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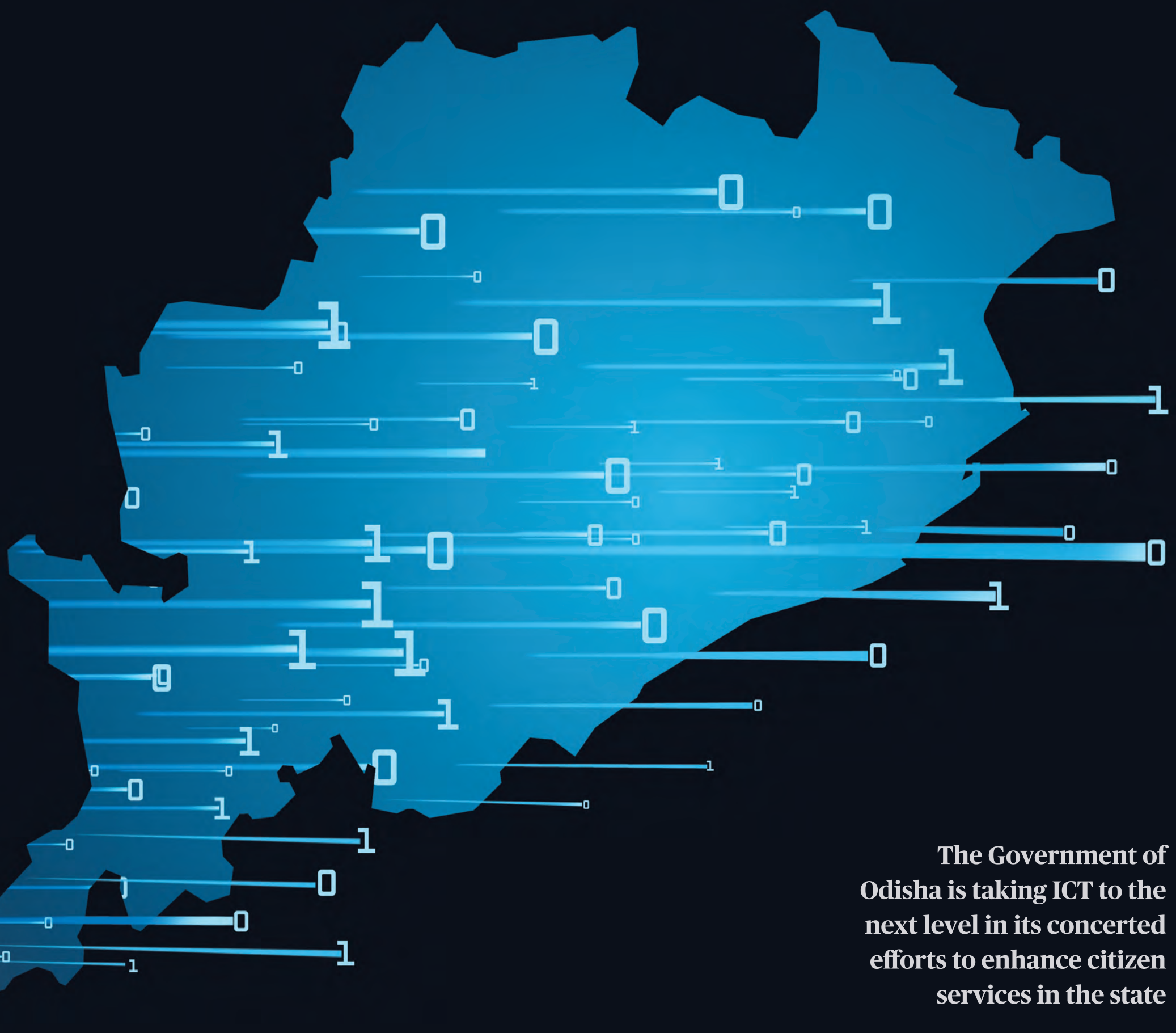

The Government of Odisha is taking ICT to the next level in its concerted efforts to enhance citizen services in the state

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Raising the bar for e-governance

Technology has become extremely pervasive, and it is common to see both Central and state government departments use technology effectively to improve governance. From fighting the menace of malaria using drones to using AI to monitor prisons, India is truly leveraging technology in innovative ways.

> Every state is innovating in different departments and setting the template for other states to follow. For example, Uttar Pradesh is using an artificial intelligence (AI) -powered video analytics solution to keep an eye on prison activities

Every state is innovating in different departments and setting the template for other states to follow. For example, Uttar Pradesh is using an artificial intelligence (AI)-powered video analytics solution to keep an eye on prison activities. The AI-powered video analytics tool is now live with 700 cameras from 70 prisons for multi-purpose analytics, including frisking, unauthorised access, crowd analysis, detecting violence and intrusion detection. Law enforcement authorities are notified immediately as soon as something unlawful is detected. In Uttarakhand, an AI based system automate driver's license tests has been deployed at the Dehradun Regional Transport Office (RTO).

The Kolkata Municipal Corporation has procured a drone to search and kill mosquito larvae for preventing spread of vector-borne diseases like dengue, chikungunya and malaria. The drone has a robotic hand that will collect samples from water and on the ground. If the samples indicate areas which are breeding grounds of mosquitoes, the drone has a container for storing the pesticides which can be activated to spray insecticides and kill the mosquitoes.

At the Central government level, several steps have been initiated. In a first, a national cyber crime reporting portal has been set up to enable citizens to report crimes online. The Uttarakhand Government has decided to go in for an e-cabinet, which besides speeding decision making, will save approximately 20,000 sheets of paper per sitting. In another first, RBI has amended KYC norms allowing banks to use video based Customer Identification Process – a move that will help banks and financial institutions onboard customers remotely. At the highest level, the Chief Justice of India S A Bobde has revealed that the Supreme Court is considering a proposal to introduce AI to aid the administration of the justice delivery system.

As one can see, every state is setting new benchmarks by carving out a new path on the road to better governance using technology.

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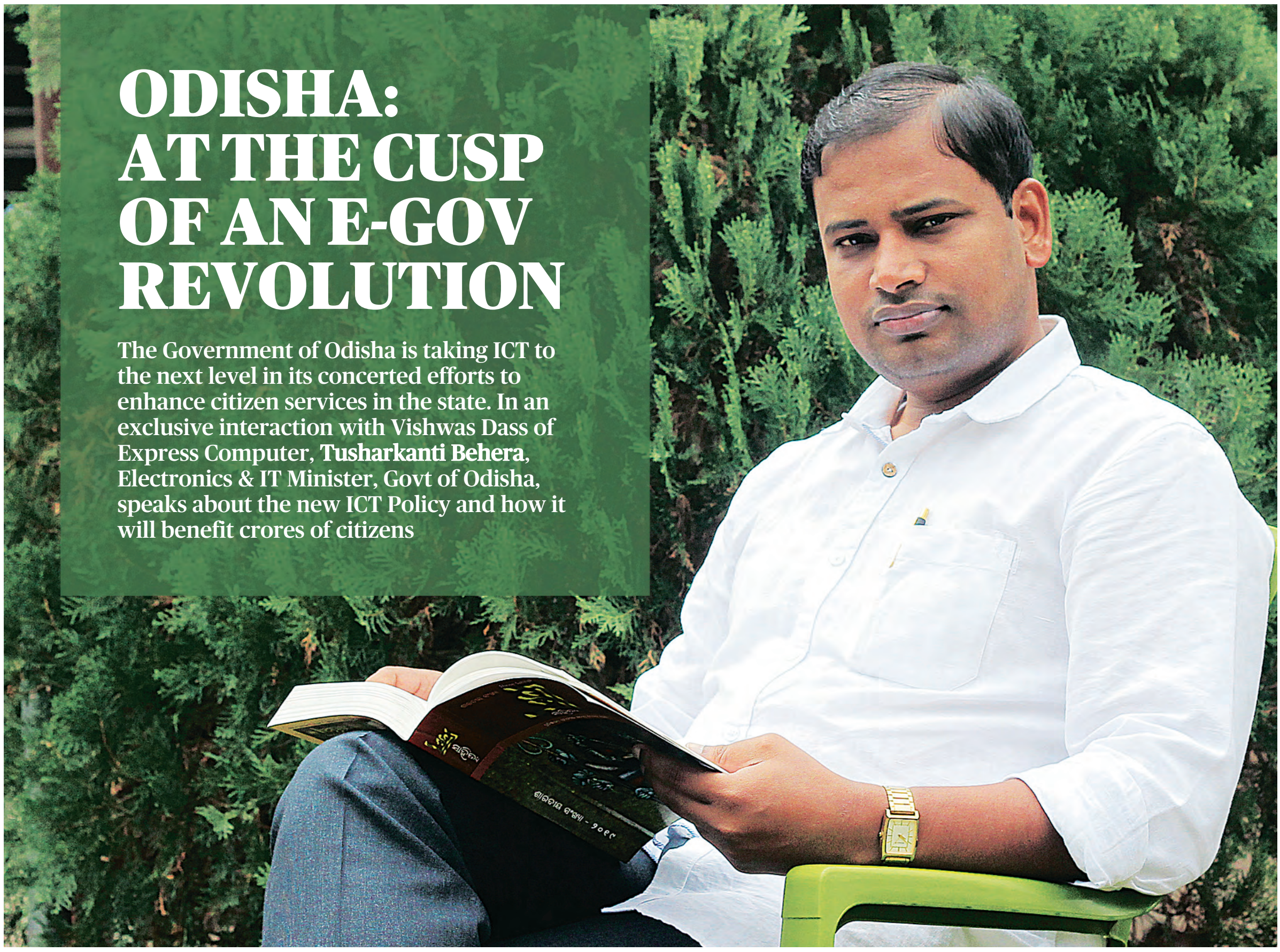
ODISHA: AT THE CUSP OF AN E-GOV REVOLUTION

The Government of Odisha is taking ICT to the next level in its concerted efforts to enhance citizen services in the state. In an exclusive interaction with Vishwas Dass of Express Computer, Tusharkanti Behera, Electronics & IT Minister, Govt of Odisha, speaks about the new ICT Policy and how it will benefit crores of citizens



Could you brief us about how Odisha Government is determined to use ICT to the next level to benefit crores of its citizens? What is the government's vision of embracing modern technologies to create jobs, train youth, improve services in various sectors like education, healthcare, urban development among others?

