Special
Issue

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Citizen Security
13th March, Le Meridien, New Delhi

Hole in the Sky

**Mounting data
and sensitive
info need to be
shielded from
cyber criminals
on the prowl**

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Hole In the
SKY

2nd
e Uttar Pradesh
Land Of Unlim IT ed Potential

27 January 2015, Lucknow
at Vivanta by Taj

Tryst with Cyber Security

Prime Minister Narendra Modi recently called upon the IT sector to innovate solutions to counter the global menace of cyber intrusions and work on path-breaking ideas like 'cloud godowns' and 'cloud lockers' to help keep data secure. Amid rising volumes of digital data attracting increased cyber attacks, the call couldn't have had appeal greater than now.

Increasing use of technology has made the life of common man easier, the state of affairs in the government smooth and addressing ticklish issues by the corporate world hassle-free to a great extent. But with IT becoming an integral part of our lives, threat of cyber crimes like breach of privacy, unauthorised access, theft and misuse of sensitive information by criminal elements have also increased manifold.

In such a scenario, adopting proper security measures is the only way left to shield the businesses, governments, organisations, institutions and individuals against cyber aggressions. What starting off as a fun activity is an organised global crime today, with the potential to create holes in the socio-economic fabric and security cover of a nation.

Reported attacks on Indian websites have increased nearly five times in the past four years and by mid-2014, more than 60,000 incidents were recorded that year, according to the Indian Computer Emergency Response Team. With the government kicking off the Digital India mission, which will increase the use of internet and related applications, one can look forward to enhanced cyber attacks in the coming days.

Although the Government of India came up with a National Cyber Security Policy in 2013, with an aim to protect the public and private digital infrastructure from cyber attacks, techno-legal experts are skeptical about its efficacy to take on the contemporary cyber challenges.

With a view to highlighting the importance and ways of keeping data secure, Elets Technomedia is going to organise SecureIT 2015, 6th edition of the national conference on information safety and citizen security, in New Delhi on 13th March 2015. The event will provide a platform to policymakers, IT experts and other stakeholders to highlight the importance of keeping digital infrastructure immune from cyber threats and put forth ideas best suited for the purpose in the Indian conditions.

Happy reading!

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CAUSE OF TRIBAL EMANCIPATION

Even as the world has moved on to the digital age, the tribal people lag behind in various areas of human activity. Union Minister for Tribal Affairs Jual Oram, in an interview with Elets News Network (ENN)'s *Gautam Debroy***, talks about the steps the Narendra Modi-led Government has initiated for the welfare of the tribal community in the country**

What are your thrust areas as the Minister of Tribal Affairs?

My focus is on overall growth of the tribal people in the country. The condition of the tribal people in the sectors of education, health, communication, electricity, etc., must be improved. In addition to that, we have to promote their culture and language and also empower them politically.

The programmes and schemes of the Ministry are intended to support the efforts of other central ministries, state governments and voluntary organisations through financial assistance, and fill critical gaps taking into account the condition of Scheduled Tribes.

The Ministry also supplements the efforts of various developmental interventions in critical sectors through specially-tailored schemes. These, comprising schemes for economic, educational and social development, are administered by the Ministry of Tribal Affairs and implemented through state governments, Union Territory administrations and voluntary organisations.

How do you find the present status of the tribal people of the country?

Well, take education, for instance. The overall national literacy rate is 72 per cent and the tribal literacy rate is 58 per cent. It means the tribal literacy rate is 14 per cent below the national average.

Similarly, the tribal people are lagging behind in the primary health and education sector as well. We have

adopted several steps to better their condition in these sectors.

Earlier, the gap in the literacy rate was very huge. However, with several steps being adopted by the new regime, we hope that the differences would be minimised.

Do you have any special plan for the tribal people living in Naxal-affected areas?

Countering Naxalism is the responsibility of the Union Home Ministry. It is true that the people living in Naxal-affected areas are deprived of development, education and proper health facilities. As our Ministry is implementing various development schemes, we are trying to win over the people living in those backward areas.

The tribal people are basically polite and innocent. Talking and mixing up with them helps you win their hearts. So, we are trying to implement several development schemes through our ministry for the welfare of those living in the Naxal-affected areas.

Do you think that the previous regime at the Centre failed to emancipate the tribal people?

I think the previous UPA Government, during its 10 long years' tenure, failed to bring overall development to the tribal people. That is why, out of the 36 tribal seats in the last general elections, the Congress could hardly win two or three seats, while BJP and its allies bagged most of the seats. Also, the vote percentage of BJP in tribal areas was huge.

The result of the last general elections shows that the UPA Government did nothing for their welfare.

In fact, the present government is also considering the demand of several communities from Assam to give them tribal status. A community needs to have five basic features to get the tribal status — primitive trends, distinct culture, socio-economic condition, economic condition and their geographical location. But, our government is going to make some changes in the criteria by giving some relaxation in the norms.

We need political will for that. We have decided to bring an amendment to the Tribal Act, so that the communities, which are deprived of the tribal status, get the ST tag.

During a summary revision of the tribal community in India, we had scheduled 270 communities under the tribal category when the government was led by former Prime Minister Atal Bihari Vajpayee. We are once again considering to grant the tribal status to over 150-200 communities.

How will you implement the Direct Benefit Transfer (DBT) schemes in the tribal-dominated areas?

Well, our Ministry has identified schemes like the Post-Matriculation Scholarship (PMS) for ST students, Top

> A community needs to have five basic features to get the tribal status — primitive trends, distinct culture, socio-economic condition, economic condition and their geographical location. But, we are going to relax the norms.

Class Education Scholarship and Rajiv Gandhi National Fellowship (RGNF) for Direct Benefit Transfers to beneficiaries in the identified districts.

On the basis of directions given by this Ministry, the concerned states and Union Territories as well as implementing agencies have started disbursing the scholarships directly into the bank accounts of the beneficiaries in the identified districts (34 districts with ST population out of the identified 43).

How important is implementation of IT in your Ministry?

Information Technology is very important for our Ministry. With the use of IT, we can monitor proper implementation of the tribal welfare schemes. Our government is giving huge emphasis on the IT sector, and accordingly, all the central ministries have started working on proper utilisation of IT.

Hole in the SKY

As the rise in cyber crimes goes directly proportionate to our increasing dependence on the cyber world, the only option left before us is to save our data and information from falling into unscrupulous hands through adoption of effective security measures, writes **Nirmal Anshu Ranjan** of Elets News Network (ENN)

Over the last couple of decades, India has carved a niche for itself in the field of Information Technology, and more and more businesses, governments, organisations, institutions and individuals are embracing IT to its full optimisation. Same is true for the banking and financial sector of the country, which leverages IT's benefits for delivering services more efficiently, and in turn, consolidating the foundations of the national economy.

However, the blessings of IT also remain fraught with the risk of cyber attacks on account exposure of the users' huge data bank of information regarding anything and everything. This can lead to privacy breach, unauthorised access, theft, abuse and misuse of such information by criminal elements. Starting off as a fun activity, cyber attacks are an organised global crime today, having the potential to create holes in the socio-economic fabric and security cover of a nation.

In this scenario, cyber security becomes an indispensable weapon to guard businesses, governments, organisations, institutions and individuals against any possible sinister design.

What's it all about?

Cyber security-broadly described as a combination of technologies, processes and practices designed to protect networks, computers, programmes and data from attack, damage or unauthorised access has caught the attention of governments worldwide. It becomes all the more relevant for India as the government has embarked on a Digital India mission, which will increase the use of internet and thus expose the country to larger cyber attacks.

India's reliance on technology is also apparent from the fact that it has already entered the age of e-Governance, ahead of most other developing countries, and brought sectors like income tax, passport-visa under its realm. Most of the Indian banks and securities market have also gone on full-scale computerisation, bringing in the

concepts of e-Commerce and e-Banking. These can be lucrative targets to paralyse the economic and financial institutions, and create havoc in the country. The damage can be catastrophic and irreversible, to say the least.

Recent reports suggest that terrorist organisations are also getting equipped to utilise cyber space to carryout terrorist attacks better known as 'cyber terrorism'. These attacks also aim to gain strategic and sensitive information from a country of interest. So, the possibility of such attacks in future cannot be ruled out.

Increasing Attacks
According to the Indian Computer Emergency Response Team (ICERT), reported attacks on Indian websites have increased nearly five times in the past four years. By mid-2014, more than 60,000 incidents were recorded. In view of the enormity of the problem, the National Association of Software and Services Companies (Nasscom) has also been raising its voice for a national structure for cyber security.

In response, the Department of Electronics and Information Technology (DeitY) under the Ministry of Communication and Information Technology, Government of India, came up with a National Cyber Security Policy in 2013. It aims at protecting the public and private infrastructure from cyber attacks.

However, techno-legal experts find the policy somewhat inadequate to counter the present-day challenges.

They have expressed their skepticism over effective implementation of the proposals of the policy document as well. The experts insist that a robust cyber security law be formulated at the earliest to take the bull by its horns.

Blessing in Disguise
Having said that, increasing security concern does not have everything negative about it; the flip side of the cyber threat is the huge business opportunity hiding under its fold. The research firm Gartner has predicted that security market in India will touch US$ 1.06 billion by 2015-end

as an increasing number of enterprises invest in these solutions to protect their business, especially in the digital world. According to the report, security vendor revenue (hardware, software and services) in India will grow from

Increasing security concern does not have everything negative about it; the flip side of the cyber threat is the huge business opportunity hiding in its fold. The research firm Gartner has predicted that Indian security market will touch US$ 1.06 billion by the year-end

US$ 882 million in 2013 to US$ 1.06 billion by the year-end.

Similar is its potential to generate employment. According to another report, by the end of 2015, India will require 5 lakh cyber security professionals across various industries, such as Finance, Telecom, Utility, Power, Oil & Gas, Airline and Government. This need is said to be generated due to the increasing internet penetration in the country, along with the high pace growth of e-Commerce, social media and other internet-based applications.

