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ROLE OF IT IN SMART CITY DEVELOPMENT

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Abstract

A Smart City is one that is able to link physical capital with social one, and to develop better services and infrastructures. It is able to bring together information technology, and political vision, into a coherent program of urban and service improvements. Smart City is a city well performing in six characteristics: - Smart Economy - Smart Mobility - Smart Environment - Smart People - Smart Living - Smart Governance. Cities now a day face complex challenges to meet objectives regarding social-economic development & quality of life. The concept of "smart cities" is a response to these challenges. This paper explores "smart cities" as the city which will embrace new technologies, focussing on smart innovation, to create a city i.e. competitive, open, interconnected and intelligent.

Keywords: Smart Cities, Innovation, Mobility, Governance.

1. INTRODUCTION

A Smart City effectively delivers public services to citizens and businesses in an integrated and resource efficient way while enabling innovative collaborations to improve quality of life and grow the local and national economy. A smart sustainable city is an innovative city that uses information and communication technologies (ICTs) and other means to improve quality of life, efficiency of urban operation and services, and competitiveness, while ensuring that it meets the needs of present and future generations with respect to economic, social, environmental as well as cultural aspects.

A smart city is an urban development vision to integrate information and communication technology (ICT) and Internet of things (IoT) technology in a secure fashion to manage a city's assets. These assets include local departments' information systems, schools, libraries, transportation systems, hospitals, power plants, water supply networks, waste management, law enforcement, and other community services. A smart city is promoted to use urban informatics and technology to improve the efficiency of services.

Smart city as a high-tech intensive and advanced city that connects people, information and city elements using new technologies in order to create a sustainable, greener city, competitive and innovative commerce, and an increased life quality. Smart cities are the result of knowledge-intensive and creative strategies aiming at enhancing the socio-economic, ecological, logistic and competitive performance of cities. Smart city is combination of Sensing, Networking ,Analysis, Control. Such smart cities are based on a promising mix of human capital (e.g. skilled labor force), infrastructural capital (e.g. high-tech communication facilities), social capital (e.g. intense and open network linkages) and entrepreneurial capital (e.g. creative and risk-taking business activities).

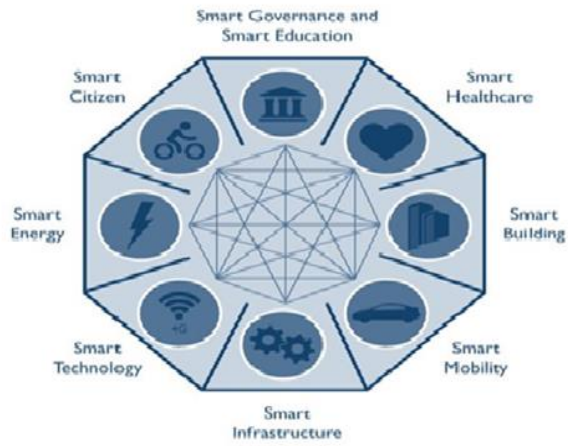

Figure 1: Smart City Concept

Smart cities have high productivity as they have a relatively high share of highly educated people, knowledge-intensive jobs, output-oriented planning systems, creative activities and sustainability-oriented initiatives.

The most common characteristics of smart cities are:

1. A city's networked infrastructure that enables political efficiency and social and cultural development.

2. An emphasis on business-led urban development and creative activities for the promotion of urban growth.
3. Social inclusion of various urban residents and social capital in urban development.
4. The natural environment as a strategic component for the future.

2. RELATED WORK

Some of these studies rank cities according to social, economic, and environmental criteria and describe well-performing cities. L. Atzori [1] try to find how to strategize the smart city concept developing a review of "smartness " definition of the cities and the respective characterization parameters. H. Schaffer's [4] develops a review of the smart cities analysis, where try to establish a historical starting point to cities facing economic and population change and also contextualizing smart cities by a brief exploration of papers and publications covering governance. He also refers to an integrative framework that has been proposed for understanding the concept of smart cities and to be used to evaluate the components of smart city initiatives.

3. PROPOSED METHOD

3.1 Pillars Characteristics of Smart City

The first step towards becoming a smart city is taken at the strategic level. Main fields of action in this context are energy, mobility, the environment, the economy, society, politics, administration and quality of life. Some of the above are intertwined and increasingly networked with the support of IT. Technical, economic and social innovations provide the foundation for such activities. Smart cities build on sustainability but also on resilience in the sense that cities as systems are made more resistant and adaptable to influences from inside and out.

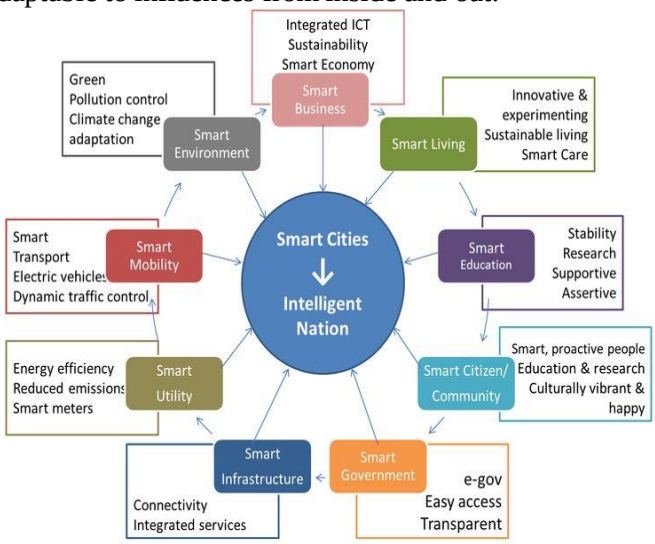

Figure 2: Smart City

Energy and environment

Reducing energy and raw material consumption and forward-looking resource management are among a city's major concerns. Smart supply and disposal systems are just as important as process driven changes, technological developments and networks for energy, mobility, infrastructure and buildings. Smart grids, for that matter, are a step towards smart energy consumption: intelligent networks and monitoring systems are put in charge of energy generation, storage and consumption. Smart meters are installed to make actual energy consumption more transparent.