The ICT Policy of Odisha needs to be revamped and we would be coming up with a new policy by March 2020 to attract more companies. We aim to make the policy industry friendly which also ensures ease of doing business. We have created one Centre of Excellence in collaboration with Tech Mahindra and will also collaborate with other IT companies for setting up more such centres with other concerned stakeholdres in Bhubaneswar to train fresh IT graduates in AI, cloud computing, blockchain and machine learning and they will be at par with graduates from other states.

We are determined to use ICT in various sectors of governance for betterment of the citizen. We have mandated that each department would spend one per cent of their budget towards ICT. While implementing various IT initiatives in Odisha, we follow the Open Standard solutions. Important applications like e-District, HRMS and OSWAS are all developed in open standards and also with open source tools. The applications are based on an end to end open source platform which provides room for constant up gradation and advancement. These are stable, reusable and scalable platforms which have been seamlessly scaled to the entire state.

Government of Odisha is using various ICT interventions by leveraging new emerging technologies in key sectors like education, healthcare and urban development. In education sector, Odisha has an e-Vidyalaya programme in which schools are provided with ICT laboratory, internet and multimedia facilities for students. Also we have got an innovative initiative named as Student Academic Management System (SAMS) for e-Admission to the colleges across the state. Also we have 'Mo School Pogramme' connecting schools with their alumni using social media platforms which is a very unique initiative of the State. In the health domain, an application called e-blood bank is developed through which citizens can get the complete blood stocks on each blood group of each blood bank in district-wise in Odisha. The HMIS, Odisha Telemedicines, Government Doctor Management System etc are few initiatives in the health sector.

What has been the progress of the Odisha Government in embracing information technology in the recent years?

We have made the e-governance system more vibrant. The work process in secretariat, which is done by OSWAS (Odisha Secretariat Workflow Automation System), has been made easy.

The vision of the E&IT department is to use IT and Electronics to transform Odisha into an innovation and knowledge based society focusing on inclusive growth through citizen centric participatory governance. The government has been following a methodical approach by preparing overarching policies like ICT Policy, e-Governance Roadmap ,Promotion Strategy, IT Procurement Procedure, ESDM policy and guidelines and following closely to create an ICT enabling environment to enable citizen centric service delivery as well as boosting productivity and efficiency. Odisha has got an application named as OSWAS through which all file movements of the secretariat is done electronically and this automated work flow is continuing from 2008 onwards. The application is currently being used by all of the departments including the CM office. We have successfully migrated to OSWAS 2.0 with improved features for an employee friendly environment.

In the recent years Odisha government has put in place a strong disaster management mechanism to prevent deaths during natural calamities like cyclones. In fact, The UN has praised Odisha's efforts in ensuring minimum damage in the event of cyclones.

Could you share any of such project where IT has played a key role and helped the government?

For dissemination of information we required a robust IT system for communication to the last stage of villages. We have reached people at the grassroot level by using IT. The revenue and disaster management department is using IT services to disseminate information during emergency and natural calamities to people living in villages. Odisha Government has developed various applications and projects where IT has played key role and helped improve the governance. A few examples are :-

- The e-District project as an MMP under NeGP was implemented in all districts of Odisha.
- The e-Municipality project was implemented in all urban local bodies of the state to ensure on line delivery of high volume citizen centric services provided by municipalities.
- Steel & Mines department of Odisha has implemented i3MS (Integrated Minerals and Mines Management System) which brings transparency to the mining process.
- To increase the efficiency across the administrative structure, thereby improving the quality of services to citizens through a system of ICT, e-Registration, computerization of all 316 Sub Registrar offices across the State is implemented.
- Now an Integrated Finance Management System (IFMS) is being implemented by the finance department, to have a Centralized Core Treasury Management System in place.

How does the Odisha Government plan to attract investment in the field of electronics manufacturing?

We have earmarked 650 acres of land for IT and ITES and electronics manufacturing clusters to attract ESDM companies. I have also visited some IT companies across the country and discused with them opportunities to be explored in Odisha. Info Valley is an ideally located and spacious industrial park with specific focus on IT, ITeS and ESDM sector needs. Along with aggressively marketing our electronic manufacturing cluster in various national and international platform, we are also modifying our IT, ESDM and BPO Policies to have edge over the competing states.

> Government of Odisha is using various ICT interventions by leveraging new emerging technologies in key sectors like education, healthcare and urban development

Can you share some examples where the government has used IT to simplify services for the people who have been benefited immensely?

We will be implementing Digital Assembly in association with National e-Vidhan Application (NeVA) project by NIC for a digital platform which is being used by some states like Himanchal Pradesh. Apart from that, some of the services like caste, resident and other utility bill payment system have been implemented digitally. The government is collaborating with various IT companies for more services for citizens in future.

What are your plans to take the Digital India project forward in Odisha?

The government wants to increase internet penetration in every parts of Odisha. Under Bharatnet project, we have implemented optical fibre connection upto Panchayat level and 16 districts out of 30 have already been covered. To take Digital India project forward, we are focusing on improving connectivity, promoting digital payment and literacy. Odisha is a 100 per cent Aadhaar enabled state and the State Resident Data Hub (SRDH) which has already been set up is bringing transparency in public distribution system and other social security benefits schemes of the state.

What are your plans for the Department of Electronics & Information Technology?

We would like to solve all problems of the citizens and focus will be given on better coordination among the departments to get IT expertise from the E&IT department. We have launched 'Mo Sarkar' or 5T project recently which aims to render services to the people at the grass root level. We are also taking feedback from the public randomly to access the progress of this project. The E&IT department is playing a huge role in making the Chief Minister's 5T initiative successful. It will enable the government to reach the doorsteps of people. We are focussing on creation of an ecosystem to meet the expectations of IT, ITES and ESDM firms and offer them a better enabling environment in Odisha for their growth and success. For this we are creating physical, ready-to-use, plug-and-play space for their immediate use.

What is your opinion on using next generation technologies like AI, blockchain, Internet of Things (IoT) and edge computing among others in Odisha?

I am quite optimistic and supportive of the usage of next generation technologies in various systems in Odisha. Currently, we are using various emerging technologies like AI, blockchain, IoT in various applications. In our grievance redressal management system of CM Office, we use AI for categorising sentiments of the social media messages for easy detection. This helps in quick and efficient grouping of all grievances received and forwarding to the concerned departments for redressal. In Paddy Procurement Automation System (P-PAS) application of FS&CW department, the government has implemented a private blockchain technology to validate the farmer ID in another node created using Hyperledger fabric before payment to the farmer.

Other areas of implementation in FS&CW department are currently being explored to realise the true potential of this technology and to make the entire food security value chain more secure, transparent and traceable. We are also in the process using AI enabled face recognition system for smooth entry and exit in the Odisha Secretariat.

A PLEDGE TO BRIDGE THE DIGITAL DIVIDE

In an exclusive interaction, Manoj Kumar Mishra, Secretary, Department of Electronics and Information Technology, Government of Odisha, affirms that digital democracy is the key to empower people in the new world

By Vishwas Dass

Odisha is one of the leading states which is leveraging ICT in a major way. Recently, Odisha Government has unveiled the ambitious 'Mo Sarkar' (My Government) scheme to ensure accountability of government officials in delivering public services. Please brief us on some of the mega ICT projects of the department of Electronics & Information Technology to strengthen citizen services?

Odisha has always been at the forefront at adopting and absorbing technology for the benefit of citizens. But the present government, led by Hon'ble Chief Minister Naveen Patnaik, has put huge focus on technology as the condition for transformation is ideal. The state no longer struggles with the basic infrastructure, nor it gets pegged back massively because of a catastrophic cyclone. Now is the time the state can take giant steps in qualitative services for its citizens. That is where ICT comes in and plays a key role. Mo Sarkar is an ambitious experimentation to effect behavioural changes in government officials while dealing with citizens. It's not just like another grievance handling system, rather it's a system where citizen doesn't run after government officials to lodge complaints. Mo Sarkar makes government run after citizens to get feedback and based on randomised and collective feedback take measures to improve professional and ethical behaviour of government officials involved in delivering services to people. Interestingly, the entire back-end of this humane process is based on very cutting edge IT. We have very big plans to do business process re-engineering in all government processes. The CM has given a talisman to all of us, where we have pledged to believe in goodness of people than in integrity of government processes. With that objective, the aim is to redesign processes, by using IT and innovation, so that a citizen unless mandated by a statute or law, need not visit any government office for services. Service delivery therefore is undergoing a massive transformation in all departments of government and IT department is at the centre of these transformations.

How have the people actually benefited from scores of state-run IT projects?

IT projects must not be seen in isolation. We don't believe in adopting technology for the sake of technology. What sets this state apart is its clear identification of a purpose before we bring in technology to improve efficiency and effectiveness. Over the last few years, the implementation of IT in diverse areas of agriculture produce procurement, mining, college admission among others have been extremely fulfilling and credible, solving real problems. In Odisha, entire college admission takes place online and it's going on for the past many years and is entirely glitch-free. Such transparent process could only be done with right application of IT.

The same case with the mining sector. The software that Odisha implemented in tracking mining produce from source to consumption is praised nationally and being adopted by other mining rich states. In food procurement, the use of IT has been extensive and that has resulted in solving most of procurement issues including reducing harassment of farmers as well as traders and millers. Now, even blockchain and iris authentication have been incorporated to ensure data security and process genuinity, leading to very high satisfaction amongst the farmer community.We do believe that the future needs digital democracy or an inclusive environment. Therefore the appetite of the government to blur the digital divide is immense. With Bharatnet phase two implementation, we expect a huge surge in digital democracy that will make citizens more empowered.