The Way Forward
No matter how potential is the threat from the sky, the country cannot reverse its pace of technological advancement. What is needed is to put in place a robust anti-cyber threat mechanism by immunising its IT infrastructure and systems against any such possible attack. Rising dependence on IT calls for adoption of security measures as a way of life, wherein spreading awareness about cyber threats can go a long way in mitigating the problem. It's time to cash in on the latent business and employment potential of the cyber threats, instead of getting cowed down by the attackers or sitting pretty to become an easy prey.

'DeitY' Showers IT
BLESSINGS
ON PEOPLE

The Department of Electronics and Information Technology (DeitY) has taken a number of initiatives to ensure timely, transparent and effective delivery of citizen-centric services across the country, says Ram Sewak Sharma, Secretary, DeitY, Government of India, in an interaction with *Gautam Debroy* of Elets News Network (ENN)

Tell us how important is the 'Digital Locker' system for public use, and how secure is this?

Digital Lockers can greatly facilitate paperless transactions through easy and authentication-based access. Citizens can store Government-issued digital documents and certificates and share them with various agencies without having to submit or send physical documents or copies. Government documents can be issued in verifiable electronic format and made available in federated e-Document repositories. The Digital Lockers and 'e-Document repositories' will greatly improve the citizen convenience and usher in paperless transactions across the ecosystem of public services. Easy access to the digital resources ensures that citizens are not asked to provide government documents or certificates, which are already available with some department / institution of the government in physical form.

In a situation of disaster, e.g. flood, storm, fire, etc, when citizens may lose paper documents, documents in the digital repository would be accessible for them anytime, anywhere to avail government or private services. The Digital Locker system has been designed considering the robust security considerations including authentication, risk and fraud management, access control, identity management and governance.

Punctuality of employees is visible at least in central government offices. Do you think the Biometric Attendance System could be useful in the state governments, too?

The Aadhaar-based Biometric Attendance System could be useful for the state government employees as well. At least six state governments have already shown interest in the system. We expect the number to grow in future.

What is e-Kranti - NeGP 2.0, initiated by DeitY? Is there any timeframe to implement this project?

The National e-Governance Plan (NeGP) was approved in 2006 with the focus on electronic delivery of services. 24 out of the 31 Mission Mode Projects (MMPs) under NeGP are operational providing a wide range of services. The average number of e-transactions under various MMPs has crossed over 25 crore per month during the last six months.

However, it was felt that despite successful implementation of several e-governance projects across the country, e-governance, on the whole, has

not made the desired impact. Hence, a need was felt to enhance the scope and quality of e-governance in the country by bringing in transformational government process reengineering, focusing on integrated services, interoperable systems and making best use of emerging technologies. It is in this context that 'eKranti' or NeGP 2.0, with a focus on both quantity and quality of electronic services, was conceptualised.

Under the e-Kranti framework, the portfolio of MMPs is being expanded. Existing projects/ software applications are also being revamped to make them more robust and improve the quality of e-services.

As you are closely associated with the 'Digital India' projects, what is your take on Modi government's 'Make in India' concept?

Electronics manufacturing is one of the pillars under the Digital India programme. The government has taken a number of policy measures to promote domestic manufacturing of electronic items. This has resulted in nearly 60 new investment proposals over the last one-and-a-half-year or so involving ₹18,000 crore. We see a significant positive trend in the interest levels and several global and domestic companies are looking towards electronics sector for their future investments in India.

Do you think that India can compete with countries like China in terms of electronics manufacturing?

Since most electronic products are traded on zero duty, the only way to create the industry in India is to be globally competitive. For every investment that happens in the sector, the competition and evaluation of destination is global, and any investment that is coming in the sector is doing so with full recognition of this. It is, therefore, the current trend in the investment in electronics is very encouraging. We are aware of companies that had plans to invest in China, but have shifted their investments to India.

Apart from the positive environment developed in India through the "Make in India" campaign and also through phased improvements in the ease of doing business in the country, the fact that the labour availability is dwindling in China and the labour costs are going up are also in our favor. The world is looking towards China-Plus One strategy and we should take advantage of this.

When we talk about IT, the second thought crossing our mind is security. How secure are India's IT projects?

Given the rise in the sophisticated cyber attacks across the globe, cyber security is of utmost importance for successful e-governance service delivery. We have taken all the measures to ensure that the confidentiality, integrity

Key Projects

i. **e-Bhasha** – e-Bhasha, a Mission Mode Project under e-Kranti, has been proposed to facilitate access to electronic services in officially-recognised Indian languages. Enabling services in Indian languages would go a long way towards digital inclusion for the entire population.

ii. **Digital Locker** – Beta version of the Digital Locker was released in February 2015. This project is a key element of the vision of Digital India to provide every citizen with a private space on a public cloud for storing/ sharing government-issued documents and records in electronic form. The project will be expanded soon.

iii. **Mobile as an Instrument of Digital Identity** - Given the high level of mobile phone penetration in India, they have become a convenient and cheaper channel for accessing a wide range of services electronically. It is proposed to make mobile an instrument of digital identity by linking it to the Aadhaar platform.

iv. **Common Service Centre (CSC) 2.0** - The CSC 2.0 proposal has been formulated in pursuance of the government's commitment to set up CSCs in all 2.5 lakh panchayats in the country to provide public services to citizens in rural areas. Financial inclusion services are also being implemented through CSCs.

v. **Portal for Lost & Found Children** - A citizen-centric portal (khoyapaya.nic.in) for reporting missing and sighted children is ready for operation. The portal would tap citizen intelligence for child tracking. Any citizen registered with the portal can provide information about such children using his mobile number.

vi. **Source Open Platform** – Governments both at the Centre and in the states are engaged in developing various software applications. But, very often, a lot of repetitive development work happens. DeitY proposes to develop a Source Open Platform to encourage collaborative development of applications by various government departments and agencies.

vii. **Visitor Management System** in Government offices to allow visitors to fix their appointments in advance, so that they do not have to wait at receptions of the government ministries and departments. The cloud-based multi-tenancy system has been developed by NIC and already successfully launched in the Ministry of Mines.

viii. **ePrisons:** A system for management of prisoners in jails across the country. The solution has been developed by NIC and is being offered to state governments. It is currently being implemented in nearly 400 prisons across the country.

ix. **Jeevan Pramaan:** This open source cloud-based system allows pensioners to give evidence that they are living without having to present themselves before the pension disbursement authority.

x. **myGov.in:** myGov.in has become a stable platform for engaging citizens in governance. With over 8 lakh citizens regularly participating in the platform, it has been source of great number of ideas and creative inputs on several schemes. Last week, a more advanced, user-friendly version of myGov.in was launched. A mobile app for myGov.in is also being developed.

xi. **NIC email:** The government has recently notified the new email policy which requires official communication to be done on email offered by NIC. NIC is in the process of upgrading their email system to meet the needs of 50 lakh users.

xii. **End-to-end PDS computerisation:** It is being implemented by NIC in close coordination with the Ministry of Food and Public Distribution. The system would include all processes from the release of food grains in FCI to actual issue of ration to consumers through FPSs.

e-Kranti - NeGP 2.0

Policy Initiatives

- Modified Special Incentive Package Scheme (MSIPs) - subsidy of 25 per cent of capital expenditure (20 per cent in SEZs) is available.
- Electronic Manufacturing Clusters Scheme, which provides 50 per cent of the cost for development of infrastructure and common facilities in Greenfield clusters (undeveloped / underdeveloped) and 75 per cent of the cost for Brownfield clusters (area where a significant number of EMCs exist).
- Preference to domestically manufactured goods - Allows for preference to domestic manufacturers in procurement by all Central Government Ministries / Departments (except Defence) and their organisations.
- Electronic Development Fund (EDF) for R&D and Innovation in Electronics sector. The Cabinet recently approved the EDF policy.
- Government has accorded approval for setting up of two semiconductor wafer Fabrication (FAB) manufacturing facilities in the country.
- Expansion in the number of PhD students in Electronics and IT to aid product development. Universities across the country are being assisted for increasing their intake of PhD scholars in electronics and IT areas. 3,000 additional PhDs will be generated through this programme in the area of electronics and IT/ITeS.
- To provide support for skill development, the Government of India provides 75-100 per cent of training cost for industry-specific skills for skilled and semi-skilled workers. Scheme for supporting nearly 4.2 lakh persons across all states has been approved.
- DeitY has successfully implemented a mandatory registration scheme for safety of electronic goods.
- Several initiatives to promote R&D in electronics with industry involvement have been approved.
- A National Centre for Flexible Electronics will be set up at IIT-Kanpur. This is a new and emerging are of electronics and the Centre will help create greater capabilities within the country in this new area.

> Cyber security is of utmost importance for successful e-governance service delivery. We have taken all the measures to ensure that the confidentiality, integrity and availability of the e-governance systems remain intact in case of any cyber threat
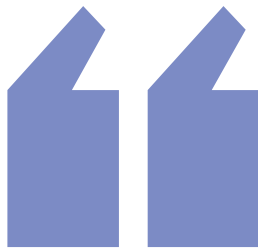
and availability of the e-governance systems remain intact in case of any cyber threats. Some of the key security measures we have taken include:

i. Government Data Centres are compliant to ISO 27001 standards of Cyber Security. They are also audited regularly by 3rd party auditors as well as the by Standardisation Testing and Quality Certification (STQC).
ii. All applications hosted in these data centres are audited by 3rd party security auditors before hosting.
iii. Security has been mandated to be included starting from the design stage of software application.
iv. All the security systems like Intrusion Prevention System (IPS), firewall, antivirus gateways, etc., are updated regularly.
v. Cyber drills are conducted regularly at Data Centres under the supervision of Indian Computer Emergency Response Team (Cert-In).
vi. Standard Operating Procedures (SOPs) have been prepared to ensure that security is process-dependent and not person-dependent.
vii. Various trainings related to cyber security are conducted regularly for the people involved with e-governance delivery.

