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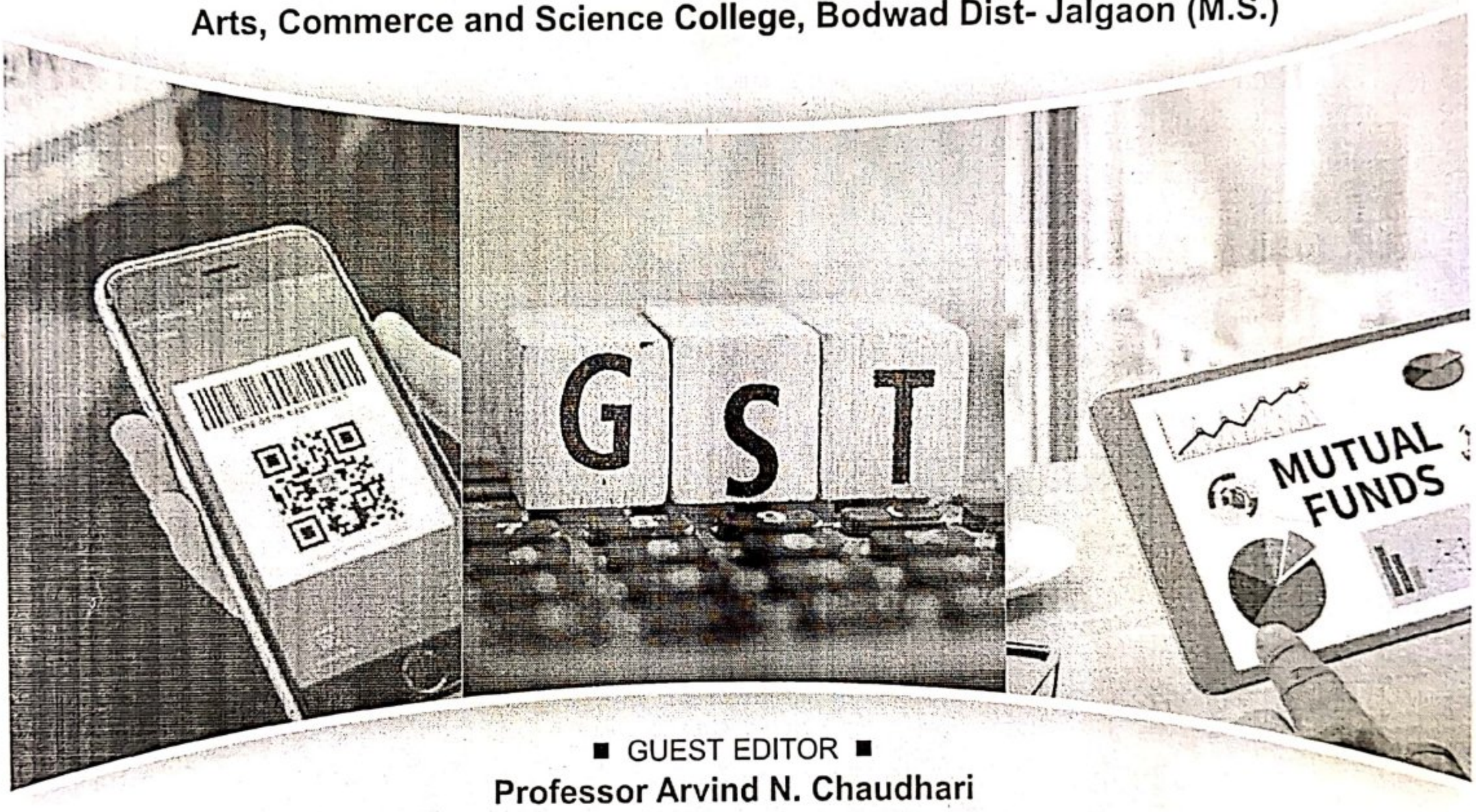

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Communication And IT Services

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Abstract

This article provides a review of the United Nations Commission on Science and Technology for Development (UNCSTD) Working Group on ICTs and Development Report . The author highlights key issues of ICTs in a development context; and summarizes the Report's assessment of both potential and risks of ICTs for developing countries. A check-list derived from the Report provides guidelines for issues to consider in developing ICT policies and implementation strategies.