What is the progress on electronics manufacturing in Odisha?

The state has created an Electronics Manufacturing Cluster, just off the city limits of Bhubaneswar. We have four units functioning at this time and a few more proposals are under various stages of approval. But yes, the scale is more medium and small scale and no very large anchor manufacturers has come in yet to the state in this sector. As you know, the macro economic scenario has been depressed since a while and the existing manufacturing units all over the country are undergoing challenging times. Therefore, we don't expect consumer electronics manufacturing to shift operations away from major consumption centres, yet. But there is a very viable silver lining. We are making a specific to ESDM sector policy and expect it to come along with a revamped and one of the best ICT policy in the country by April 2020. With the right policy, developed infrastructure, quality power and water supplies, a great pool of engineering talents in the colleges and ITIs and a stable government, we expect some major investment declarations coming through in the 2020-21 fiscal and we hope to be able to unveil them during the upcoming 'Make In Odisha 3.0' event.

Please shed some light on the state's IT Policy's current status and how it has helped the government to bring in investments into Odisha?

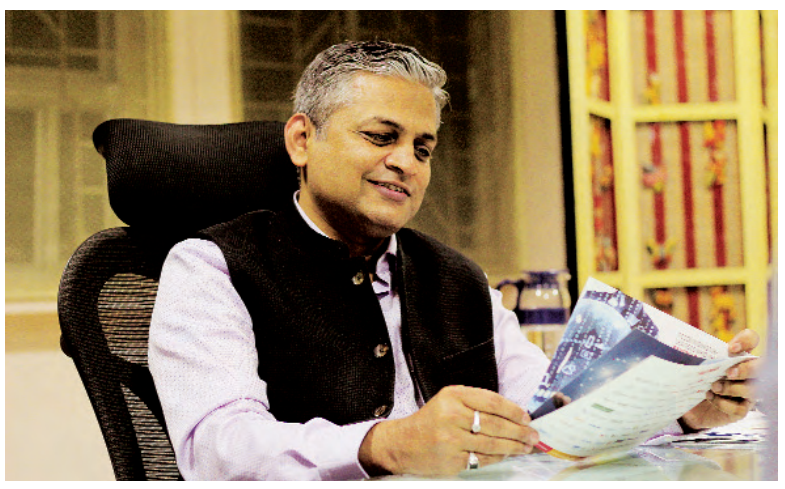
The present ICT Policy of the state has come into effect in 2014-15 and is valid up to April 2020. The policy was ahead of its time at the time it came into being. The expansion of IT industry, mainly on the service side, has been quite good thanks to the industry supportive policy. But, now the time has come to have a revamp of the entire policy, by giving attention to specific areas like ESDM, BPO and New Age Technologies. Come April, the new ICT policy will make the entire IT industry take a serious look at Odisha as a preferred investment destination.

What is the ambitious road-map of the Odisha government to give a boost to employment generation and attract investments by using ICT?

Employment generation is a priority for every state and every country today. The first wave of industrialisation and job creation happened in the metal and mineral sector as Odisha is naturally blessed with ample mineral resources viz coal, iron ore, manganese, bauxite. But now with more and more automaton, job creation in large industries are getting reduced. Now, therefore it's time for the next phase and in the next phase, Odisha is well poised to maximise because it ticks all boxes for development of non-metal industries such as ITES, ESDM and BPO segments.

Today, Odisha has become a strong technical educational hub with IIT, NISER, IIIT, NIT, KIIT, CET and a host of other premium technical institutions churning out more than 20,000 BTech students every year. Coupled with this fact that the state has prioritised skilling and "Skilled in Odisha" in a massively successful manner, the ecosystem is ripe for a major expansion in IT sector in the state. We are also looking at making our students stand apart by equipping them with new age technology to make them more than industry ready.

The government is funding certification training like SAP and establishing centres of excellences in AI, robotics, VR/AR, data analytics, cybersecurity and cloud computing. This will give our students an edge over others in the job market. Similarly, we are also looking at jobs for our non-BTech students by making Odisha a major BPO Hub. We are bringing in a policy which has already started attracting the best of companies like Tech Mahindra and Concentrix.



> We don't believe in adopting technology for the sake of technology. What sets this state apart is its clear identification of a purpose before we bring in technology to improve efficiency and effectiveness

Where do you see the Department of Electronics & Information Technology in the next three years?

We have a vision for the E&IT Department which has short, medium and long term perspectives. In three years, I expect OCAC to become the premier IT implementing agency in the state. We have a clear road map for it and the key would be to enhance its technical bandwidth by getting top knowledge partners and creating more and more partnerships with industry and institutions to have its capacity enhanced for all times to come.

Also, we are betting big on Digital Democracy. Mobile, broadband and cloud services need to be made available at every Gram Panchayat and so also service delivery institutions at the Gram Panchayat level.

We want to be the backbone of the state in terms of its capacity to deliver services to citizens at their doorsteps. At the same time, the department plans to handhold local IT industries, bring in more and more international companies and make the IT space vibrant and unique.

Kindly share some of the challenges involved in taking digital citizen services to the doorsteps of the people? Do you agree with the fact that there is a need for digital literacy among the people in the state?

Challenges are there everywhere in this country. It's the will to do something purposeful for the society and state is what would find solutions to all challenges. We are not really much worried about the challenges as we know and believe we have the strength in the state and leadership of our CM to find solution to every challenge.

As mentioned earlier, it's the talisman of CM Naveen Patnaik, that gives us the clear purpose and also empowers us to do the very best in our respective areas. Digital democracy is the key to empower people in the new world. Without that, no matter what we promise, people will be left behind. We will provide education and skilling at every level, be it a senior citizen wanting to know how to operate a smart phone, or a BTech student wanting to expertise in blockchain. We will cover the entire spectrum with a special focus at areas which are uncovered still. Mobile connectivity, broadband at GP level, CSC centres at every village, training of all kinds at block levels; these are some of the initiatives that will bridge the digital divide, empower citizens and make the government transparent and efficient.

Committed to help Gujarat implement welfare schemes via ICT: NIC

FROM EXECUTION OF the Centre's PM Kisan Yojana to implementation of the Public Distribution System scheme, NIC Gujarat has helped the Vijay Rupani-led government strengthen and roll out citizen services seamlessly. To find out how crucial is NIC's role in extending technological support to the Gujarat Government, **Vishwas Dass** interacts with **PV Mohan Krishnan,** Deputy Director General, NIC Gujarat

Could you brief us about NIC Gujarat's association with the Gujarat Government in implementing various citizen services in an effective manner?

National Informatics Centre (NIC) Gujarat has played a phenomenal role in helping the state government roll out and strengthen several citizen services. Gujarat is one of the leading states in embracing latest technologies for the benefit of people. Being a large state, there are multiple IT support agencies involved in different applications. However, the Gujarat Government relies on NIC when it comes to applications which handle sensitive data. Additionally, NIC with its knowledge of the processes in different government domains, requires minimal time in understanding requirements and providing quickly implementable solutions. This USP has helped NIC to be of help in a state where a dynamic culture exists in terms of policy formulations, which require modifications in work flows of existing systems.

NIC has always been at the forefront in using modern IT tools to launch and simplify services. Please share some of the exceptional projects of NIC Gujarat that has helped the state government in rolling out citizen services in the recent past

NIC is strong in the G2C and G2B service delivery segment. Few of them are critically large systems. The Public Distribution System (PDS) is handled by NIC in the state. The application looks at the distribution side as well as the supply side. Another system for citizen services is the Integrated Online Record of Rights (iORA) and the citizens can avail it online. People can check the status of their applications online. NIC also has a portal, known as Integrated Online Revenue Applications (IORA) through which people can do conversion of land from agriculture to non-agriculture, make any type of land-purchase or conversion related payments. It is an online system where any one can convert his/her land title from agriculture to non-agriculture or pay the premium on the land.

In the health domain, NIC has helped the state health department to put in an online birth and death registration system in place. Initially, NIC had developed a child and mother health tracking system known as 'eMamta' after that it got scaled up at the national level. In fact, from 'eMamta', we were sharing the data with 108 helpline which keeps a track on the health of the expected mothers. According to the data, around 10,000 institutional deliveries took place because of the coordination between 'eMamta' and 108 helpline in a year, which is commendable. It is a good example of how information technology helped the government save the lives of the expecting mothers and the babies by giving them medical assistance when they needed it the most. The Birth & Death Registration System (e-Olakh) has evolved into a comprehensive system catering to urban and rural areas.

> "NIC is strong in the G2C and G2B service delivery segment. Few of them are critically large systems. The Public Distribution System is handled by NIC in the state

Besides, NIC has developed and managing the application for drugs licensing (manufacturing and licensing) under Food & Drugs Control Authority. This application is a G2B space application catering to the pharmaceutical industry. At national level many states are using the software.

We have developed an online job application system which is used by Gujarat Public Service Commission as the state government has mandated 'OJAS' as the primary platform for recruitments.

It is learnt that NIC played a phenomenal role in execution of the Centre's PM Kisan scheme in Gujarat. Agriculture is one area where implementation of welfare schemes for farmers is been done at a significant pace. Could you please share what was the role of NIC Gujarat in helping the state government to implement farmers' welfare schemes?

NIC is indeed privileged to be a part of the execution of the PM Kisan scheme and Gujarat ranked second in the the registerations of beneficiaries after the launch in record time. Though it was a Central Government project, the state government directed NIC Gujarat to launch a state level application so as to ensure quality data going through multiple validations at time of capture itself. It leveraged on the Digital Gujarat framework managed by NIC Gujarat for capturing data from the grass root levels in the state and thus having a wide spread of data capture points. NIC Gujarat developed the State PM Kisan software within a week. The whole machinery of the state government was working for the PM Kisan scheme round the clock in coordination with NIC Gujarat.