Do you think that 'GyanSetu' initiative will be able to deliver e-Services to the rural population?
GyanSetu addresses the limiting factors for the rural population, such as low literacy levels and lack of knowledge of English for getting connected to the internet. GyanSetu system tries to bridge the gap by providing advanced yet simplified applications that can interact with the rural population, in a way suitable for them. The possible services are e-governance, railway status enquiry, e-education, e-health etc.

Tell us about some of the projects of DeitY.
DeitY has been providing technical and advisory support to all the government departments on e-governance projects. Moreover, DeitY has built several common ICT platforms, namely, MeghRaj cloud platform, Mobile Seva, payment gateway, etc. to help government departments in cost-effective and expeditious implementation of e-governance projects by leveraging these platforms.
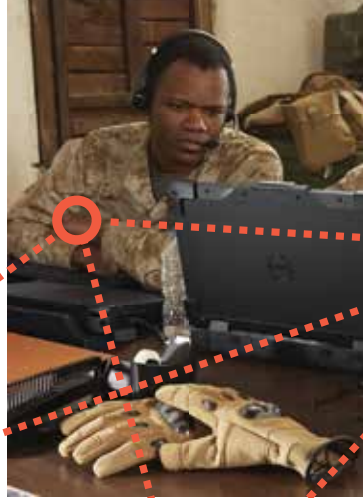
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Growing dependence on networked information systems and availability of sophisticated cyber attack devices call for matching efforts to keep valuable data and information secure and intact, says Dr Nirmaljeet Singh Kalsi, Advisor and Additional Secretary – Inter State Council Secretariat (ISCS), Ministry of Home Affairs, Government of India, in an interview with *Souvik Goswami* of Elets News Network (ENN)

Hacking the Hackers
SMARTER TECH CAN NAIL CYBER CRIMES

Having been a key policymaker for long and with vast experience in ICT, eGovernance and information security, how do you perceive global threats in terms of cyber security?

With ICT becoming all-pervasive in our lives today, cyber security has emerged as a major concern for governments, organisations, businesses and individuals. The cyber and physical worlds are at crossroads. Complex information infrastructures are now increasingly becoming open and interconnected, and offer a range of intelligent services tailored to the needs of each individual.

Increasing commoditisation, affordability and availability of cyber-attack tools and sophistication of cyber attack vectors employing organised cyber criminal gangs present an ever-growing concern and challenges for all governments and the decision-makers. The consequences of a cyber catastrophe could be quite unexpected and disastrous, which many have serious secondary and tertiary effects on the national and economic security of countries.

What in your opinion are some of the major security challenges in the year ahead?

Targeted attacks, social media scams, cyber espionage, malware and ransom-ware are growing at a rapid pace and are increasingly targeting the newer technology platforms globally. With cyber criminals becoming increasingly sophisticated in their methods and targets, in the years ahead, security risks would include more sophisticated and even larger scale espionage attacks and hacking the Internet of Things (IoT). This would be in addition to the still widespread 'traditional' cyber crimes, such as stealing of financial information, internet password hacking, identity theft, economic frauds, corporate espionage and hacking attacks, etc.

Experts warn that one of the biggest threats to the online world in 2015 could be increased ransom-ware attacks, encrypting data on the mobile/IoT devices and Cloud-based targets restricting access to the infected computer systems. The ransomware attackers will extract ransom payments from victims to release their encrypted data.

With smart cities and Digital India initiatives catching on, the Internet of Things will be integrated into every device, every application and every market. Therefore, while designing these networks, the security aspect will have to be given top priority as it could compromise these interconnected systems.

There are also growing trends in cyber espionage, which is becoming the weapon of choice for many state and non-state actors, and national governments and more small nation states and terror groups will use cyber warfare.

In the financial sector, with contactless and mobile payments becoming a global norm, there's a new opportunity for cyber criminals. Easy-to-crack passwords will continue to be a big risk and therefore different multi-factor password options will replace the traditional passwords.

According to data from the National Crime Records Bureau (NCRB), Cyber crimes registered under the IT Act shot up by over 50 per cent across the country between 2012 and 2013. These numbers may be just the tip of the iceberg, as several incidents still go unreported. Globally, the losses estimated due to cyber crime are pegged at about $400 billion per year. Such costs will continue to grow as citizens, organisations and governments continue to adopt technology, unless best practices and standards for cyber security are diligently followed.

Why is information security critical to India's digital future?

The digital world is a reality today in all aspects of our lives. Digital infrastructure is the backbone of prosperous economies, vigorous research communities, strong militaries, transparent governments and free societies. Lakhs of people across the country rely on the electronic services in cyberspace every day. As never before, ICT is fostering transnational dialogue and facilitating the global flow of information, goods and services. These social and trade links have become indispensable to our daily lives as well as the economy of our country.

Besides, critical life-sustaining infrastructures that deliver electricity and water, telecommunication, internet and broadband connectivity, control air traffic, and support our financial systems, all depend on networked information systems. The reach of networked technology is pervasive and global. Therefore, improving and securing this digital infrastructure in all its dimensions is critical to India's future.

The government also at all levels – central, state and local – is increasingly using ICT to enhance productivity, improve efficiency in service delivery, speed up development in all sectors of economy and improve the governance. Paper-based records are now in electronic records, which can be accessed from anywhere across the globe over the communication networks. The electronic information, especially on a network, is vulnerable to unauthorised access, which could adversely impact the overall internal security and national security interests of the country. As the government broadens the scope of its drive to move towards e-governance and embraces technology for citizen-centric services, it faces threats from multiple sources.

Securing sensitive information is, therefore, important for the strategic security, economic stability, uninterrupted operations of banking and finance, etc.

How use of technology and ICT can help in ensuring better security and safety for the citizens?

ICT has become the backbone of our economic growth and is

> ICT has become the backbone of our economic growth… Over the next few years, India will witness manifold growth in the number of Internet users, devices and data. For government and policymakers, this will create equally daunting challenges

critical for both economic and social well-being of the nation. Over the next few years, India will witness manifold growth in the number of Internet users, devices and data. For government and policymakers, this will create equally daunting challenges. Such challenges include public safety, economic security, internal security and ultimately the national security. The nature of the risk profile today (combined with the volatile nature of changing technology and market landscape) pushes us towards making the information security culture into a proactive one. In order to ensure a proactive approach of gathering Intelligence on unwanted cyber activity and cyber-attacks is of utmost importance. Such intelligence needs to be made actionable as an early warning system, which not only helps evade potential threats, but also provides key trends and resources for the effective security management.

The information is all around us – within Twitter, Facebook, LinkedIn, network traffic, emails, documents created by employees, behavioral patterns of people, our ecosystem, etc. New platforms are emerging that scan and analyse such massive heaps of structured, semi-structured and unstructured data; security alerts and system logs (structured data) to emails and social media content (unstructured data) for threats.

How can cyber security threat be tackled, especially in this age of vibrant social media?

With advancements in the security capabilities, we observe that cyber criminals have moved to leveraging social engineering techniques for perpetuating attacks. If you consider the method in which most attacks on critical infrastructure were executed globally, you will find a definite trend in the increasing usage of social engineering. Let us look back by 10 years. Very little personal information was available in the public domain then about an individual. Now, with ever-increasing use of social media, every facet of an individual's life is available online. Social media, although it does have options to protect information, continues to be more easily exploited through the social engineering attacks. Lack of user awareness, user apathy towards cyber security, information security and poor security hygiene in organisations are the leading causes for making them vulnerable and exposing them to successful social engineering attacks.

End-user awareness, education and capacity building with organisations are crucial to thwart such attempts by the attackers to execute the socially engineered attacks.

What has been done to tackle the issue of Information Security threat?

The National Information Security Policy and Guidelines has been developed for safely handling the electronic information that is created, stored, edited, processed/manipulated, accessed, transmitted and destroyed in electronic form. This document elaborates the baseline Information Security policies and guidelines, and highlights the relevant security concepts and best practices for handling electronic information during its entire lifecycle. This policy is mandated for all the ministries, departments, and organisations.

The document provides guidance and control objectives aligned in eight main domains and six additional areas, which form the core of information security practices and frameworks globally. The contribution of each domain to the success and effectiveness of the information security programme is intertwined with the level of maturity and success of the other domains. Thus, together they help create a baseline for a robust information security programme.

The core domains covered as part of the NISPG are Network and Infrastructure Security; Identity, Access and Privilege Management; Physical Security; Application Security; Data security; Personnel security; Threat and Vulnerability Management; and Security and Incident Management. Guidelines have also been provided for essential security practices i.e. Security testing, Security, auditing and ICT continuity. Further, guidelines have been provided for technology-specific ICT deployment and trends like Cloud Computing, Mobility and Bring Your Own Device (BYOD), Virtualisation and Social media.

Your message for the SecureIT 2015 event organised by Elets Technomedia?

Increasing digitisation of information, expanding exposure of government organisations due to connectivity and the use of external providers, rising dependence on the global ICT supply chain, etc., are posing serious threats to information security. Therefore, security is an important aspect and we should not sacrifice security for efficiency. The government recognises this challenge – more so in the context of national security. The SecureIT 2015 event will bring the stakeholders of the IT and security domains on one platform, which is the need of the hour. I extend my best wishes to the organisers — Elets Technomedia Pvt Ltd — for a huge success of the event, which is so very relevant under the present scenario. et**gov**

(*The views expressed in this article by the interviewee are totally personal and do not reflect the Government's view in any manner*)

Plugging the
CYBER CHINKS

As the pace of technology accelerates and ICT becomes an intrinsic part of people's behaviours, business practices and government activities, security threats also arise in the same proportion, says Rajit Punhani, Joint Secretary, Ministry of Home Affairs, Government of India, in a conversation with *Souvik Goswami* of Elets News Network (ENN)

What all issues are handled by the Department of Jammu and Kashmir Affairs?