Mobility

Smart mobility means innovative traffic and transport infrastructure that saves resources and builds on new technologies for maximum efficiency. Accessibility, affordability and safety of transport systems, as well as compact urban development are essential factors in this context. New user-friendly facilities will make it easier for people to switch to integrated transport systems focussed on environmentally friendly transport modes. Joint utilisation, i.e. "car sharing", instead of private ownership is what counts these days when using motor vehicle.

Economy

Smart economies actively support education, qualification, research and entrepreneurial spirit, innovation, productivity and flexibility. Continuous knowledge acquisition and transfer, as well as local and global networks are the main ingredients for creative output. Enterprises offering IT, environmental and energy services in particular are considered the driving force for smart economies.

Governance

Smart Governance promotes both, changes in governance and coordination processes, and planning processes with public participation. The administration encourages cooperation among municipal organisation units and is opening itself up to a wide range of players from business, research, civil society and other local authorities. Projects in their implementation stage increasingly rely on cooperation among the above. Public digital data are widely accessible to allow for more transparency and enable people to participate in decision-making processes.

Society

Increasing people's quality of life requires more than technical innovations. Also and above all it is the social dimension that needs to be taken into account. Civil society must be actively involved in making smart cities become reality. Main focus must be on education, lifelong learning, culture, health, safety of individuals, plurality of society and social cohesion. Urban everyday life provides sufficient leeway to promote people's creativity and competences. Networking and self-management are major pillars of society without which smart cities would be doomed to fail.

3.2 List of Smart Cities in India:

1. Bhubaneswar, Odisha
2. Pune, Maharashtra
3. Jaipur, Rajasthan
4. Surat, Gujarat
5. Kochi, Kerala
6. Ahmedabad, Gujarat
7. Jabalpur, Madhya Pradesh
8. Visakhapatnam, Andhra Pradesh
9. Sholapur, Maharashtra
10. Davangere, Karnataka
11. Indore, Madhya Pradesh
12. New Delhi Municipal Corporation
13. Coimbatore, Tamil Nadu
14. Kakinada, Andhra Pradesh
15. Belagavi, Karnataka
16. Udaipur, Rajasthan
17. Guwahati, Assam
18. Chennai, Tamil Nadu
19. Ludhiana, Punjab
20. Bhopal, Madhya Pradesh

3.3 Worlds Smartest City: Singapore

Figure3: Singapore the smartest city on the Earth

Singapore's unique geopolitics are key to positioning itself as a living laboratory. All these ideas can be tested, and potentially commercialized, without the usual difficulties of regulatory approval. Rolling them out worldwide will be more difficult, for sure, but Dr.Balkrishnan believes the initiatives can be "customized and applied to other cities around the world."While it's difficult to see New York City putting satellite-navigation devices into cars, there are ways similar data could be collected. The world is pushing rapidly toward autonomous vehicles, and within the decades, it's likely that the majority of cars will be collecting far more data on their environments and traffic conditions than they are now. It's not impossible to see a future in which this data is anonymously aggregated and used to improve our road layouts and traffic flow.

Virtual Singapore

Taken on their own, each of these initiatives is small, but the sensors all come together to form a platform called "Virtual Singapore." Being built, again, through a public-private partnership, Virtual Singapore is a model of the island built not just to scale, but with fastidious detail.

Figure4: Virtual Singapore

It contains the exact dimensions of every building, where the windows are located, and even what it's built out of. Think of it like Google or Apple Maps' 3D modes, but with the ability to enter every building and see its layout. On its own, the model will be impressive, but it's when sensor data is fed in that things get interesting, offering an unparalleled view of the city.

Consider this for a moment. The data of an entire city, contained within a scale model. The movement of every car; the flow of water, electricity and waste, all in one place. Now add in the output of each security camera; air-quality measurements (a pilot program has students wearing sensors to detect such environmental factors), crowd-density views, noise levels and more.

3.4 Advantages of smart cities:

a) Better city planning and development.
b) E-government services delivered to citizens, faster, and at a lower operating expense.
c) Local economic development.
d) Improved productivity and service.

3.5. Disadvantages of smart cities:

Because of smart city there is lot of pollution and it has many industries which can harm the water or our surroundings because of many people's that is air pollution and noise pollution to and most of the people because of the Smart City come and settled in the city so that they get everything which they need so because of this that is overpopulation in a particular City.

4. CONCLUSION

In this paper we explored the concept of “smart cities” as thus its is becoming the most important part of government. Each and every country though small or large is putting efforts to make its cities smart with all the smart acts of some of the most developed cities of the world, any section should be looked upon and efforts should be made to implement these things. With more easy for cities that implement them. Smart cities should promote innovation, equality and wider reach of services to all citizens. IOT plays a key role in making cities smarter; openness of data and interconnection between different data sources and services is a key requriment.

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