NIC is proactively extending its services to the agriculture department of Gujarat Government. All farmer related information is with NIC Gujarat through 'i-Khedut' web portal, which is a repository of information relating to different schemes of the agriculture department. It also has a G2C segment for people. It is 100 per cent scheme management portal for farmers through which they apply for various government-run welfare schemes to get the benefits. That apart, the portal has also brought animal husbandry, fisheries and horticulture departments into its fold to roll out welfare schemes.

NIC Gujarat was again called to deliver when the recent monsoon created hardships for the farmers and the state government announced a monetary benefit scheme for each agriculture land parcel being paid to the main owner of the land.

The application called "Krishi Sahay" was rolled out. About 32 lakh records were captured after launch in December first week. The first lot of funds transfer has also happened.

eTransport MMP ensures transparency and boosts revenue for transport ministry

SETTING AN EFFECTIVE example of how IT can take citizen services to the next level, eTransport MMP executed by National Informatics Centre, has automated operations of Regional Transport Offices across the country, benefiting citizens, the police, vehicle dealers, and other stakeholders

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The Ministry of Road Transport and Highways' (MoRTH) Transport Mission Mode Project (eTransport MMP), executed by National Informatics Centre (NIC), has successfully automated Regional Transport Office (RTO) operations across the country. The project has also achieved a milestone after helped setting up a consolidated nationwide transport database with real-time update and availability.

The eTransport MMP project is an extensive array of G2G, G2B and G2C services, benefiting citizens, transporters, vehicle dealers, manufacturers, police and security agencies, banks, insurance companies, along with various state and Central government departments . It has reached a high maturity level, and centralised, web enabled versions- Vahan 4.0 and Sarathi 4.0 have already been implemented in almost all states, all RTOs of the country, except a few states like Andhra Pradesh, Telangana and Madhya Pradesh as they use a separate software. Further, the project has a central repository in the form of National Register, hosting over 26 crore vehicle records and 17 crore license records. Successful foray has also been made in the area of traffic enforcement solution through eChallan application, and mParivahan, which is a mobile extension of various transport services. The recently launched PUCC, a web-enabled application which caters to the pollution check points across the country, towards ensuring greater pollution compliance of vehicles, has also been a great success.

NIC claims that the project has brought absolute transparency and helped the transport ministry increase its revenue by using modern ICT tools.

The genesis of the eTransport MMP goes back to the year 2000 when Vahan and Sarathi were conceived on the recommendations of MoRTH, the nodal ministry. The project got expanded at a national level when it was included as a Mission Mode Project of National e-Governance Plan (NeGP). Further, a committee, Smart Card Operating System for Transport Applications (SCOSTA) was set up to study the process of defining the standards for registration certificates and driving licenses, on a pan-India level, to ensure interoperability, accuracy and timely availability of information. Initially, the applications and databases were all distributed and localised at the RTO level. In 2015, the centralised, web versions – Vahan4 and Sarathi4 were launched and gradually all legacy applications migrated into this common national platform.

Benefits for common citizens

With the implementation of over 100 citizen-centric and trade-centric services, adoption of e-payment and online appointment facility, citizens can easily do online transactions from anywhere. The need to visit RTOs arise only for essential work such as appearing in learner or driving tests, authenticating documents, or getting physical fitness of vehicles done, and that too, as per pre-scheduled appointments. Some services such as tax payment, getting specific certificates, require no RTO visit at all. As the automobile dealers are using the Vahan4 Dealer Point software, the process of new registration of vehicles do not require any RTO touchpoint. Many state governments are further aligning their business processes with the new technological options to further reduce RTO footfall. Gujarat has started 'Faceless Service' for seven of its online services, implying zero RTO visits for those services. Most of the states have adopted e-payment facility and some have totally done away with cash payment system. About half of the total receipts made through the eTransport applications are through e-payment.

The project has brought in the transparency and accountability in the system. Although there is a lot of ground yet to be covered, in most cases, citizens are facing less hassle in availing services. Leakages in government revenues have substantially reduced. Although it requires a systemic change, starting with enabling legislation down to the implementation details, the Transport Application is equipped to play a significant role in enhancing the quality of services rendered to common citizens through the intervention of appropriate technology and processes.

Joydeep Shome, Senior Technical Director, Transport MMP project, NIC, says, "The project has enhanced efficiency, transparency, accountability and reliability in services, minimised RTO footfall by maximising online services, extended range and quality of G2C, G2B and G2G services, created integrated ecosystem enabling synergies among various stakeholders and facilitated secure data sharing with approved users as per policy."

Key benefits of the project included service improvement. Shome states, "Facility of online application has not only enabled huge number of concurrent transactions but has also enhanced the overall transparency and accountability in the system. Since for most of the processes the payments are made online, cash handling and revenue leakage has reduced to a great extent."

Major impact

The governance impact includes better compliance with norms - eChallan, PUCC. It has enabled connectivity among systems, removed redun-dancies and increased collaborations. Some other impacts include decision support systems for informed decisions, monitoring and forecasting- dashboards, data analytics and AI.

For citizens, the project has increased convenience with anytime, anywhere capabilities- online payments, mParivahan, online services, enhanced responsibility and accountability towards rule compliance, more connected as more informed and involved- dashboards, SMS alerts, online channels, social media and more business opportunities and efficient working owing to seamless, connected systems - National Permit, Trade Certificate, Document Management System, data sharing, etc., initiatives.

Key challenges faced

Initially, convincing various stakeholders and government officials to adopt to the transparent and accountable platform came as a challenge. Subsequently, convincing the authorities for adopting appropriate BPR in line with changing technological progress was also a challenge.

Some other challenges include meeting continuous and high demand to deliver more applications, modules, services from states, other stake-holders, high level of inter-state divergence in rules, processes, practices and consequent need for customisation of applications is a challenge.

Handling infrastructure sizing/number/model (cloud/hardware) issues, on-the-go, to avoid performance bottle-necks in the system.

STPI looks at transforming India into a software product nation

DR OMKAR RAI, DIRECTOR GENERAL, Software Technology Parks of India, in conversation with **Sandhya Michu** shares how an autonomous society like STPI, under the Ministry of Electronics and Information Technology, Government of India, is building a sustainable startup ecosystem with a pool of industry collaborations and chief mentors to make India a software product country

Can you explain the transformation journey of STPI from its inception days ?

STPI was formed in 1991 in order to ease out import and export hiccups. Software exports was not recognised by the customs department and that's when the ministry created this platform to ease this system and we were the only single window to look after it. Secondly, the most challenging aspect at that point of time was to provide internet to the software exporters as many businesses required to get in touch with their counterparts and required high-speed secure internet connections.

STPI was licensed to provide them satellite-based internet gateways and provided small and medium entrepreneurs the opportunity to work with it. The idea was to facilitate import-export, and we did well, if you look at the export made by STPI in 2018-19 it has crossed ₹4 lakh 24 thousand crores and this is almost 50 per cent of the total exports from India. Now the point is that since India has 56 per cent of the total share in outsourcing IT service globally, but in terms of software products, the growth is not significant. As of now in terms of software products market, India is about US$ 512 billion, so the country's share was nearly 8.2 per cent globally, till 2019.

People often raise questions that we do not have Facebook, WhatsApp, Adobe or Google. When STPI was created we were required to create jobs to put our talent in the outsourcing industry. Today, we have about 4.1 million professionals working in the field of IT service industry. The idea is to transform and capitalise the experience and talent of the IT service industry. The entire success the startup industry of India is witnessing is because of the strong IT services in India. Therefore, we are working very closely with MeitY and a large number of stakeholders to build a platform where we can focus on the domain-specific incubators which can be made operational in the most practical and professional manner. STPI is endeavoring to create Centres of Excellence (COEs) and be functional in the emerging technologies as there are more opportunities and values in technologies like AI, IoT. We have launched six COEs in 2019 and 15 more are planned for in 2020.

> "STPI is transforming its incubation services into smart incubation services. We are giving world-class infrastructure services

We want to work for transformation of India as a software product nation.

How do you view the existing startup base in India? What does STPI bring to the table?

Looking at the past of STPI, we have implemented the Infrastructure Service Provider (ISP) Scheme, wherein we incentivised the creation of infrastructure. We created IT Parks that came up in Pune, Hyderabad, Chennai, and Bangalore. Incubators require some infrastructure and so we have created this infrastructure all over the country and have promoted these incubators. In 2020, we are coming up with a new avatar in terms of letter and spirit and it is on the ground rolling. And as a part of the government, we have been interfacing with them since inception. The startup system requires nurturing, collaboration is to be looked at in a big and important way. Collaboration in terms that we provide an environment in which we can depute a veteran of the industry as a chief mentor of the COE.

STPI is planning to make India a product nation. Can you share the roadmap ?

For making India a product nation you have to create startups and they will create products. India is now becoming an electronics manufacturing nation but of course in the value chain we are a little at the middle somewhere, but the component industries is also picking up. And once this evolves, we will be go ahead in terms of electronics manufacturing.

As I said, manufacturing is a challenge for us for many reasons but now things are lined up with state governments, the central government easing the norms, easing of doing business, labour reforms. I think it's all going in a good direction and slowly the knowledge is being built up within India. All these clusters are doing well and it is creating a great foundation for large scale manufacturing.

Additionally, STPI is transforming its incubation services into smart incubation services.We are giving world-class infrastructure services. But we are now looking towards those services through which we can mentor the startups from the initial stage to their product completion. For this, we are going to launch a program which will be called as next-gen incubation program.It is in finalisation stage and very soon we'll be able to launch this at a few centres as a pilot.

In this particular program, we are just providing services through which we can map the lifecycle of the incubator, since the inception of their ideas to the product in the market. The highlight of this model is that we are only looking for collaborations. In our country we do not have proper collaborations - in academies, people are doing research but are not able to market their products in the industry. Basically, STPI is now transforming towards serving the needs of those startups and now we are motivating them to create new products.