The Department deals with constitutional, legal and policy matters with respect to the State of Jammu and Kashmir and counter-terrorism measures in that State. The Department also monitors implementation of Prime Minister's package for the State, special employment initiatives like 'Udaan' and other development programmes in J&K.

What kind of ICT initiatives are being implemented in your Department?

There are several ICT initiatives being implemented in our Department, like online visa application system. Through this system, various missions abroad upload the validated visa application data of the people of Pak origin/PoJK, who wish to visit J&K, in the central data server. After getting clearance from security agencies online, the message is conveyed to the concerned mission online.

Besides, we also use the e-Office Management System, which is aimed to conduct office procedures electronically for simplified, responsive, effective and transparent working in government offices; online RTI, which is a portal to file RTI applications online; online Public Grievances portal that aims to provide a platform to the citizens for redressal of their grievances, etc. Also, Udaan, implemented by the National Skill Development Corporation (NSDC), has an online portal, where eligible and interested people can register themselves.

As one of the key policymakers having huge experience in security domain, what are your main security concerns at the moment?

India, with its continental dimensions, varied terrains, large porous land borders, long coastline and ethnic differences poses a complex security challenge. In recent times, internal security has emerged as one of the biggest challenges in India. We have to deal with it in a comprehensive manner covering all dimensions at all levels — political, economic and social. Left wing extremism, cross border terrorism, border security, maritime security, ethnic clashes, and cyber security are currently some of our major security concerns.

How use of ICT can help in ensuring better safety for citizens?

ICT has made remarkable progress in the last decade to ensure better safety for its citizens. It has transformed the country, enabling innovation and increasing productivity, connecting people and communities, and improving standards of living and opportunities across the country. Changing the way individuals live, interact and work, IT has also proven to be a key precondition for enhanced competitiveness and economic and societal modernisation, as well as an important instrument for bridging economic and social divides and reducing poverty.

The pace of technology is accelerating and ICT is increasingly becoming a ubiquitous and intrinsic part

of people's behaviours and social networks as well as of business practices and government activities. These transformations will continue to move human progress forward by further leveraging IT's potential. On the security front, various technological solutions including night vision devices, GPS/GIS for patrol cars, surveillance camera systems, portable X-ray machines, vehicle number plate identification system, cyber patrol and communication monitoring system etc., have contributed to the safety of our citizens.

What according to you are the challenges before the security agencies nowadays?

At present, there are multiple challenges being faced by our security agencies. In the present context, the popularity of the internet and social media among the youth poses one of the biggest challenges to our traditional security apparatus. Besides, the need for adaptation to the changing environment, close and effective coordination among all the security forces and intelligence agencies is now more vital to maintain peace and order in the country. Also, augmenting technical capabilities (qualitatively and quantitatively) of the police forces to equip them with the state-of-the-art weapons, communication systems and other infrastructural modernisation is the need of the day.

One such measure, the Crime and Criminal Tracking Network and Systems (CCTNS) has been initiated aiming at creating and upgrading the infrastructure across various cities in the country.

Cyber crime is a matter of concern for security agencies. How do you think it can be countered?

Much of our critical infrastructure lies in cyber space which faces challenges from hacking, unauthorised access, financial fraud, data theft and espionage. Any threat of disruption of financial, rail, air, power and critical information services can be construed as an act of terror. Thus, cyber security requires desired priority. The requirements for cyber security are quite dynamic that change with the threat environment. The threat landscape needs to be updated regularly to prevent emerging attacks.

Collaboration among various agencies is needed to share information regarding emerging threats and vulnerabilities, which would help in effective protection and prevention of cyber attacks. It is necessary to take a holistic approach to secure the cyber space. Intelligence collection, collation, analysis and dissemination are prerequisites for success in this regard. One of the key drivers behind cyber security is the technology orgnisations, which demand setting up of state-of-the-art safe networking / communication infrastructure. Also, the constantly increasing computerisation drives across different states and central ministries and sensitive installations demands

> "In recent times, internal security has emerged as one of the biggest challenges in India. We have to deal with it in a comprehensive manner covering all dimensions at all levels — political, economic and social...

urgent need to upgrade our cyber security infrastructure.

This is the age of Social Media, but it also brings along security threats. How it can be tackled?

There are various types of benefits of the social media. But at times, if misused, it becomes a threat to our security. Our experiences have shown that motivated use of the social media can disturb social amity. We need to support judicious use of social media, and mull steps to check its misuse. Further, we need to create a robust mechanism to monitor flow of information and data on different media to help detect, prevent and deter criminal and terrorist actions. At the same time, we need to strike an ideal balance between privacy, freedom, liberty and security and safety of our citizens.

What is your message for the SecureIT event being organised by Elets Technomedia?

I think this is a good forum to discuss various opportunities and challenges that IT provides us. It will give us an insight into how to harness the benefits of IT in order to improve the quality of life of the general populace. I wish all success for the topical and timely event. eGov

Intelligent Technology
GUARDING BORDERS

The Sashastra Seema Bal (SSB) is effectively using IT applications to prepare people along the borders against any possible aggression and enhance communication within the force, says Banshi Dhar Sharma, the Director General, in conversation with *Souvik Goswami* **of Elets News Network (ENN)**

Give us a brief history and evolution of Sashastra Seema Bal (SSB).

The Sashastra Seema Bal is a border guarding force under the administrative control of the Ministry of Home Affairs, Government of India. It is a special force created in 1963, in the aftermath of Chinese attack on India. Initially, it was known as the Special Service Bureau. The idea behind its creation was to prepare the populations along the borders (all over the northern and north-eastern border), so as to enable them to fight any future aggression better. In the process, we cultivated the beautiful culture of working along with the local people. Various activities, such as civic action programme, including initiatives to empower the border populations and providing them training in various defence activities, were started by us. SSB also focused on integration of the border area population with the mainstream of the country effectively in regions like Ladakh, Himachal Pradesh, Uttar Pradesh and particularly in Arunachal Pradesh. In these areas, SSB is still loved by the population for its role.

Pursuant to the recommendations of the Group of Ministers on reforming the National Security System, SSB was declared a border guarding force and Lead Intelligence Agency (LIA) for Indo-Nepal border (in January 2001) and for Indo-Bhutan border (in March 2004). SSB saw a shift from its traditional role to a border guarding force. As common people by then knew us as 'SSB' better, the acronym was retained and it was renamed as Sashastra Seema Bal.

As most of the Indo-Nepal and Indo-Bhutan bordering areas are quite porous, what is SSB's modus operandi to tackle problems in these areas?

As I said, the main objective and mission of SSB are to promote a sense of security among the people living along borders, to prevent trans-border crimes and unauthorised entry into or exit from the territory of India, and to prevent smuggling and other illegal activities. But, as you know both the Indo-Nepal and Indo-Bhutan borders are quite open and in fact, in some areas, there is no marked border, guarding these borders is a challenging task.

In these areas, people are not used to checking and frisking, which also makes it easy for the forces inimical to our

country to carry out all kinds of anti-India activities there. So, we cannot be complacent, but have to be vigilant. Moreover, we cannot use firearms because of the special nature of these borders and the friendly relations among the peoples of India, Nepal and Bhutan.

Do you also take help of IT to accomplish your task successfully?

SSB has kept pace with the growing IT culture and evolved itself accordingly. The major IT initiatives undertaken so far include:

- Connecting units up to border outposts (BOPs) through **Wide Area Network (WAN)** for seamless transmission of video/voice/data.
- **Personnel Information Management System (PIMS)** has been implemented in SSB with updated information of each employee.
- **e-Service books** can be accessed by all force personnel through WAN.
- **A centralised payroll** software is being used to manage the salaries of the personnel through central database at the force's headquarters.
- **e-Payslips** are available to the force personnel on WAN.
- **Inventory management** for all provisioning items has been issued to the force personnel. The system keeps track of the quantity of items in stock, etc.
- **Intelligence analytics software, 'PRAGYA'** takes care of submission of daily intelligence reports, their consolidation and analysis and generation of monthly reports etc.
- **e-Surveillance** is being managed through CCTV cameras at Trade/Transit points along the border.
- **e-Recruitment** has been initiated to bring transparency in the recruitment system and to minimise the human error angle during physical efficiency test and others.

Also, an IT training centre was established at Faridabad in 2006 for imparting training to the force's personnel and its sister agencies.

What are the proposed initiatives of SSB in the field of IT?

The MHA has envisioned an ICT roadmap. Its aim is to enable an IT-secured environment in a phased manner by providing real-time information access and availability across locations to improve operational planning of the force, and enhance management of inventory, human resources and finance for informed decision-making through advanced and innovative technologies in an integrated and comprehensive manner.

How is your organisation tackling the problem of cyber security?

> I want SSB to create its own niche in securing porous and open borders, which can become a model for other border guarding forces across the world

The IT infrastructure is under a continuous threat from the cyber world. It gains all the more importance since most of the information about the force and its personnel/deployment is available through our application software. Therefore, care has to be taken while selecting the media and hardware for WAN. We are also working on the issue in conjunction with National Critical Information Infrastructure Protection Centre (NCIIPC).

Please share your vision for Sashastra Seema Bal.

I want SSB to emerge as a futuristic organisation. My personal opinion is that the world over, physical borders are gradually disappearing or getting more and more relaxed. In Indian subcontinent also, except the India-Pakistan border, other borders are relaxed ones, though the Indo-Nepal and Indo-Bangladesh borders are porous. In this context, SSB is preparing itself to meet the challenges of ensuring nation's security on the Nepal and Bhutan border. And our main weapon will be effective intelligence. We have to use this weapon constantly and continuously.

I want SSB to create its own niche in securing porous and open borders, which can become a model for other border guarding forces across the world.