Introduction

In some parts of the world, information and communication technologies and services (ICTs) are contributing to revolutionary changes in business and everyday life. In other parts of the world, the lives of people have hardly been touched by these innovations. If people in developing countries are unable to acquire the capabilities for using the new ICT applications, they will be increasingly disadvantaged or excluded from participating in the global information society. The social and economic potential of these new technologies for development is enormous, but so too are the risks of exclusion.

On the Other hand, the growth of Telecommunications is also alarming. In recent times, country has emerged as one of the fastest growing telecom markets in the world. Indian telecom has become the second largest wireless network in the world after China. The future progress of telecom in our country is very encouraging. The current addition of about 15 million connections per month puts the telecom sector on strong footing. Measuring the impact of ICT is critical to better understanding the role of ICT for economic and social development. With the rapid growth of the ICT sector in India, there is an important demand from the research community and policy makers for better data to ensure that research findings are representative for the entire country or the state in order to inform policy makers about ICT developments and its impact and have meaningful interpretations of policies. In particular, there is a real need to measure the digital divide in the country, including the urban-rural and gender divides, and the use of community Internet access centers and mobile phone applications by low -income users. In India, much work on measuring the impact of the IT industry on economic growth and employment has been carried out. The Government of India has been making sustained efforts to improve the availability of ICT data for policy making and research. Certain data in particular data on the telecommunication sector, the IT industry and business process outsourcing (BPO), data on the information society at large, are produced on a regular basis, A significant amount of data exists on the ICT service industry, collected by National Association of Software and Services Companies (NASSCOM), reflecting their members' data. Similarly, data on ICT manufacturing is captured by another private body, the Communication and Manufacturing Association of India (CMAI).

However, there is a clear need to collect more ICT data in India in a comprehensive and comparable fashion, particularly on the use of ICT by individuals, households and businesses. While some of these data are produced through surveys in a limited manner, official statistics representing the entire sector in a regular manner are still limited. The current proposed paper attempts to identify the existing data system / data present in the fie ld of ICT statistics in India, particularly with reference to the Basic Core Indicator s identified and recognised at international level under the four categories (a) Infrastructure and Access (b) Access to and use of ICT by households & Individuals (c) Use of ICT by businesses (d) ICT sector and Trade in ICT goods.

Development of Communication And IT Services:-

One of the identified agents through which the world will constantly experience change is technology. In the business of trying to make information available in the right form to the right user both at the personal and organizational levels, and at the right time, the bid to cope with great flood of information has led to the need for a more sophisticated way of handling information faster and better.At the heart of technology lie two main or branches of technology: computing and telecommunication. The technologies covered are the computer system, Internet/electronic mail (e-

mail), mobile phone, and fax machine.

1. **Computers:-** Computers were originally used by scientists for calculating numbers, and have gradually become useful in offices and industries. In recent times, simplified models that can be used by almost everybody have become common in schools and homes for accomplishing many varied tasks and applications. Computers are now commonly put to: writing letters, and reports, printing books, newspapers, and magazines, drawing pictures and diagrams, doing statistics, mathematics and handling financial records, controlling traffic lights, flying aeroplanes, making and playing music and video, sending messages anywhere in the world.
2. **Internet:-** The Internet is a global collection of many types of computers and computer networks that are linked together. It is increasingly becoming the solution to many information, problems, information exchange, and marketing. Internet as a mixture of many services with the two most commonly used being electronic mail (e-mail for short) and the World Wide Web (www). It plays a significant role in education, health, political processes, agriculture, economy, businesses and newsgroups Internet connectivity, one can do business all over the world without physical contact with the buyer or the need for a business intermediary.
3. **E-mail:-** Electronic mail (e-mail) is the exchange of text messages and computer files transmitted via communications networks such as the Internet (Nwosu, 2004). Fapohunda (1999) sees the e-mail system as the equivalent of postal mailing services, with the biggest difference being the time and cost involved. And not only written data, but all sorts of information in the form of video, audio, or photographs, can be sent via e-mail. Oketunji (2000) describes e-mail as an increasing popular method of communication, especially in the workplace.