Technology led initiatives lead to 50 lakh ton increase in agricultural produce in UP

FOOD GRAIN production in Uttar Pradesh in the last two years has shot up by 50 lakh tons because of DBT i.e. online transfer of agricultural subsidies; IT enabled knowledge extension to farmers on the right crop to grow during a particular season; using holograms, QR codes for seed certification and tracking

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In the area of agriculture, the overall objective of the Government of Uttar Pradesh is to double the farmer's income. All the initiatives are being taken in that direction. Information Technology has played an important role in achieving this goal.

Setting up a portal to directly transfer the subsidies on seeds into the farmer's bank account is one such initiative, which has resulted in numerous benefits. Not only does it plug leakages but also guides the government in future planning. As the farmer details with respect to land holding is mentioned in the portal, the apportioned subsidy is sent to him, and that too it's aligned to the kind of crops he plans to sow for a particular season. This wasn't possible earlier because there was no data available on the land type and the type of crops the farmer is planning to grow for a particular agricultural season. "Thus within the same budget, we are able to provide the same amount of quality seeds to a larger number of farmers," says Amit Mohan Prasad, Principal Secretary, Agriculture, Government of UP. This has led to increased agricultural production in the state.

In the last two to three years, a total of more than one thousand crore of DBT has been transferred to about 60 lakh farmers.

The state has also started using barcode and hologram for the seed certification. This enables the tracking of the seed bags from the farmer who produced the seed and then from the company which processed the seeds to the seller and then the process of certification. This can be captured online end to end. The benefits - the spurious seeds cannot enter the system and only the good quality seeds reaches the farmers.

In case the seeds are found to be of substandard quality, the seed manufacturing companies can be asked to pay the compensation. The result has been achieved in the form of production of certain crops going down because the unscrupulous seed producers withdrew from the market because of them now having to tag their seed bags with QR codes, holograms, etc.

Food grain production in Uttar Pradesh in the last two years has increased by 50 lakh tons because of DBT i.e online transfer of agricultural subsidies; consulting farmers on the right crop to grow during a particular season; using holograms, QR codes for seed certification and tracking. In 2016-17, the food grain production was 558 lakh tons, which shot up to 604 lakh tons in 2018-19. Over two crore farmers have been registered on the farmer portal in Uttar Pradesh.

Technology enabled agricultural extension for farmers

The Uttar Pradesh Government has used the digital medium for agricultural extension. In 2017-18, the state government had launched The Million Farmers' School (TMFS), a program that sought to leverage its agriculture department's 7,500-plus field-level staff strength, by designing an extension module for the rabi (winter-spring) planting season and conducting kisaan pathshalas for the dissemination of scientifically recommended package of practices specific to the crops grown at this time. "Through these pathshalas — training sessions spread over four days of roughly 90 minutes each, undertaken mainly in government primary/junior school buildings accessible to a cluster of villages — we could reach out to a million kisaans during that season. The program was repeated in 2018-19, both during the kharif (monsoon) and rabi cropping seasons," states Prasad.

The state has also implemented a digital extension programme called 'Vaigyanikon ki Baat, Kisaano ke Saath' (scientists-talking-to-farmers). A four-hour program from 4 pm to 7 pm, carried out on June 4, it involved scientists from the Indian Council of Agricultural Research, CIMMYT (International Maize and Wheat Improvement Centre), state agricultural universities and the department itself. They were all reputed breeders and agronomy experts, not just in paddy, maize and kharif pulses and oilseeds, but also sugarcane, fruits and vegetables, aromatic and medicinal plants, and livestock.

In all, 10 scientists and 2,000-odd farmers (about 20-30 of them in every NIC district centre) took part. The entire program was live-streamed. Therefore, even farmers who were not present at the NIC district centres could watch it live on their mobile phones. Even while they could not ask questions, the message certainly reached them. "We have no verified numbers on how many farmers watched, but given the wide publicity given before the event and the ubiquity of smartphones, it may have run to many lakhs. In fact, while the programme itself was going on, we started receiving photographs of men and women watching it live on mobile phones sitting in their villages!," points out Prasad.

How e-governance projects are empowering citizens in Telangana

TELANGANA is one of the leading states in India for implementing e-governance projects. There is a plethora of initiatives rolled out for citizen empowerment as well as the smooth running of the various government departments in the state. To know more, **Moumita Deb Choudhury** of *Express Computer* had a conversation with **G T Venkateshwar Rao**, Commissioner, ESD, ITE&C Department, Govt of Telangana

How is Telangana Government utilising IT to revolutionise the way citizen services are being delivered?

Telangana Government has always been a frontrunner with respect to the utilisation of IT for delivery of citizen services, through many channels. The majority of which is through MeeSeva centres, web based MeeSeva and an app based channel called T App Folio.

For delivering e-governance through a web based platform, MeeSeva portal currently boasts of over 550 services in its platform and is one of the most widely used online G2C service delivery platform in the country. MeeSeva centres are a frontend point of the MeeSeva platform itself and there are around 4500 centres scattered across Telangana. These are being governed majorly by Village Level Entrepreneurs (VLEs) and provide an alternative to rural citizens not well versed in the usage of web based applications.

M-governance delivered through an App called T App Folio, is a recent release of the Telangana Government and aims to radicalise how services are being delivered in the state. With the advent of smartphones in India and it's wide availability, it was deemed necessary to create an app based service platform which will act as an anytime, anywhere solution to G2C service delivery. It currently hosts around 210+ services and is in a process of rapid expansion as well.

T Wallet, is a digital wallet which citizens can use to make payments for both government and private transactions to avail services. Citizens can also use T Wallet to transfer funds to bank accounts through IMPS. As financial inclusion of rural population was the primary focus of T Wallet, it has been made available in three languages i.e. English, Telugu and Urdu.

What progress have you seen in the past years for e-governance?

The progress we have witnessed over the years with e-governance include increased adoption of emerging technologies in citizen service delivery by different departments; increased appreciation of e-governance and m-governance initiatives by government departments; increased citizen awareness and adoption about ICT initiatives; and the department's willingness to revamp old service flows for ICT based better ones - PLCS, RTDAI, etc.

Please discuss some of the major initiatives undertaken for the benefit of the citizens?

Apart from MeeSeva, T App Folio, T Wallet, one the major initatives is Hyderabad City Wi-Fi Project, for which a pilot has been launched to provide Wi-Fi connectivity at 200 public locations with three service providers. Over 3,000 such locations have been identified and currently, there are about 2,500 locations which have active Wi-Fi connectivity.

Then there is transport department M-Wallet called RTA M-Wallet which has been developed to store statutory documents like registration certificate, driving license, etc., in digital form. The centralised data architecture of the Transport Department is utilised to fetch the details of documents on the smartphone. The app is free to download and use. Citizen specific documents are displayed on any mobile using the login facility. The app helps the enforcing authority for identification of the document's genuineness and provides ease to the citizens during on-road checking. With 20 lakh downloads, this is one of the highest downloaded government apps.

How and in what way are you adopting next level technologies like, cloud, IoT, blockchain and AI?

The Real Time Digital Authentication of Identity (RTDAI) involves the usage of AI, ML, DL and big data. The RTDAI requires a three-factor authentication system to be in place for a citizen be completely authenticated and have his identity verified. This three factor system includes using machine learning based demographic check, a Deep Learning based photo comparison check and an artificial intelligence engine based liveness check. This system of RTDAI has multiple potential use cases in citizen service delivery and the first successfully tested use case was that of authenticating pensioners for their life certificate.

Pensioners can submit their life certificate through their smartphone from their home without visiting any office to verify their aliveness and authenticate their demographics, RTDAI lets them complete this entire process through T App Folio's PLCS module itself. This has drastically increased citizen convenience and is one of the first successfully tested use cases of RTDAI. 10 per cent of the pensioners have used this system for submitting annual life certificates this year. This is first of its kind solution in the country and perhaps in the world.

The pilot on using blockchain in registration is implemented in coordination with CDAC. A blockchain based application in chit-fund business is launched, while the use of blockchain in vehicle registration and in educational certificates is being explored.

Plans are also underway of using other emerging technologies like big data, drones, IoT, cloud, etc., in a big way.

What are your plans for the coming five years?

Telangana is constantly looking to explore and identify new and emerging technologies and their potential use cases in effective governance. With regards to that and in line with current trends, there are some potential initiatives that the government is exploring, which includes document less governance- for minimising the use of paper in all aspects of governance. Implementation of E-Office in government offices.

We look to boost up M-Governance to provision all government services over mobile apps. Also, expanding the scope of T App Folio with all government services and mobile apps being seamlessly integrated.

There are plans to use big data in all government departments with the objectives of revenue augmentation; cost rationalisation; and smart governance.

Data driven governance is another focus to provide dashboards for every government department to enable decision makers to make informed decisions. Also, intensive use of data analytics in improving the service delivery. The focus is on using emerging technologies like AL, ML, DL for the creation of effective facial authentication technology for effective delivery of government services; use AI in automating and augmenting internal processes within departments and leverage ML and DL for demographic authentication and verification.

Do you see any challenges in adopting cutting edge technologies?

There are certain challenges like citizen adoption, acceptance and awareness; educating concerned departments about the advantages of e-governance and it's further implementation; availability of service providers to actually provide effective solutions. Since some of these emerging technologies have not yet been implemented on a large scale, the cost associated with them is high. When it comes to implementation, since the technologies being used in creating these services have not fully matured yet, they come with a certain degree of uncertainty and technical challenges. Owing to this, departments could still be reluctant in their adoption.