Purging the Nation of
DRUG MENACE

There is a definitive link between drug trade and trans-border terrorism, and Narcotics Control Bureau keeps a watchful eye to foil the sinister designs of the anti-national forces, says B B Mishra, Deputy Director General, in a tête-à-tête with *Gautam Debroy* **of Elets News Network (ENN)**

Tell us briefly about formation and role of the Narcotics Control Bureau (NCB).

There was need for creating a central agency, which could work as a nodal agency for handling all drug-related activities. The Narcotics Control Bureau (NCB) was created in 1986, following legislation of the Narcotics Drugs and Psychotropic Substances (NDPS) Act in 1985. Since it was a special law, some special actions were required to deal with drug-related activities. The primary aim was enforcement of drug laws across the country.

Initially, it was created under the Department of Revenue, and subsequently in 2004, it was shifted to the Ministry of Home Affairs (MHA). It was done following the perception that there was a strong relation between drug and terrorism, and the Home Ministry could handle both.

We are a nodal agency and prepare data for the whole country. Further, we advise the government on various issues and suggest them the required changes in the Act.

At the headquarters, we maintain liaison with the liaison officers of the drug-trafficking-affected countries because drug

is a problem that persists in almost all the countries. Proper liasoning is a must to counter this menace. We have drug liaison officers of Australia, the USA, Canada, the UK, France and Germany, and they are based in Delhi. So, there is a regular contact. We exchange information and based on that, we act and go after the traffickers.

NCB also functions as an enforcement agency through its field units located in Mumbai, Delhi, Kolkata, Madras, Varanasi, Jodhpur, Chandigarh, Jammu, Ahmedabad, Imphal and Thiruvananthapuram.

Which are the major drug-prone areas in the country?

The problem is very acute in certain parts of Punjab because it shares its border with Pakistan, a country where drug trade is widespread. Manipur is the other state where the problem is severe. Many metro cities like Mumbai, Bangalore, etc., are also affected by the drug menace.

What kind of responses you get from neighbouring countries like Pakistan, Bangladesh, Sri Lanka, etc., following your liaisoning exercise with them?

These countries don't have their liaison officers in India, but we keep organising annual meetings with them. DG-level talks with Pakistan, Myanmar and Bangladesh, where the top brass of the Narcotics Department exchange their ideas and information, are held at regular intervals. Such meetings help us a lot in countering the menace.

Also, through such meetings, we come to know about their (neighbouring countries) concern. For instance, Bangladesh is quite concerned about cough syrup having opium composition, which is being smuggled from India to Bangladesh. When we get such information, we act against it.

As drugs and terrorism are interrelated, do you feel that Northeast insurgents based in Bangladesh could use drugs to purchase arms?

We don't rule out this possibility, although we don't have any evidence to substantiate that. Nonetheless, the possibility still persists, as it happened in Northern parts of the country. There is a definite similar link with the drugs coming from Pakistan side to Uri. In fact, some arrested people revealed existence of such connection. So, on the western border it is very clear.

In the East and Northeast, we don't have any such evidence, but we do have evidence where extremist groups support cultivation of poppy.

On the Western border, the problem is different from the Eastern border. As per the United Nations Office on Drug and Crime (UNODC) estimate, about eight tonnes of heroine produced in Afghanistan comes to India via Pakistan. Going by the number of seizures, mostly it happens either in Punjab or in Jammu & Kashmir.

How is your relation with the border guarding agencies, like the Border Security Force (BSF)?

In Punjab, most of the seizures have been done by BSF. There is at least one seizure every week from along the Western border by BSF. Problems of pharmaceutical medicine being abused also persist along the Western border.

On the Eastern side, we have Bangladesh. The government as well as the law-enforcing agencies are mainly concerned about cough syrup. While in Western region, it is BSF, who do all the seizures, along the Bangladesh border, it's not only BSF, but also Customs, NCB, Directorate of Revenue Intelligence (DRI), who go after the drug-traffickers.

What is the extent of use of the Information and Communications Technology (ICT) in your department?

We make good use of the Information and Communication Technology. We keep ourselves updated on the latest inventions in ICT. It not only helps us in doing our job faster,

> " We make good use of the Information and Communication Technology. We keep ourselves updated on the latest inventions in ICT. It not only helps us in doing our job faster, but also helps us in tracking down the criminals wherever they are

but also helps us in tracking down the criminals wherever they are. Ironically, people involved in illicit drug business also take advantage of the ICT. They often indulge in internet pharmacy, i.e. sale and purchase of drug takes via internet.

How much cooperation do you get from the state police forces?

We get good cooperation from the state police. When we work together, our results are better. Whenever we ask for manpower from the state police forces, they provide us. The states are equally concerned about illicit drug business. [egov]

IT Happens in Goa

Goa Legislative Assembly's move to go paperless up to 95 per cent came even before announcement of the 'Digital India' campaign. The move, apart from being a 'green' initiative also aims to make governance transparent. **R K Srivastava**, Additional Chief Secretary in the Government of Goa, holding the charge of Principal Secretary - IT, Tourism and various other departments, talks about adoption of IT in various fields in Goa with *Nabin Sinha* of Elets News Network (ENN)

What are the high points of IT development in Goa?

Goa has the distinction of being a State, which has achieved 100 per cent IT-enabled services. The village Panchayats in the State are equipped with broadband facility and we have two-way communication with the members of the Gram Sabha and other local bodies. Goa is also the first State to start IT and IT-enabled services in the country.

Hon'ble Chief Minister Manohar Parrikar has taken special interest in developing IT infrastructure, so as to have video-conferencing and other facilities at all levels. Digitisation and IT-enabled services are on the highest priority, along with the announcement of the Prime Minister Narendra Modi's 'Digital India' campaign.

What are the priority areas for IT services in Goa?

More than 74 public utility services are already on IT and e-governance mode, helping sectors such as tourism the most. One can not only book hotels, motels and transport, but can also obtain a detailed itinerary of tourism facilities. Facilities such as booking sea-based services are also available online. This helps get assured services to tourists and employment to the local people of Goa. The recent arrangement of geo-information on large service providers has immensely helped the visitors to the State.

The pace and quality of IT services has been hailed by several national and international forums like NASSCOM and others.

What benefits have you been able to ensure for the people of the State using the IT tools?

People at large have benefitted a lot. For instance, in Public Distribution System (PDS) alone, pilferages and other problems have been eliminated to a great extent. The land records, transport facilities and other public utility services have also been made available in an easy manner.

There are several citizen- and business-centric services available to the people, and e-Governance is a priority in the State. The government–citizen interface with the objective of ensuring good governance is one of the top focal areas for the government. All services and information would be readily available on one's fingertips.

The Chief Minister keeps himself updated on every issue and takes personal interest to resolve people's problems.

What is the future roadmap for the growth of IT sector in the State?

Chief Minister Parrikar has taken a lead from the announcement of Prime Minister Narendra Modi's 'Digital India' mission. The State Government plans to go for Generation II to III for digitisation of all its records and government files.

It is aimed at facilitating more investment in the IT sector
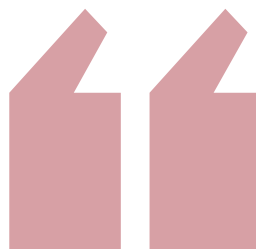
> " More than 74 public utility services are already on IT and e-governance mode, helping sectors such as tourism the most. One can not only book hotels, motels and transport, but can also obtain a detailed itinerary of tourism facilities

and creating jobs for the youth of Goa. The State has a vast potential for IT-enabled services and attracting investment. The State Government is poised to facilitate investment in IT and other related sectors.

How does the government plan to bring investments in the IT sector?

The government has already announced a slew of initiatives for attracting investment in the sector. Some of the good companies are already there in the State and many more companies are interested in setting up their units. Some of them are expected to put up their development units, which would help bring in revenue and generate employment for the youths in the State. Telecom companies have already put in their investment and services in the State. The Chief Minister has specially chalked out a plan to bring investment in the IT sector. 🔲 gov

Telangana Takes
THE IT CHALLENGE

The newly-carved State of Telangana is making all-out efforts to harness the power of technology and create a conducing atmosphere to attract IT investments, says Harpreet Singh, Secretary, Department of IT, Electronics & Communications, Government of Telangana, in a tete-a-tete with *Nirav Soni* of Elets News Network (ENN)

What are the major IT initiatives being planned by the Government of Telangana?

In Telangana, we are looking at IT with respect to four dimensions — (a) attracting IT investments in the State; (b) skill development of our youths, so that they get employed in the companies coming and investing in the State; (c) implementing various eGovernance initiatives as defined under the Digital India programme; and (d) creating a start-up for boosting an environment of innovation in the State. All our actions and policies are designed to keep these perspectives as focus areas.

What are the major challenges you come across in implementing your initiatives?

Challenges are many, and so are the opportunities. For instance, we have good number of educated youths in our State, and the challenge is to develop their soft skills, language proficiency, etc. Also, we have dearth of good qualified faculties to help develop these skills. Availability of power is also one of the major problems in our State. But the State is well-equipped to face these challenges and is gearing up fast to make Telangana one of the most favoured destinations for investment.

What are your views with regard to the 'Digital India' initiative of the Narendra Modi-led government at the Centre?

We, in Telangana, are already in tune with the Digital India programme. In fact, in many of the areas like implementation of State Data Centre (SDC) and State

Wide Area Network (SWAN), and in some of the major e-Governance initiatives, we are the frontrunners. In fact, we are in favour of supporting Research and Development activities, and innovation and entrepreneurship in the State. We are also supporting women entrepreneurs in a big way by providing various incentives. For example, we are providing ₹15 lakh assistance to the SMEs establishing their operations in our State and employing 100 employees in the first three years of operations. Also, we are taking many initiatives in the areas of Smart Cities.

Once NOFN is in place, the security of data will become crucial. How much the State is prepared in the area of cyber security?