Mobile Phones:-

Bittner (1989) defines mobile phones as a telephone system that can move or be moved easily and quickly from place to place. Mobile phones were once the tool of rich and busy executives who could afford both the luxury. Mobile phones are now the ICT that is reshaping and revolutionizing the communications globally. Its impact on the economic activities of nations, businesses, and small entrepreneurs is phenomenal. New technology has been reshaping the material basis of the society as well as bringing about a profound restructuring of economic, political, and cultural relations among states. Etc

Role of Communication And IT services in Generation O f Employment:-

1. Core indicators on access to, and use of, ICT by households and Individuals:-

National Sample Survey Office (NSSO) of the Ministry of Statistics and Programme Implementation conducts multi-subject integrated sample surveys all over the country in the form of successive rounds relating to various aspects of social, economic, demographic, industrial and agricultural statistics in successive rounds, each round covering subjects of current interest in a specific survey period. The subject coverage of Socio Economic (SE) inquiries for different rounds is decided on the basis of a 10 year time frame. In this cycle, 1 year is devoted to land and live stock holdings, debt and Investment; 1 year to social consumption (education and health care, etc.), 2 years to quinquennial surveys on household consumer expenditure, employment & un-employment situation and 4 years to nonagricultural enterprises, namely, manufacturing, trade and services in un-organized sector. The remaining two years are for open rounds in which subjects of current/special interest on the demand of Central Ministries, State Governments and research organizations are covered. Each survey extends over a period of six months or a year which is termed a round. At present each NSS round covers, at the all India level, about 12,000 to 14,000 villages and urban blocks in the Central sample (covered by the Central government agency NSSO) and an independent sample of about 14,000 to 16,000 villages and blocks in the State sample (covered by the Governments of various states and union territories). The Socio-Economic Surveys cover the whole of the Indian Union except for a few inaccessible and difficult Pockets.

2. ICT at College Level:-

Under National Programme on Technology Enhanced Learning [NPTEL], about 400 ecourse and content generated by IITs and IIS Bangalore faculty in the field of IT. This course content can be accessed in form of Virtual Classroom for interactive lectures and learning for students at University level through 1GB connectivity under National Mission on Education through Information & Communication Technology [NME-ICT]. Computer labs are being set up in Universities & Constituent Colleges. Till date colleges affiliated to 14 University has been identified by HRD and Affiliated Colleges will be taken up in the next phase. Rest all the colleges/ universities will be connected

under NME-ICT project by 2015.

The State will facilitate partnership between educational institutes and industry to identify specific areas of research in the ICT area. To promote scholars and researchers, the state will give scholarships to deserving candidates from Bihar for undertaking R&D in IT and provide incentives for students from Bihar to take up Doctoral and Post Doctoral research in the ICT area.

Impact Of Communication And IT services On Indian Economy:-

1.A project on "Statistical Compilation of ICT sector Statistics in India":-

Recently Govt. of India, Ministry of Statistics and programme Imple mentation (MOSPI) has signed an MOU to participate in the project on "Statistical Compilation of ICT Sector and Policy Analysis" undertaken by Orbicom , the network of UNESCO Chairs in Communication. In this project an attempt has been made to compile data on the contribution of ICT sector to the Gross Domestic Product (GDP) and employment to the Indian economy following internationally accepted and harmonized definitions and concepts emerging form the OECD and United Nations. The value added has been compiled from the existing data holdings of the MOSPI. Since the ICT sector spreads over both organized and unorganized segments of manufacturing and services sectors, the value added has been compiled from the Annual Survey of Industries for organized manufacturing sector. For the unorganised manufacturing sector it was found that the contribution was negligible. For the services sector as a whole the value added has been estimated at two digit level of NIC from the National Accounts Statistics of India , the official publication released by Central Statistics Office of the Ministry of Statistics and Programme Implementation. The definition of ICT sector/ sub-sectors as defined under ISIC Version 4.0 and the corresponding derived National Industrial Classification 2008 (NIC-2008) ha s been used for compilation of the data. The high lights of the report are:

i) Estimated GDP (at 2-digit level of NIC) for total ICT has increased from Rs. 656 billion to Rs. 2530 billion in with Compound Annual Growth Rate (CAGR) of 21.3%.
ii) Estimated share (at 2-digit level of NIC) of ICT services to total ICT GDP is about 90% and that of ICT manufacturing sector to total ICT GDP is about 10%.
iii) Estimated share (at 2-digit level of NIC) of ICT services GDP to Service sector GDP hasIncreased.

2.Index of Telecommunication sector as a part of Services Sector Index:-

In view of the gr owing importance of the service sector in the Indian economy, in terms of its contribution to Gross Domestic Product (GDP) about 55% of total GDP as well as absence of short term indicators to measure the dynamics of this vital sector it was decided by the Govt. of India to compile service sector indices for the major source activities. Telecom sector is one of the services sectors which need to be measured on urgent basis. The work is in progress in the development of methodology and identification of the variables. The variables under consideration are fixed telephone services, mobile telephone services and provision of internet access.