Blockchain, bots doing top rounds at the Dept of Labour, Karnataka

DESPITE CHALLENGES OF technology implementations, the Dept of Labour in Karnataka has its agenda on priority

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The Labour Department of Karnataka is bolstering itself to provide better services and hence has been increasingly introducing IT initiatives over the years. The department's online services have touched upon many and benefitted them. The online portal aims to facilitate registration, issue of licences and renewal and amendment of registration and licences, which is under the various Acts of the state and Central labour laws and regulations that are being enforced by the Department of Labour of the Government of Karnataka. The facilities include issuance of registration certificate, amendment of registration certificate, issuance of renewal of licences, submission of annual returns by the employer, quarterly returns, renewal of registration certificate, issuance of new licence, amendment of licence, etc.

The department has been leveraging IT to revolutionise labour and employment issues and has taken important IT initiatives to benefit the employee at various organisations and the citizens at large.

Although there are obstacles in implementing technology but the department has it as its agenda on priority.

"We are attempting to leverage IT. But, there are serious hurdles. IT solutions need to go through trial and error. But, doing trial in the government is prohibited as loss of public fundsis seen with criminal lens. So, seldom people push their agenda on IT systems," says P Manivannan, Secretary, Department of Labour, Government of Karnataka.

"However, we have taken up some IT projects, thanks to the direction from the Honourable CM and the Labour Minister of Karnataka. The initiatives include 24x7 professional helpline with CRM software and soon, it will have bots handing complaints and mandatory online services for employers. Out of the 30 important services that we provide, 10 are already online. Next 10 will be online by March this year, and the last 10 by next financial year. The welfare schemes in the construction board are computerised and we are giving it through DBT," adds Manivannan.

> The initiatives include 24x7 professional helpline with CRM software and soon, it will have bots handing complaints and mandatory online services for employers
>
> **P Manivannan,**
> Secretary,
> Department of Labour,
> Government of Karnataka

The department has been leveraging IT to revolutionise labour and employment issues

The department is also implementing some cutting-edge technologies."Our first blockchain project is on the Ashadeepa society, this is focused on providing employment to the people belonging to the Scheduled Caste and Scheduled Tribe communities. The entire flow of funds is planned to be on a blockchain platform. The NGO CITAG, in association with BitGram is doing the project for us. We hope to unveil it by next financial year," informs Manivannan.

When asked how they see the progress in the past five years with the help of IT, Manivannan answers, "IT moves much faster than the speed of the government, so we are always trying to catch up investing in manpower and machines. We do see progress, but not in pace with how the technology grows."

He also pointsout that the National Seminar recently hosted by XIME on 'Make in India' was important, and acted as lens to focus the energies on a theme. Manivannan informs that in the next five years the department plans to create a mobile app that connects the employers and employees; provides cashless health coverage using prepaid health debit cards; and crèches for all children of migrant labourers.

Tamil Nadu implements blockchain for operational efficiency

THE IT DEPARTMENT in Tamil Nadu has taken a call to implement Blockchain-as-a-Service, with no department now needing to rely on a separate node, says **Dr Santhosh Babu**, Principal Secretary to Government, Information Technology Department, Tamil Nadu

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Tamil Nadu has adopted Blockchain-as-a-Service model, wherein the departments will not have separate nodes. The government will build the blockchain backbone along with the partners and the departments will use them as a service. Over ₹40 crore has been spent on the project. No PoC or experimentations have been done.

The unique differentiator with blockchain is it is immutable, which is precisely the challenge faced by many departments in the government - that data, information or records are being fudged for vested interests. For example, the land records department can use blockchain to its advantage by storing land related records, which cannot be manipulated. Currently, inspite of technology the records are interferred with for personal benefits. They are centralised and can be changed by a particular person or even by hacking into the server. However blockchain is a decentralised technology, which accepts a change only after accepting consent from the relevant stakeholders.

"Experience says, legacy technology will prove as a hindrance in implementing blockchain, but the IT department has taken a stand to go ahead with implementing the technology and solve the challenges as they approach," states Dr Santhosh Babu, Principal Secretary to Government, Information Technology Department, Tamil Nadu.

The government has established a Centre of Excellence (CoE) in the Tamil Nadu eGovernance Department. "Every department and state government is undertaking e-governance initiatives, but apart from blockchain there are many emerging technologies that can take e-governance to the next level, like AI, IoT, etc. The government has selected over eight experts from the market to work in the CoE. They are being employed full-time with the government on a handsome salary to ensure their retention," states Dr Babu, adding that the IT department requests other departments to share the challenges they are facing, which the CoE takes up and ascertains how technology can find a way out.

> Experience says, legacy technology is a hindrance in implementing blockchain, but the IT department has taken a stand to go ahead and solve the challenges as they approach
>
> **Dr Santhosh Babu,**
> Principal Secretary to Govt,
> Information Technology
> Department, Tamil Nadu

Tamil Nadu has adopted Blockchain-as-a-Service model

Developing an ecosystem for emerging tech in Telangana

THE EMERGING TECHNOLOGIES Wing of ITE&C Department of Government of Telangana is proactively driving the adoption of technologies like AI/ML, blockchain, drones, cloud, IoT and cybersecurity

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Back in 2016, Telangana had released its ICT policy and had envisioned to extensively use emerging technologies. To operationalise this vision, Rama Devi Lanka, Director - Emerging Technologies, Officer on Special Duty, ITE&C Department, Government of Telangana. The ET Wing acts as a nodal agency which proactively drives adoption of emerging technologies across user departments in Telangana, developing innovative government solutions to help citizens and preferentially procures solution from start-ups.

"The Emerging Technologies Wing has twin objectives. We take up various initiatives to develop the ecosystem for emerging technologies in Telangana, and we proactively drive the adoption of emerging technologies like AI/ML, blockchain, drones, cloud, IoT, cybersecurity, e-Waste, etc," says Lanka.

KT Rama Rao, Minister of IT, Telangana has declared 2020 as the year of AI. "We have planned a calendar of events, grand challenges, conferences, skilling programs, AI product labs, cloud computing as a service etc. Key projects last year were in law enforcement, crowd counting, person tracking, criminal records synchronisation. We also implemented chatbots in RTA and Tourism Departments," says Lanka.

Artificial Intelligence

Several AI initiatives have been taken by the government:

- Apparel & Textile Parks of Telangana are building an AI powered solution, prepared by labelling pixels, to protect weaver and consumer interests for hand loom against power-loom.
- The other initiatives include, AI Driven Quality Assaying of Agricultural Commodities, whereby the pilot aims at easing the process of sale of farm produce, bring in transparency and help farmers get fair valuation for their produce. Also, improve adoption of eNAM platform for long distance commodity trade.
- Automatic detection, documentation, notification and action for better traffic and roads.
- GRS Medha Chatbot is used to avail seamless services, like eStamps, payments, registrations, EC and CC, etc., to the citizens.
- Know Your SRO is a service which allows citizens to search relevant SRO by just providing the chatbot with their property or marriage location.
- Popular FAQs helps citizens with answers to very frequently asked questions on different acts, rules, procedures, and a plethora of other services offered by IGRS.

Apart from the above, the Telangana Government is also working on urban flood modelling, and other IoT projects. These projects ensure the government's efforts as a first buyer, to support the growth of blockchain technology in the state.

Usage of drones

The usage of drone and its technology is spread out across sectors and industries, ranging from construction, agriculture, healthcare, police, insurance, to journalism and cinematography. "India tops the list of drone-importing countries. Government of Telangana understands the potential of innovation with drones. We are working on several projects in mining, precision agriculture, forest surveillance and medicine from the sky – a life saving pilot project in Telangana for delivering essential medicines, vaccines, blood and diagnostic samples," says Lanka.

One of the projects is Volumetric Analysis and Extent Analysis of mines using drones, whereby an end to end solution to survey, monitor and manage the mining leases/quarry leases located in various parts of Telangana state.

The other project is Integrated Crop Management System using drones (precision agriculture). This is to provide farmers with superior solutions using emerging technologies to address challenges of crop growth and to improve output quantity and quality parameters. To understand the problems during crop growth with precision and immediately advise the farmer, it was proposed to use UAVs mounted with RGB and multispectral sensors for monitoring.

For Medicine from the Sky, the Government of Telangana, World Economic Forum and Apollo Hospitals have collaborated to come up with an initial report, which will be used to run India's first medical delivery project in Telangana.

Also, another project is Forest Surveillance with drones which will help calculate height of each tree (using Stereo-pair Data); carry out noiseless search operations such as capturing information on tigers /leopard that strayed into different areas; calculate height of each tree etc.

> Blockchain technology helps to achieve a high degree of transparency, security and immutability compared to traditional databases. It enables secure data sharing and can help establish transparent government-citizen relations
>
> **Rama Devi Lanka,**
> Director -Emerging Technologies, Officer on Special Duty, ITE&C Department, Government of Telangana

> Government of Telangana understands the potential of innovation with drones

Blockchain technology

"Blockchain technology helps to achieve a high degree of transparency, security and immutability compared to traditional databases. It enables secure data sharing and can help establish transparent government-citizen relations," informs Lanka.

There are currently up to ten blockchain use-case projects at different stages of implementation. They include T Chit, a project that leveraged blockchain to address many of the challenges that reduce the information, innovation and interaction frictions.

Blockchain is used for verifying students' credentials. Student Record Data stored using traditional methods can be tampered, which leads to fraud in educational sector, so data is required to be immutable. Blockchain gives the benefit of immutability. Also, being a distributed ledger, it facilitates data sharing between departments. Again, this technology is used for property records management.

The other initiatives of blockchain include Credit Cooperative: Streenidhi; Anti-Counterfeiting for Pharmaceuticals; Civil Supplies Public Distribution System; P2P Energy Exchange Use Case; Flexibility Aggregator Use Case; Blockchain in CCTNS - Law Enforcement; and Vehicle Lifecycle Management.

Cybersecurity

Complications from cyber-attacks may threaten lives, economy, and national security. Rapid identification, information exchange, investigation and coordinated response and remediation can mitigate the damage caused by malicious cyberspace activity. ITE&C Department in partnership with Data Security Council of India (DSCI) has established a ₹22 crores Centre of Excellence to build a cybersecurity innovation ecosystem and safeguard citizens.

