpalika: Bhopal has implemented several smart initiatives such as a smart street lighting system, intelligent traffic management system, and a city surveillance system.

**d)** Jaipur Nagarpalika: Jaipur has implemented several smart initiatives such as a smart parking system, city-wide Wi-Fi network, and a citizen engagement platform.

**e)** Vishakhapatnam Nagarpalika: Vishakhapatnam has implemented several smart initiatives such as a smart water management system, a city-wide Wi-Fi network, and a citizen engagement platform.

These are just a few examples of the many smart nagarpalikas in India that are leading the way in implementing innovative solutions to improve the lives of their citizens.

## ➢ Challenges in implementation of Smart Nagarpalika in India

India is one of the fastest developing countries in the world, even after more than 70 years of independence. India is still labeled as a Developing country due to the highly dense population and the per capita income of the citizens being very low as compared to other nation's PCI. There surely arise some challenges to completely transform the local urban bodies into a Smart Nagarpalika or city. Some of the key challenges are following:

i) Lack of Infrastructure: One of the biggest challenges facing smart nagarpalikas in India is the lack of adequate infrastructure to support these initiatives. For example, implementing a city-wide Wi-Fi network requires a strong internet backbone and adequate connectivity, which may not be available in all areas.

ii) Lack of Funding: Implementing smart initiatives requires significant investment in technology and infrastructure. However, many nagarpalikas in India may not have the financial resources to fund these initiatives, which can hinder their implementation.

iii) Lack of Awareness: Many citizens may not be aware of the benefits of smart initiatives, or how they can use these technologies to improve their lives. This can lead to resistance and reluctance to adopt these technologies.

iv) No/Weak Data Security and Privacy: Smart initiatives require the collection and analysis of large amounts of data, which can raise concerns around privacy and security. It is important for nagarpalikas to implement robust data protection policies and ensure that citizens' data is secure.

v) Lack of Coordination: Smart initiatives often require coordination between multiple departments and stakeholders. This can be challenging, particularly in large nagarpalikas where there may be silos and a lack of communication between departments.

So like an under "developing" country like Nepal, even India faces similar kinds of problems on their way of implementing Smart approaches in the local urban bodies. Addressing these challenges is crucial for the successful implementation of smart initiatives in nagarpalikas in India. It requires a multi-stakeholder approach, including government, citizens, and private sector, to work together and find innovative solutions to overcome these challenges.

## ➢ Solutions to the challenges aroused in Smart Nagarpalika setup

To address the challenges of Smart Nagarpalika in India, here are some potential solutions:

a) Investment in Infrastructure: To address the infrastructure challenge, Nagarpalikas can partner with private sector companies to invest in the necessary infrastructure. They can also leverage existing infrastructure, such as public buildings and streetlights, to install sensors and other smart technology.

b) Collaborative Funding: To address the funding challenge, Nagarpalikas can explore alternative financing models, such as public-private partnerships, to finance smart initiatives. They can also seek funding from national and international development agencies.

c) Public Awareness: To address the lack of awareness challenge, Nagarpalikas can launch awareness campaigns to educate citizens about the benefits of smart initiatives. They can also leverage social media platforms to engage citizens and provide them with information.

d) Data Security and Privacy: To address the data security and privacy challenge, Nagarpalikas can implement robust data protection policies and ensure that citizens' data is secure. They can also establish a data governance framework to manage data collection, storage, and sharing.

e) Coordination and Synchronization: To address the coordination challenge, Nagarpalikas can establish a central coordinating body to oversee smart initiatives and ensure that departments are working together. They can also use technology platforms to facilitate communication and collaboration between departments.

## ➢ Conclusion

Despite these challenges, the Indian government remains committed to building smart cities and Smart Nagarpalika, and is taking steps to address the issues faced by cities. The government has increased funding for the Smart Cities Mission and is exploring new partnerships and collaborations with private companies and international organizations to accelerate the pace of smart city development in India.
But the major involvement that must be included for the successful implementation of Smart Cities is the involvement of the general public. The public's involvement is what motivates and coordinates the smooth development of any place whether it be a rural, semi urban or an urban region. Even in the context of India, the Indian public of the urban sector knows the importance of the implementation of Smart approaches in their day-to-day life and hence is why their degree of development is faster and rapid than any other nation in the world.

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