There are various methods and techniques that are

available today to protect important data of governments, citizens and various stakeholders. We follow certain standard practices and protocols for keeping the data secure. Apart from implementing technology, as part of our IT policy, we also have a mandate on capacity building. We are actually educating stakeholders on various aspects of keeping the data secure. Many of the websites that are not hosted on our data centre have been hacked due to absence of proper security measures. We are also educating them on various dimensions of cyber security.

What are the various initiatives the department is undertaking for attracting IT investments in Telangana?

We are undertaking various initiatives. We have formulated a very attractive incentive policy for encouraging manufacturing in the State. We are also doing various road shows. Besides, we are also visiting various countries and making presentations. Recently, we had been to Korea and

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Taipei and soon will be visiting more countries. We are also updating our Hardware Manufacturing Incentive Policy. Two clusters have already been approved by the Government of India in Telangana – Hyderabad and Medak, and we are now marketing those clusters. Companies are taking time for making decisions. Once the companies understand our strengths, the clusters will definitely grow and develop.

We recently heard of Google coming to Telangana and doing some investments in Hyderabad. Please shed some light on this development.

You are right. Google has shown interest in establishing its third campus in Hyderabad after the US and the UK. We are in the final stages of discussions and are expecting to sign a Memorandum of Understanding (MoU) shortly.

ITBP Takes Steps Towards
TRANSFORMATION

Acknowledging the importance of Information Technology, the Indo-Tibetan Border Police (ITBP) is harnessing technology to keep borders safe even in the most difficult hilly terrains, says Raja Babu Singh, Inspector General (Training), ITBP, in an interaction with Elets News Network (ENN)'s *Gautam Debroy*

Tell us in brief about Indo-Tibetan Border Police (ITBP).

The Indo-Tibetan Border Police (ITBP) is a specialised mountain force and most of the officers and jawans are professionally trained mountaineers and skiers.

The force was raised on October 24, 1962. Earlier, we were deployed to guard the Karakoram Pass in Ladakh, and now our area has been extended up to Jachep La in Arunachal Pradesh covering 3,488 km of Indo-China Border and manning Border Outposts (BOPs) on altitudes ranging from 9,000' to 18,700' in the western, middle and eastern sector of the Indo-China Border.

Being the first responder for natural disasters in the Himalayas, ITBP has also been carrying out numerous rescue and relief operations. The work carried out by our jawans in the Uttarakhand natural disaster was commendable.

Do you make use of Information and Communications Technology (ICT) in ITBP?

ITBP has started making proper use of ICT in almost all the units and departments. It has been started under the joint committee headed by the Prime Minister's Office (PMO) and the National Informatics Centre (NIC).

In fact, we have already sent a proposal to the Ministry of Home Affairs (MHA) for an IT training centre as a centre of excellence. We have suggested that at least 30 ITBP personnel should be given proper IT training. Efforts are on to integrate the Personnel Information System (PIS) of all the security agencies under one platform.

Some neighbouring countries are concentrating on technologies to develop their skills. What steps ITBP is taking in this regard?

Due to strong position of China in this region's geopolitics, borders adjoining the neighbouring country are sensitive in

nature. Since it is a hostile area, we are trying our best to guard it. Our men are truly dedicated towards its security.

We are, of course, well aware about the importance of IT. ITBP has to establish new dimensions of security and service of the nation in view of changing security scenario.

In addition to it, we have maintained the highest standards of training, and the training institutions have been provided with the required infrastructure and instructors.

In fact, we are also developing infrastructure on the BOPs. We have to be technically competent to deal with the new security threats in the present scenario. Efforts are on to get modern weapons and equipment to improve the professional skills of the force.

Quite often there are reports of incursion from the Chinese side. Did you identify any such areas, from where incursion takes place?

Yes, we have identified a few places both in the western as well as eastern sector, where there is a difference of perception. On one hand, there is a land parcel which we claim as ours, while the Chinese claim it as theirs. There are several such disputed pockets in both sectors.

We do conduct long-range patrolling in those areas. And quite occasionally, we also sit for meetings with the security agencies across the border.

What is ITBP doing for its jawans and their families?

The force is keen to work specially for the welfare of jawans

> Being the first responder for natural disaster in the Himalayas, ITBP has also been carrying out numerous rescue and relief operations. The work carried out by our jawans in the Uttarakhand natural disaster was commendable

and their families. Construction of new Separated Family Accommodation (SFA) is under progress. The construction work of an ITBP Public School building is on and once this school building is complete, the force personnel will have a unique educational institution in the national capital for their wards to get quality education.

What is the road ahead for ITBP?

Honorable Home Minister Rajnath Singh has assured that ITBP will shortly have its own and dedicated air support system in place. He also announced to provide ₹175 crore for development of infrastructure on the Indo-China border in Arunachal Pradesh. 54 new Border Outposts have been sanctioned by the Ministry to fill the gaps on the border of Arunachal Pradesh. We are also getting enough funds to modernise the Central Armed Police Forces (CAPFs).

Thus, keeping all these matters into consideration, the ITBP has a huge responsibility and has a long way to go. ⓔgov

MP Moves Along the 'DIGITAL INDIA' PATH

With about 65 per cent Aadhaar coverage in the State and 100 per cent success rate of Jan-Dhan Yojana in some districts, Madhya Pradesh is moving firm towards realising the vision of 'Digital India', says M Selvendran, Managing Director, Madhya Pradesh State Electronics Development Corporation Ltd, in an interaction with *Gautam Debroy* **of Elets News Network (ENN)**

What are the major initiatives in Madhya Pradesh in terms of eGovernance?

There are several areas where our State has fared very well in terms of eGovernance. We have envisaged State Wide Area Network (SWAN) in order to get financial and social benefits of Information Technology. The project aims to provide bedrock of communication through voice, data and video, throughout the State and is an effective tool for implementation of eGovernance projects.

We have State Data Centre (SDC) for hosting and managing the eGovernance applications of the State, its constituent departments and various other organisations.

We also have State Service Delivery Gateway (SSDG) to fulfill the vision of providing easy and convenient services to the citizens through Common Service Centres (CSCs) and enabling the State Portal by implementing its key components.

Madhya Pradesh will soon have two Electronics Manufacturing Clusters (EMCs) in Bhopal and Jabalpur, which would serve twin purpose of creating world-class infrastructure and attracting investment in the Electronics Systems Design and Manufacturing (ESDM) sector. The EMC is also one of the major pillars for achieving the vision of "Digital India".

Then, we have MPOnline Ltd to provide services to the citizens at their doorstep with special emphasis on the rural community, to minimise their visits to government offices. CM Helpline 181 is a one-stop call centre where you can tell about all your grievances.

So, do you feel that Madhya Pradesh is one of the better governed states?

Yes, it is, because the growth rate here is higher than the national average and many other developed states. We have proactive and citizen-centric governance. We focus on improved services delivery and governance. Further, we have implemented Public Services Guarantee Act.

What steps have been taken for an improved performance of the government?

With BSNL as primary and Reliance Communications as the secondary bandwidth providers, we bring redundancy in connectivity. We have also brought flexibility in the strategies for achieving last-mile connectivity. In addition to it, Samagra Samajik Suraksha Mission (3-SM) is a social security mission. With this initiative, we concentrate on

helping the citizens to solve their problems. We have created a database for this, where the citizens can find out what government benefits they can avail. After proper verification, we deliver the benefits through this scheme.

In fact, we are delivering pension benefits to citizens through this initiative. There are at least 12-13 departments, which are delivering government initiatives through this scheme. Here, the process is almost in the line with DBT, but it doesn't comprise the biometric parameters.

How well Aadhaar and Pradhan Mantri Jan-Dhan Yojana have been implemented in Madhya Pradesh?

Well, the coverage of Aadhaar in the State is more than 60-65 per cent. We aim to finish it by next six to seven months. Our government has also engaged some agencies to do this work where we will provide all necessary support.

In terms of Jan-Dhan Yojana, too, our State is doing well. In fact, there are some districts where we have achieved 100 per cent success in opening bank accounts.

How do you intend to reach out to the rural areas of the State?

We reach our citizens basically through two means — one is through internet, where they can use a computer, laptop or tab, and the other source is Citizen Service Centres (CSC). They are around 12,000.

The CSC will improve the living standards of common man in the rural areas by enabling electronic delivery of information, knowledge, skills and services, which they need the most.

Another measure we have implemented in our state is eTaal. We are at No. 2 or 3 in the country in implementing eTaal. It's a web portal for dissemination of e-Transaction statistics of national and state-level eGovernance projects, including Mission Mode Projects. It receives transaction statistics from web-based applications periodically.

Tell us something about your IT investment strategy.

We have consolidated on IT and EMCs. We are the first state in the country to bag the Government of India's Electronic Manufacturing Cluster schemes. Our EMCs are coming up at Bhopal and Jabalpur.

We have also taken certain policy level initiatives to make IT sector more attractive. We have revised our IT policy, too. We have Madhya Pradesh Information Technology Investment Policy 2012 (as amended in 2014) to develop Information Technology-Enabled Services (ITeS) and Electronics Hardware Manufacturing (EHM) that have led to an inclusive growth, creating more job opportunities in the IT sector.

Have you received any investment proposal for your State?

Yes, several people have set up their firms in Indore and Bhopal. Particularly, it is picking up in Jabalpur and Gwalior. We are getting investment proposals for MSMEs and other sectors. We are extending all possible help to the investors interested to invest in our State. We are getting calls from several private companies also.

How do you intend to contribute to the Government of India's 'Digital India' campaign?

Almost all our projects and proposals are linked to the Digital India theme. One area where we are concentrating is that we are trying to bring in most companies into the manufacturing of electronic goods. We are also trying to bring in the first cheap fabrication unit in MP announced at the Global Investor Summit.

What are the major challenges that you are facing in the State?

In the electronics manufacturing sector, we face problems because other countries offer better incentives in manufacturing. Although we have some policies, we have to modify them to attract people.