Conclusions:-

In India, the data pertaining to access indicators are maintained at different sources in different formats for the purpose of internal policy decisions and investment purposes. Alone survey of enterprises or households will be of great help for business indicators and household indicators. Given the vastness of the country both in size and population, the collection of information on Gross value added, workforce imports and exports, for this sector according to ISIC definition, is very difficult and take time to establish the mechanism fully for international comparability of data.

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1. Opportunities and Challenges of Digitization in India

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Introduction

Smart Cities India is all set to become the most-populous country in the world by 2030, making it the home to the biggest and the most under-penetrated market for global manufacturers and service providers. Unlike its preceding generations, this growing population is also shifting to top tier cities of the country giving rise to new megacities estimated to generate 80% of economic growth, with potential to apply modern technologies and infrastructure, promoting better use of scarce resources.

As per estimates, about 25–30 people will migrate every minute to major Indian cities from rural areas in search of better livelihood and better lifestyles. With this momentum, about 843 million people are expected to live in urban areas by 2050. To accommodate this massive urbanization, India needs to find smarter ways to manage complexities, reduce expenses, increase efficiency and improve the quality of life.

With this context, Prime Minister Narendra Modi's vision "Digital India," has set an ambitious plan to build 100 smart cities across the country. Modi in his speech quoted, "Cities in the past were built on riverbanks. They are now built along highways. But in the future, they will be built based on availability of optical fiber networks and next-generation infrastructure."

Finance

A total of □980 billion (US$15 billion) has been approved by the Indian Cabinet for development of 100 smart cities and rejuvenation of 500 others. For the smart cities mission, □480 billion (US$7.1 billion) and for the Atal Mission for Rejuvenation and Urban Transformation (AMRUT), a total funding of 500 billion (US$7.4 billion) has been approved by the Cabinet.

In the 2014 Union budget of India, Finance Minister Arun Jaitley allocated □70.16 billion (US$1.0 billion) for the 100 smart cities. However, only □9.24 billion (US$140 million)

could be spent out of the allocated amount till February 2015. Hence, the 2015 Union budget of India allocated only □1.43 billion (US$21 million) for the project.

First batch of 20 cities selected in the second stage of competition will be provided with central assistance of 2 billion (US$30 million) each during this financial year followed by 1 billion (US$15 million) per year during the next three years. The remaining money has to come from the states, urban bodies and the consortium that they form with corporate entities. Also, 10 per cent of budget allocation will be given to states / union territories as incentive based on achievement of reforms during the previous year.

Urban Development Ministry had earlier released 2 crore (US$300,000) each to mission cities for preparation of Smart City Plans.

Smart City Challenge

Given the challenges involved in developing 100 smart cities, only the capable cities will be chosen under the Smart Cities Mission through a two-stage competition. This was indicated in the Operation Guidelines for Smart Cities Mission released by Prime Minister Narendra Modi. The selection criteria used in both the stages of competition was elaborated in the Guidelines.

In the Stage-1 of City Challenge Competition, each State and Union Territory scored all their cities based on a set of criteria and nominated the top scorers as per the indicated number of potential smart cities for participation in the Stage-2 of competition.

Stage 1 of Selection

The list of nomination marked the first stage in the selection process of smart cities, in which the state governments nominated potential cities and the Centre shortlisted 100.

The evaluation criteria for Stage1 of competition within the State/UT were as below.

Existing Service Levels (25 points): This includes Increase in service levels over Census 2011, an operational Online Grievance Redressal System, Publication of at least first monthly newsletter and online publication of municipal budget expenditure details for the last two financial years on website.

1. Institutional Systems and Capacities (15 points): This covers imposition of penalties for delays in service delivery and improvement in internal resource generation over the last three years;
2. Self-financing (30 points): This would be reflected in payment of salaries by urban local bodies up to last month, Auditing of accounts up to FY 201213, Contribution of

internal revenues to the Budget for 201415 and Percentage of establishment and maintenance cost of water supply met through user charges during 201415.

3. Past track record (30 points): Percentage of JNNURM projects completed which were sanctioned till 2012, Percentage of City level reforms achieved under JNNURM and extent of capital expenditure met from internal resources.

Stage 2 of Selection

The Government on 27 August 2015 released the list of nominees for the ambitious smart city project. The list comprises 98 cities, including many state capitals.