E-Waste

In 2016, India was ranked among one of the top five countries in e-waste generation, with an estimated 1.85 million tonnes generated annually. E-waste causes toxic emissions and poses several health hazards. ITE&C Department in partnership with MeitY has established a ₹36 cr Centre of Excellence of e-Waste in C-MET, Hyderabad to nurture innovation, entrepreneurship, and capability building in e-Waste management.

FEATURE

Future tech trends to fuel growth at Edelweiss General Insurance

SHARED MOBILITY, SMART VEHICLES, electric vehicles and a prevention-based approach to contribute significantly to sustainable growth at Edelweiss General Insurance, says **Shanai Ghosh**, ED and CEO, Edelweiss General Insurance

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Edelweiss General Insurance (EGI) has built a sustainable and customer-centric technology architecture that enables seamless integrations with multiple solutions and is highly scalable. As the first cloud native insurer in India, EGI is a complete micro-services and API driven platform. "We have worked on getting our technology foundation right. While most companies adopt an outside-in approach – the front-end applications followed by the backend, we opted to do the reverse. This has helped us build a robust foundation, adaptable for scaling up faster," says Shanai Ghosh, ED and CEO, Edelweiss General Insurance. The company is one of the first in India to have implemented an integrated application portfolio across the entire lifecycle of the customer when it comes to insurance. It provides a holistic view of data, while parallelly enabling an integrated view of the customer lifecycle.

EGI has also adopted the entire SAP suite and is probably the only company in South Asia to host it over a virtual private cloud. This is the kind of future-ready technology architecture built by the company. "It gives us agility, flexibility, scalability and cost efficiency. Cloud offers many other applications like analytics, API and programming capabilities, which are most suitable for a new age insurer like us," says Ghosh.

The general insurer is also looking at voice-based UI as a platform, because it is a very natural way to communicate. Companies today are looking to adapt to ever-evolving customer needs and are adopting all forms of communication channels. In that context, voice stands out as a natural form of interaction, enabling a frictionless experience. The digital platform at EGI, allows customers to buy insurance policies on the fly, based on what and how much they remember and not on the compulsion of referring to documents.

Digital provides efficiencies in operating models

In the insurance sector, the competitive environment in India, has matured. While there are companies who are online-only, most of them operate on a hybrid model comprising online and offline stakeholders like agents, brokers, banca channels, etc. The competition drives all companies to bring their best game to the table. EGI has an operating model which is completely digital, even for the interactions with ecosystem players like agents, brokers, advisors, etc. There is no paper involved. "While digital-only is still just over five per cent of the market, we have decided to have a digital operating model with distributors over and above the digital-only mode. EGI has digitally empowered other stakeholders to garner and service more customers through the digital medium," says Ghosh.

For EGI, there are many markets under the general insurance space and even sub-markets under individual markets. For example, private cars are a sub-market under the motor category and the company will heavily use analytics for creating many such sub-markets that are likely to grow over time and as yet remain unidentified by competitors. "Our focus in the first three-four years is to build a strong technology platform which is intelligent enough to give us insights into multiple markets thus far untapped in the area of general insurance," informs Ghosh.

The company has been able to gather pace in acquiring customers through the digital-only channel. "On a monthly basis, over 20 per cent of our customers are acquired through digital channels. This includes acquisition through web aggregators, as well," says Ghosh. The rest of the business is also conducted on a digital platform, where the intermediary acquires and services the customers through the online channel.

> We have worked on getting our technology foundation right. While most companies adopt an outside-in approach – the front-end applications followed by the backend, we opted to do the reverse. This has helped us build a robust foundation, adaptable for scaling up faster
>
> **Shanai Ghosh,**
> ED and CEO, Edelweiss General Insurance

'Prevention' - a key aspect of tech powered insurance products

Data proves that better driving behaviour leads to lower accidents and living a healthy lifestyle and associated wellness activities, can result in lower long-term health claims. Both themes are preventive in nature and the company has already taken the first steps in having insurance products in this direction.

"We had filed an app-based telematics product in the area of motor insurance for which we have received the requisite IRDAI approvals recently. The basic construct of this product, stems from the fact that customers need not buy any OD product for a car or a two-wheeler, etc., and mandatory liability product buying, will fulfil all necessary motor insurance requirements. It will cover all the vehicles driven by the customer. It is a multi-vehicle policy, based on users, usage, etc. with several benefits packed together. The policy itself is an app and hence there is no need to buy multiple policies for multiple vehicles. This is an apt product for the shared mobility era that is emerging. Even if the owner rents the vehicle, he can do it on a single insurance policy. These are the kind of innovative products we are aiming to develop that will effectively cater to future trends such as shared mobility, smart vehicles and electric vehicles," shares Ghosh. EGI has collaborated with Revolt - an app-based bike as well.

EGI's future pipeline also includes products which will relate with stakeholders in the healthcare space and comprises health insurance that will be based on incentivising and collaborating with customers based on their health and wellness activities.

Cloud for digital governance

EXPRESS COMPUTER, in association with Microsoft India, had recently organised Cloud for Digital Governance: The Tour, at Gandhinagar, focusing on how ICT can play a pivotal role in helping citizens get better services

Saurabhbhai Patel, Energy Minister, Government of Gujarat, delivering the Chief Guest address

Training session of Azure 900 certification

Amit Prakash Yadav, Regional Commissioner of Municipalities, Government of Gujarat, giving the special address

Microsoft training session in progress

Nitin Tatu, DGM, GIL, Government of Gujarat (centre) speaking in a panel discussion

Panelists pose for a picture after the panel discussion comes to an end

Manish Prakash, ED, Public Sector, Microsoft India

A full house

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To recognise Gujarat government's efforts in embracing information technology to simplify citizen services and discuss how ICT can play a pivotal role to help citizens get better services, *Express Computer* in association with Microsoft India, organised Cloud for Digital Governance: The Tour, at Gandhinagar, on December 17. In addition to this, a skill development workshop was also imparted to over 150 IT cadre staff of various departments of the state government and NIC during the event.

The one-day conference is part of the Cloud for Digital Governance national program, unveiled by Microsoft in August this year, to equip government staff in charge of IT across the country with critical Artificial Intelligence (AI) and intelligent cloud computing skills. According to Microsoft, the initiative aims to conduct a series of physical and virtual workshops and train 5,000 personnel over a period of 12 months to help them leverage AI and secure cloud technology for efficient, transparent and productive governance.

Saurabhbhai Patel, Energy Minister, Government of Gujarat, was the chief guest at the conference, who said that in the last five years a lot of thrust has been given to Prime Minister Narendra Modi's Digital India initiative for which the PM has made extensive efforts to take India to new heights. He said that the PM knows where the world is going and wanted India to take the lead.

Patel remarked that Gujarat has always been at the forefront as far as industrialisation is concerned. "Today, if we want to become a five trillion USD economy, this is one sector where we will have to push very hard and a lot of investments and human resources and skill empowerment would be needed," he stated.

According to Patel, there was competition among the states to achieve what others have not done. He said India's strength lies in its young population. "India is much better compared to other nations and it gives an edge to the country. All of the countries with young population have taken the lead in the field of IT. Similarly, India has to take a lead," he said. The energy minister underscored the importance of skill development training of the youth, particularly those who are associated with the Gujarat Government.

He further said that every Panchayat in Gujarat has got some young boys and girls who help the villagers apply for government-run welfare schemes and take benefits of those schemes. The young generation has been enlightened not only in urban but in rural parts as well. He highlighted IT initiatives of the Gujarat Government and said that Gujarat's energy department was first in the country to have an ERP system in place. Every system like purchase and accounts of the Energy Department was online. Patel said people talk of switching to renewable energy and advocate that thermal energy should not be preferred. "The plants can not be shut down overnight. The plants have to be managed in such a way that the supply and demand, every minute is equal," he pointed out.

Manish Prakash, Executive Director, Public Sector, Microsoft India said that the conference is the first step that Microsoft is taking to improve the partnership between the Government of India and Microsoft, in building AI and cloud-led economy in different states.

He mentioned that Microsoft has a deep relationship with the Gujarat Government and it exists not just in terms of its products and services but because of its association with various NGOs for skilling manpower of various departments of the government, to improve education and healthcare services in the state.

Prakash said, "Today, we are talking about skilling of government officials and employees to build future ready skill set that is so essential in our lives. We talk about the fourth industrial revolution. The first one started with the invention of steam power. The second one happened with electricity and the third with electronics, and all of this took 60-70 years. Today we are getting into the fourth industrial revolution, which is massively different from what we have seen in our previous lives. The fourth industrial revolution is coming together by the connectedness of physical and biological world together. Men and machines are going to be connected with 'Phygital' layer which is physical and digital layer. At the heart of this, it created enormous opportunities and one such leverage that we have today is artificial intelligence. whether its IoT, nano tech quantum computing or genetic engineering," Prakash said.

He said India has immense potential to achieve the dream of becoming a five trillion USD economy where AI could be leveraged, not just to build driver-less cars and drone technology, but AI has the power to solve problems of sustainability and development. "It can solve issues related to economic inclusion, poverty, food production, better healthcare and governance as well. The expectations of the citizens in terms of governance are massive which can be addressed by AI," he added.

Adding to this, Amit Prakash Yadav, Regional Commissioner of Municipalities, Government of Gujarat, said people that have a fear that AI would lead to loss of employment but it is not the case. "It has been discussed at this forum that the AI would create around 700 million jobs. There is an urgent need of sensitising people that a modern technology like AI is not going to snatch someone's job rather it would serve as an enabler to employment creation," he remarked.