> Madhya Pradesh will soon have two Electronics Manufacturing Clusters, which would serve twin purpose of creating world-class infrastructure and attracting investment in the Electronics Systems Design and Manufacturing sector

However, getting investment to smaller towns remains a challenge. Availability of a good bandwidth and its coverage is a problem. We need to sort these issues out.

Does MP have any budget allocation for eGovernance?

Yes, the State has taken a decision that at least 2 per cent of its budget would be spent on eGovernance. Several departments have already taken steps in this regard. We are moving forward, and the departments are also spending more and more money on IT.

K R MURALI MOHAN

Big Data, in combination with analytics, can produce amazing results that can be utilised for informed decision-making purposes, says K R Murali Mohan, Head - Big Data Initiative, Department of Science and Technology, Government of India, in an interview with *Gautam Debroy* of Elets News Network (ENN)

Decoding the Story
DATA JUNGLES HIDE

What is the importance of the Big Data Initiative division?

This is a new programme launched some six months ago by the Department of Science & Technology (DST). It's a new and emerging technology and has immense potential in government, public sector undertakings, skill development and entrepreneurship development, cutting across the various spheres of our life.

Going by the definition, Big Data is data whose scale, diversity and complexity require new architecture, techniques, algorithms and analytics to manage it and extract value and hidden knowledge from it. In other words, Big Data is characterised by volume, variety (structured and unstructured data), velocity (high rate of changing), veracity (uncertainty and incompleteness) and value. In the context of Big Data research, so-called analytics is playing a leading role.

Analytics cover a wide range of problems, mainly arising in the context of database, data warehousing and data mining research. Analytics research is intended to develop complex procedures running over large-scale, enormous in-size data repositories with the objective of extracting useful knowledge hidden in such repositories. One of the most significant application scenarios where the need for Big Data arises is, undoubtedly, scientific computing. Here, scientists and researchers produce huge amounts of data per day via experiments (e.g., disciplines like high-energy Physics, Astronomy, Biology, Bio-

Medicine and so on). But, extracting useful knowledge for decision making purposes from these massive, large-scale data repositories is almost impossible for actual Database Management System (DBMS)-inspired analysis tools.

From a methodological point of view, there are also research challenges. A new methodology is required for transforming Big Data stored in heterogeneous and different-in-nature data sources (e.g., legacy systems, web, scientific data repositories, sensor and stream databases, and social networks) into a structured, well-interpretable format for target data analytics. As a consequence, data-driven approaches can replace the traditional hypothesis-driven research in science.

What are the achievements of your division as of now and your road ahead?

The main challenge lies in identification of the problem itself. As of now, we have identified some of the challenges, particularly related to science and technology, though solutions once developed are applicable to any domain or data sets.

Some of the challenges that researchers across the globe as well as in India are facing are related to data deluge pertaining to Astrophysics, Materials Science, Earth and atmospheric observations, Energy, Fundamental Science, Computational Biology, Bio-informatics and Medicine, Engineering and Technology, Geographic Information System (GIS) and Remote Sensing, cognitive science and statistical data. These challenges require development of advanced algorithms, visualisation techniques, data streaming methodologies and analytics. The overall constraints that the community is facing are:

1. IT challenge: Storage and computational power

2. Computer Science: Algorithm design, visualisation, scalability (machine learning, network & graph analysis, streaming of data and text mining), distributed data, architectures, data dimension reduction and implementation

3. Mathematical Science: Statistics, optimisation, uncertainty quantification, model development analysis and systems theory; and

4. Multi-disciplinary approach: Contextual problem solving.

Our roadmap mainly focuses on leveraging our academic strength, connecting to some of the issues our society is facing, and working on how Big Data Analytics (BDA) can play a role in addressing those issues.

What initiatives have you adopted for data digitisation?

Big Data Initiatives Division of the Department of Science and Technology is not directly related to data digitisation. However, it is an issue, particularly when we talk about legacy data. Almost every data-generating organisation has its own plans for data digitisation. We build analytics super structure on that.

What is the importance of ICT in your Department?

Being a scientist and associated with a scientific department, dealing with academicians impels the Department to consider ICT as an integral part of Science and Technology.

What are the major challenges you are facing?

Accuracy, authenticity, data availability and updation are some of the challenges we are facing.

How do you promote implementation of scientific projects across the country?

The Department of Science and Technology promotes science and technology (S&T) in the country and Big Data is a new initiative in the entire S&T setup. We propose to create industry-academia partnership to groom the talent pool in universities and connect them to governmental programmes and feed into policy formulations. We do have plans to develop a strong skill development module for students in BDA, so that their job potential increases. The entrepreneurship development in BDA is another area where we would like to focus. The aim is to equip job seekers well enough to become job creators. A new paradigm, Analytics-as-a-Service (AaaS), is emerging and we are good at it.

> Our roadmap mainly focuses on leveraging our academic strength, connecting to some of the issues our society is facing, and working on how Big Data Analytics (BDA) can play a role in addressing those issues

Who are the major beneficiaries of your Big Data Initiative division?

We can't pinpoint the beneficiaries. It is an enabling eco-system that we are trying to create. Overall, it has three broad areas. The first one is Research and Development, where academicians and researchers are supported to innovate on development of new visualisation techniques, algorithms, streaming methods and analytical tools, which have high-potential values within the country and across the globe. Second is skill development, where BDA skills and exposure will position our students on a better footing in international and national job market. And, the third area is entrepreneurship development.

Directly or indirectly, the overall beneficiaries involve everyone in the society. ⓔ gov

ICT for Minimising
DISASTER IMPACT

Proper and effective use of Information and Communications Technology (ICT) can minimise the impact of disasters in many ways, feels Major General Anurag Gupta, Advisor (Operations & Communication), National Disaster Management Authority (NDMA), Ministry of Home Affairs, Govt of India. Excerpts from an interaction with *Souvik Goswami* of Elets News Network (ENN)

Give us an overview of the National Disaster Management Authority (NDMA).

The Disaster Management Act (2005) provides setting up of a National Disaster Management Authority (NDMA) under the chairmanship of the Prime Minister and a National Executive Committee (NEC) of Secretaries to assist the National Authority in the performance of functions like laying down policies on disaster management, approving the National Plan and plans prepared by the Ministries / Departments of the Government of India in accordance with the National Plan, lay down guidelines to be followed by the State authorities in drawing up the State Plan, coordinate the enforcement and implementation of the policy and plans for disaster management, recommend provision of funds for the purpose of mitigation, etc.

What is the mandate of the Operations & Communication division in NDMA?

The mandate of the division can be described as following:

(a) For the country to handle disasters effectively, a dedicated continually operational and state-of-the-art communication system is a pre-requisite.

(b) The communication and IT support infrastructure must be capable of desired additionalities, up-gradation and reconfiguration along with Mobile Communication Platforms for last-mile connectivity at disaster sites.

(c) A dedicated skeleton organisation at NDMA will be required in the form of a Communication and IT Division for internal functioning of NDMA and for conceptualising the National Disaster Communication and IT Network.

(d) The key components of this division are Communication and IT Network and Disaster Management Information Systems with special reference to knowledge management and data fusion with emphasis on GIS-based applications.

Shed some light on the role of Operations and Communication divisions in NDMA.

The Operations Division has an Operations Center to provide round-the-clock disaster-specific information and data input facility, and also guide the efforts during the subsequent stages of response. The Operations Center at the NDMA also helps provide redundancy and physical separation to the integrated Operations Center at the Ministry of Home Affairs. On the other hand, the Communications & IT divisions focus on the formulation and implementation of National Disaster Communication Networks, establishment and management of LAN, WAN and MAN, interaction with nodal ministries and forecasting and early warning agencies, interaction with the central and state governments and related departments on IT and communication matters.

How the use of ICT can be leveraged for better management of disaster situations or to have a better preparedness before a disaster occurs?

The Information and Communications Technology (ICT) can be used to minimise the impact of disasters in many ways. It is used in almost all phases of the disaster management process. In the disaster mitigation and preparedness process, ICT is widely used to create early warning systems. An early warning system (EWS) may use more than one ICT media in parallel and these can be either traditional (radio, television, telephone) or modern (SMS, cell broadcasting, internet). It is essential that ICT is given its due place in disaster management, but it should also not be taken as panacea for all ills. ICT, like any other tool, can deliver its best when the other necessary ingredients are in place. Disaster management (also called disaster risk management) is the discipline that involves preparing, warning, supporting and rebuilding societies when natural or man-made disasters occur. It is the continuous process by which all individuals, groups and communities manage hazards in an effort to avoid or minimise the impact of disasters resulting from hazards. Effective disaster management relies on thorough integration of emergency plans at all levels of government and non-government involvement.

ICT also plays a critical role in disaster preparedness. ICT is the means for communication of information. It is critical in disaster preparedness and reducing the loss of life and property.

Early warning systems, television and radio broadcasting, web portals, long-distance education and telecommunications have a role to play in disaster mitigation. Typhoons, hurricanes, forest fires, oil spills, tornadoes, tsunamis and other natural disasters that travel distances are by their very nature able to give advance notice to significant populations of potential victims that lie in their path. The need for good early warning systems and signals, and prompt and effective transmission to vulnerable populations is one of the actions that the global community needs to commit to and invest in. Investing in making such information available is a fraction of and is worth most of the money.

Brief us on the various IT initiatives being undertaken in your division in NDMA.

The projects under implementation are the National Disaster Management Services - Pilot Project, and Decision Support System for Handling Offsite Nuclear Emergencies. The salient features of the National Disaster Management Services - Pilot Project are:

(a) Integrated project of NDCN and NDMIS being implemented through NIC;

(b) To be implemented in 16 multi-hazard districts for
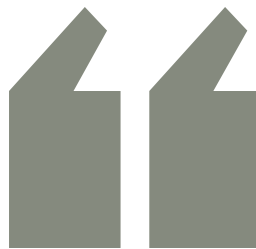
> " It is essential that ICT is given its due place in disaster management, but it should also not be taken as panacea for all ills. ICT, like any other tool, can deliver its best when the other necessary ingredients are in place

provisioning of communication network, capacity development in emergency communication; and

(c) Integrated approach to provide failsafe communication infrastructure and ICT services in relief and rescue operations for decision makers, stakeholders and the community.