Proposal Level Evaluation (70 points)

Impact of proposal: To what extent the proposal is inclusive in terms of benefits to the poor and disadvantaged, Extent of employment generation, Articulation of quantifiable outcomes based on citizen consultations, Impact on environment etc.

1. Cost effectiveness of Smart City Plan: Application of smart solutions for doing more with less of resources, Alternatives considered to enhance cost effectiveness of the proposal, firming up of resources required from various sources, Provision for Operation & Maintenance Costs, IT interventions to improve public service delivery.
2. Innovation and Scalability: Extent of adoption of best practices in consultation with citizens, Applicability of project to the entire city, Adoption of smart solutions and Pan city developments.
3. Processes followed: Extent of citizen consultations, vulnerable sections like the differently abled, children, elderly etc., ward committees and area sabhas and important citizen groups, Extent of use of social media and mobile governance during citizen consultations and Accommodation of contrary voices in the strategy and planning.

The Ministry of Urban Development received proposals from the 97 cities to be beneficiaries of the first year financing from 2016 onwards. Minister of Urban Development Venkiah Naidu announced the selected top 20 from among them on 28 January 2016. Bhubaneswar topped the list of top 20, followed by Pune andJaipur. They were shortlisted by three different panels of experts based on the feasibility of the proposal, cost-effectiveness, result orientation, citizen participation, strategic plan, vision and goals, among other things.

Progress

The cities selected have started project preparations and implementation. The projects launched by Ahmedabad were "sewage treatment plant, housing project and smart learning in municipal schools". Bhubaneswar launched "railway multi-modal hub, traffic signalisation project and urban knowledge centre". New Delhi Municipal Council launched "mini-sewerage treatment plants, 444 smart class rooms, WiFi, smart LED streetlights, city surveillance, command and control centre".

Are smart cities and digital India a match made in heaven ?

The country is on the cusp of building 100 Smart Cities. Now when one hears the words "Smart City" even those who lack imagination will in all probability think about technology as the decisive factor that will add the smartness quotient to a city. In the Indian scenario, a Smart City is going to be an amalgamation of several factors such as basic infrastructure including water, electricity and solid waste management, affordability, education and healthcare to name a few. Digitalization will be the cherry on top that will bring together all these aspects to present an environment that is fully smart.

The Digital India initiative ties in well with the Smart Cities Project. Through this initiative the government aims to provide the citizens of this country access to internet, broadband services, and e governance and ensure that information is easily available to the general public. The Smart Cities Project is working on the principle of convergence which will bring together several key policies. This naturally syncs it with the Digital India movement because technology has a big role to play here.

Technology and automation have enriched our lives in a number of ways. What you imagine today can be brought to life with the help of technology. Things big and small can be controlled through technology in a city. Aspects that concern an ordinary citizen the most such as safety, transport, and environment can all be monitored. Mechanisms can be put in place that can collect relevant data which can then be analyzed to make the lives of the common folk better. For example energy consumption patterns can be monitored and the resulting data can be analyzed. The results thrown up can ultimately lead to the streamlining of resources devoted to energy production.

Paperless governance is another facet that is getting a major thrust. Most of us dread any paperwork related to government agencies. Imagine if all of this can be done with minimal

discomfort through the internet. This saves time and resources and the energy being used to accomplish this tedious task can be channeled towards something more productive. A state that is trying to pioneer this form of governance is Andhra Pradesh. Recently the state announced its plans to launch e Pragati which is touted to be an enterprise architecture that will take care of the e governance needs of the entire state. Andhra Pradesh becomes the first state in the country to enterprise architecture. The project is set to bring 745 services to the residents of the state via e governance. This also includes a plan for a land hub which will house details of all land parcels. With e Pragati, real estate related transactions can become more straightforward than ever before. Another region which is heading towards the complete digitization of property related documents is North Delhi. The North Delhi Municipal Corporation has initiated a project to digitize all records related to property taxes.

Conclusion

Wellington's progress toward a Smart City is too slow and if you were to score it, it would probably achieve a C minus. The Wellington Smart City plans are long on rhetoric and short on action. Full of buzz phrases and waffly words with no hard initiatives.

The Digital Strategy appears to have not progressed a great deal since its creation and needs to be revisited given its age. The actions in that strategy, yes there are actions, have no owner, no date, and have seen little progress. The Digital Strategy does list some of the issues that Wellington faces in terms of infrastructure.

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