Yadav said that AI can be used in various domains like the healthcare sector. He cited an example of tuberculosis (TB) and said it is one of the diseases because of which thousands of people die every year. He suggested that the government can use AI to treat TB patients. Similarly, this technology can be used in traffic department as well. "We can create a mechanism through AI to manage traffic jams. Smart Cities project under Digital India initiative is one such sector where AI can be used effectively. The government is slated to invest ₹2 lakh crore in Smart Cities project which deals with humongous data. Gujarat is one such state where over 50 per cent of people live in urban clusters where this technology can play a major role in improving citizen services," he affirmed.

During the panel discussion titled "Responsible AI with inclusive approach: For urban rural and people with disability", PV Mohan Krishnan, Deputy Director General, NIC Gujarat, said that AI is not a monolithic thing that can be interpreted in one way. He mentioned that the AI in judiciary is an example where presently they are looking at translating complex judicial phrases from English to other languages. Sentence constructs will require AI interventions, Mohan Krishnan said.

"Another example is we have different e-Gov systems which are workflow based. A few examples include people availing caste, birth and death, BPL certificates through Digital Gujarat. There are many routine rule based approvals given which be amenable to AI intervention and quicken the process," he added.

Nitin Tatu, DGM, Gujarat Informatics Limited pointed out that AI is a technology which is being embraced by the government slowly, but there is huge possibilities in different sectors in the government to bring out benefits for the citizens. AI can be used for various works like text, pictures or satellite imagery for the benefit of farmers and for the law enforcement. "As an instance, we have installed many CCTVs across the state, the live feed can be fed into servers and used to find out traffic violators to save significant man hours needed in the job," he informed.

Rohit Mehta, Advisor, Department of School Education, Government of Gujarat, said that Gujarat's education department is the biggest in India, which has 54,000 schools, around 4.5 lakh teachers and 1.15 crore students. "Almost 51 per cent of the Gujarat Government employees are with the education department and around 19 per cent revenue budget is allocated to it. When you have such a huge manpower, if you do not use the data productively, the data collected will be humongous. The department conducts annual exams of 43 lakh students every six months and one can understand the massive data involved in the exercise. If the data is not used and analysed intelligently, it will not make any difference to the people's lives."

Odisha aspires to become a true Digital State

MANOJ MISHRA, SECRETARY, Electronics and IT Department, Govt of Odisha, underscores that it is the state government which is taking crucial services to the people, rather than citizens making rounds of government offices to get the services

Ashok Panda, Minister of State, Electronics and IT, Odisha Govt

Manoj Kumar Mishra, Secretary, Department of Electronics and Information Technology, Government of Odisha

Manish Prakash, Executive Director, Public Sector, Microsoft India

Nitin Jawale, MD, IPICOL, Government of Odisha

Pratibha Singh, DDG, Odisha NIC

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MK Pattnaik, CEO, OCAC, Odisha Govt

Gopal Nayak, Director, IIIT-Bhubaneswar

The audience listens to the key speakers in the inaugural session

Audience at the event

Panel discussion in progress

Azure 900 certification training being conducted at Cloud for Digital Governance Tour

The Cloud for Digital Governance: The Tour in Bhubaneswar, organised by Express Computer and Microsoft India on December 20, 2019 saw Ashok Chandra Panda, Minister of State, Science and Technology, Government of Odisha, stress on the need of proactively using information technology tools for simplifying services for people. He said that the Odisha Government is extensively using IT to ensure citizen services are improved and strengthened for every citizen.

Panda said that the Naveen Patnaik-led government is strongly committed to bring happiness on the faces of citizens by making government services easy and accessible. "The government wants people should not face difficulties in availing services," he asserted.

The minister said that the IT Policy of Odisha attempts to put in place a favourable environment for investment through strategic initiatives, concessions and facilitation so that Odisha could capitalise on the growth opportunities in the IT/ITES sector and eventually become one of the leading states in the country. The policy also aims at encouraging the young talent pool to acquire higher degree of employability skills in the knowledge economy.

He that said the ICT Policy 2014 has a vision to develop IT/ITES/ESDM (Electronics System Design and Manufacturing) industries for inclusive growth and employment in Odisha, and leverage IT & ITES in governance to transform the state to a knowledge driven welfare society for improving the daily life of citizens.

Panda said that he was elated to learn that the conference aims to deliver critical Artificial Intelligence (AI) and intelligent cloud computing skills to the government officials in charge of IT and the initiative comprises of a series of physical and virtual workshops, and aims to train 5,000 personnel over a period of 12 months.

Manish Prakash, Executive Director, Public Sector, Microsoft India said that in 2017, digital technologies impacted a mere eight per cent of GDP in India. Fast forward it to 2021, it would be 60 per cent and AI will play an important role in the area of digital technologies. AI, IoT, genetic engineering and nano technology will be the characteristics of the next industrial revolution and AI is empowering these technologies, he stated. According to Prakash, more than AI enabling driverless cars, drones, gizmos, etc, it will enable nations to meet their sustainable development goals (SDGs). It will address problems of economic inclusion, climate change, poverty alleviation, improving food production, agriculture and create better healthcare and wellness facilities for the masses. He mentioned that AI will change the way people interact, and use government services. The various schemes announced by the Central Government - Digital India, Startup India, JAM, Smart Cities, creating a US$ 5 trillion economy, inherently has an AI led policy intervention. The states will have to prepare themselves adopting a three way approach to harness the benefits of AI. "The policies and institutional framework will have to be setup, followed by inviting a friendly atmosphere for startups, VCs and finally empowering the human resource with skill development programs to unleash the true potential of AI in any state," said Prakash.Trust and ethics is an important component in the systems and policy frameworks adopted by states. There are three elements to it. Firstly, it means the data generated from different technologies should be secured and cannot be tampered with. "Microsoft invests over a US$ 1 billion annually. Trust also qualifies as the data of the person/organisation/ government is under their control. It remains private to the truest sense. Thirdly, the data is managed as per the laws of the land," informed Prakash. Given the experience of Microsoft for operating in many countries globally, the company understands the importance of law abidance," he said.

Manoj Kumar Mishra, Secretary, Department of Electronics and Information Technology, Government of Odisha said that the state government has 45 departments with 400 odd processes and the government is trying to cut down the processes to one tenth or one twentieth by using ICT. He spoke about how many states, including Odisha, was grappling with the Motor Vehicle Act Amendment this year. He said that the only way the government can achieve transformational changes in processes is by using technology.

According to him, the department has facilitated renewal of licences from anywhere in the state and the applicant need not visit the RTO where the licence was originally issued. He cited examples of how earlier people in rural parts had to struggle a lot to deposit their holding tax/land tax at government offices which is a miniscule amount. He said that one must be surprised to know that the holding tax is such a small amount that a poor person, who used to visit government offices to pay this, might have had to spend ₹500 just to commute.

Mishra said this was completely unnecessary to run from pillar to post to deposit the tax and because of this reason, the government had introduced an online system and made sure people do not visit government offices in person for such a small work. Unless mandated by some act or provision, people should never come to the government offices, he said. The 5T project is launched for this purpose only, which has enhanced the appetite for technology for the government. The Odisha Government is trying to approach citizens to resolve their grievances. Now the government is looking at the people to have their feedback on the Mo Sarkar initiative of Hon'ble CM Naveen Patnaik. He said Odisha really aspires to become a role model for others in terms of usage of IT for service delivery.

Dr Nitin Jawale, MD, IPICOL, Government of Odisha said IPICOL is using technology in a major way for GO SWIFT application to render services to the investors investing in Odisha. One of the major requirements of the Business Reform Action Plan of the Government of India is about ranking of different states on different parameters and Odisha is aspiring to be the in the list of top 10 states this year. The Centre has mandated to make efforts to avoid human interface in citizen services. As an instance, online building plan approval is being implemented across India, which envisages issuance of such plans digitally to avoid people making multiple visits of government offices to get this work done. Odisha Government wants to achieve this level of proficiency in service delivery and this is possible only through infusion of technology. When it comes to governance, ICT plays an important role and Odisha is among the few states which have taken technology to the new level. The single window created for the investors in Odisha has garnered a lot of positive response from the stakeholders. Jawale said that various departments of the state government are trying to strengthen coordination among themselves to simplify services for the citizens via ICT.

Pratibha Singh, DDG and SIO, NIC Odisha said the Union Government through Ministry of Electronics and Information Technology (MeiTY) is implementing Government of India Cloud whose strategic paper was issued in 2013. It defined the vision, policy and objectives for adopting the cloud for accelerating service delivery while optimising government spending for new projects and migrating existing projects. It also helped in easy replication, development and deployment of eGovernance applications and follow standards in interoperable best practices. Integrated infrastructure of the Central and state governments would provide the backbone for the cloud following common standards, guidelines and protocols. The government cloud would have a single window for service delivery even though having discreet cloud computing environment spread across the country. This would also be governed by standards and ever improving set of security guidelines for privacy and security of applications and data.

It was therefore provided in the paper that the Central and state government combined infrastructure would augment the government's capability of providing cloud services based on the state wide area network, national knowledge network, state data centre, NOFN, etc. NIC is a front runner is facilitating e-governance initiatives and has set up state of the art cloud on National Date Centres in Delhi, Hyderabad, Pune and now in Bhubaneswar. She informed that the MeiTY secretary has launched NIC's Open Cloud Public Platform under Meghraj banner.

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Every year, e-governance thought leaders across states and the centre set benchmarks to better governance using technology. For instance:

- The state of Odisha which used technology to save millions of lives during natural disasters
- The Madhya Pradesh Government which launched the country's first cloud-based Integrated Control and Command Centre (ICCC)
- The police of Uttar Pradesh which is using AI to detect criminals

There are numerous examples across India - in multiple technology areas such as Blockchain and Big Data. At the Indian Express Group, we have been part of this journey since the beginning and are excited to be part of this huge digital transformation.

Hence, to recognize and capture innovative best practices and success stories from the leaders in e-governance, we have decided to keep the theme for the **27th edition of Technology Sabha, 'Recognizing the leaders who are raising the bar for e-governance'**

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