On the other hand, the salient features of the Decision Support System for Handling Offsite Nuclear Emergencies (DSSNOE) are:

(a) Project for 13 nuclear power plants in states/districts to ensure provisioning of communication network, capacity development in emergency communication being implemented through NIC

(b) Communication infrastructure development for decision makers, stakeholders and the community, and to assist local administration in rescue and relief operations on inputs from AERB, NPCIL and other agencies.

What according to you are the main challenges in a country like India in terms of disaster management?

Management of disaster is a state subject, so states shall have to play a proactive role in preparation, planning, prevention and mitigation rather than focusing on response and relief. Implementation of BIS codes and Bye Laws at various levels and Disaster Risk Reduction (DRR) measures need more focused approach.

Taking 'Make in India' CAMPAIGN FORWARD

With the government laying emphasis on indigenous production through its 'Make in India' campaign, we are trying hard to push domestic electronics manufacturing, says **Pankaj Mohindroo**, President, Indian Cellular Association, in an interaction with *Gautam Debroy* of Elets News Network (ENN)

What is the role of Indian Cellular Association?

Our agenda is to fuel the growth of Indian electronics market, improve competitiveness and help in creating a legal and ethical market in regulating environment. We intend to push growth in the manufacturing sector, in line with 'Make in India' and 'Digital India' campaigns. We ensure that the fruits of mobile connectivity reach the masses.

How do you find the environment since announcement of initiatives like 'Make in India' and 'Digital India' by the Narendra Modi Government?

To some extent, things have got accelerated. The National Policy on Electronics is not a recent document; it came into being about two years back, and that is the foundation of building electronics industry in India. Further, we have also been working with various State Governments like Uttar Pradesh, Karnataka, Andhra Pradesh, Gujarat, Maharashtra, Rajasthan, etc., to build their State policies.

In fact, after collecting inputs from the members and global players, we have given a lot of suggestions to the UP Government on what kind of policies they should have in place. The UP Government also did some round-table discussions on that. However, there are still a few last-mile hitches, which need to be overcome.

We have suggested that we should not be looking at VAT (Value Added Tax) refund, instead we should look at its retention. It will encourage more investment, because the process of taking refunds is a painful one and mired in the bureaucratic system.

How well is Uttar Pradesh performing with regard to cellular services business?

That is a different subject. We are talking on electronics manufacturing. Local environment is one based on factors. When one starts manufacturing, one manufactures for the whole country and then for the whole world. The atmosphere in Uttar Pradesh is quite congenial. In fact, Uttar Pradesh is one of the six shortlisted States that we have marked for electronics manufacturing.

Currently, which are the sectors that the Central Government should concentrate to promote electronics business?

I think the rural India has very little penetration, both in terms of cellular as well as broadband services. Broadband services are not available even in several parts of urban India. So, that clearly should be the prime focus area.

What are your views on the 'Make in India' concept?

We are completely devoted to it. Even the fast-track task force that has been set up has very aggressive terms of reference. We have a task of setting up mobile phones manufacturing units for 500 million phones, which is an industry of around ₹3 lakh crore.

How do you find the idea of FDI in electronics manufacturing sector?

100 per cent FDI is already allowed in electronics manufacturing in India. We have to just encourage people and build the brand India and electronic brand India and take it forward.

Can India compete with China in the electronics sector?

China is a much bigger economy than us. We are a $2 trillion economy, while they are an economy of $10 trillion. We should forget about China as we are not going to catch up with a country like that. We should do it at our own pace and with our own strength. We missed the bus, as far as catching up with China is concerned…unless China collapses!

Do you think that India still has the capability to get visibility in the world electronics manufacturing market?

Yes, we can do it. We will definitely grow substantially and Chinese will get out of some of the products, and that market will be available to us.

Internet of Things to Push
SECURITY SERVICES

As more and more data will go up on the web, there will be greater requirement to protect those against possible theft, thus pushing demand for network security providers, says Sunil Sharma, VP-Sales Operations, India and SAARC, Cyberoam, in conversation with *Nirmal Anshu Ranjan* of Elets News Network (ENN)

In the last three years, we have registered an overall growth of 147 per cent. Our departments – Logistics, Research & Development, Product, Supply Chain Management and Accounts – have around 600 employees in India. Cyberoam also boasts of EAL4+ and ISO 9001 certifications. We have demonstration units at more than 300 locations that are used by our partners. We do all our business through our channel partners only.

How do you analyse security threat to a company and the solutions suitable for it?
Security is not just about providing a UTM solution and completing various security measures of an organisation, but a complete security posturing for an organisation, depending upon their level of security, how a CIO or CEO wishes to implement security levels in his organisation and what are the core competencies and business of that company.

For instance, the security requirement of an e-commerce company would be entirely different from a company into the business of import and export. Thus, a CIO or CEO would have to do a prior evaluation of the IT security requirements for future needs.

Priority determination is another big area in IT security. Everything is done with the help of our channel partners as we have a team of Cyberoam Certified Security Professionals (CCNSPs). We also have our Cyberoam Training Academy. So, we do a lot as far as it is concerned for IT security. It is difficult to find a single company coming out of India that is into products as well as in IT security, leaving a footprint in more than 125 countries.

Please tell us about the genesis of Cyberoam and its products.
Cyberoam is a company acquired by Sophos, a global Network Security appliances provider. In India and SAARC, we have presence in 15 cities. The company has registered its presence in cities like Jaipur, Indore, Guwahati and Lucknow, along with all the major metros and business cities. We started in 1991 from a company named Elite Core Technologies and Cyberoam UTM (Unified Threat Management) as an appliance-based application that emerged in 2006. And since then, there's been no looking back, as we progressed year after year on an average of 50 per cent.

The Narendra Modi Government is laying extra emphasis on the introduction of IT in the government ecosystem. Do you have a role to play there?
We are pretty much part of it. We are part of the government ecosystem through organisations like National

Informatics Centre (NIC) and National Informatics Centre Services Inc (NICSI). The two organisations primarily deal with most of the government projects directly for the concerned entities and float tenders for the project themselves. We work closely with these two and carry out business with other departments with the help of our channel partners.

PM Modi is also vigorously pushing the 'Make in India' campaign. How do you think Cyberoam is aligned with the campaign?

'Make in India' call is for those who are simply importing stuff from outside and distributing it across the country. We started domestic production way back in 1999 with an employee strength of 11, and are proud to say that today it stands at 600 and still growing. So, we are already in tune with PM Modi's campaign. Although about 60 percent of the total software development occurs out of India, it is the niche area where we have already carried out some of the software development activities within the country with the help of our channel partners, business associates and support of customers in India.

In which IT verticals Cyberoam has a business presence?

We have strong presence in verticals, such as Education, Hospitality, Defence, Governance, etc. However, we have a major market share, up to 70 percent, in the Education sector, followed by IT and ITeS, Hospitality and Government. We are now also focusing on BFSI as a vertical. In terms of technology as a domain, our appliance-based network security device provides a gateway. We also have solutions that are offered from Amazon Web Services (AWS). So, we provide Virtual Security Services from AWS, too. Therefore, in our range of services, we cover all web services, premise-based security and others.

Does Cyberaom also deal in hardware appliances?

As I said earlier, ours is appliance-based security, though we also offer virtual or web-based security. However, it is the hardware-based security that we are best known for in the market. In the field of virtual security also, we will soon become a force to reckon with.

India has excelled well in the field of IT. How do you see PM Modi's Digital India campaign impacting the sector in India?

So far, PM Modi has been a catalyst. As far as IT is concerned, globally it is evolving and is moving towards consumerisation. Initially, there were only mobile phones for sending and receiving information, and with

the Facebook on the scene, the conversation moved to WhatsApp and social media. But, with the arrival of Smartphone, things are moving at a much faster pace and people are using it for both personal as well as official communication. The IT development is now heading towards IoT (Internet of Things). With IoT, the smart cities are coming up, where there will be sensors all around. For example, if someone enters a building, a
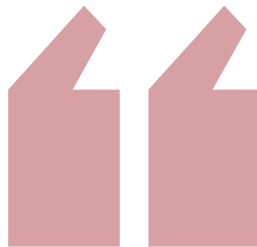
> Ours is appliance-based security, though we also offer virtual or web-based security. However, it is the hardware-based security that we are best known for in the market. In the field of virtual security also, we will soon become a force to reckon with

sensor would ask for the individual's ID, and only after recognising him through his history, etc., he would be allowed entry into the premises like post office, bank, etc. So, the concept IoT is coming up and could be used in a far broader perspective. Healthcare sector or hospitals are also using it in a big way. It is expected that IoT market will double by 2018.

On the same lines, PM Modi is also pushing for a 'Digital India', smart cities, etc. But to an extent, we are lagging behind in technologies. For instance, an electricity and water bill doesn't come automatically on the internet. It is the meter reader, which takes readings from the meter, and after passing through various processes, it is uploaded in the electricity board's website. And, as the data passes through web, it becomes vulnerable to theft. Hence, the role of companies like Cyberoam is only going to become crucial in the days ahead.

Park Your Data in Digital
STOREHOUSE

Larger the data, greater the need for its storage! And, that is where WD steps in with its range of solutions to meet the requirements of businesses of all sizes and individuals, Khwaja Saifuddin, Senior Sales Director - South Asia, Middle East & Africa, tells *Nirmal Anshu Ranjan* of Elets News network (ENN)

Tell us about WD, its global footprint and its relevance for India.

WD, a Western Digital company, is a leading developer and manufacturer of digital storage solutions. We develop high-performance hard disk drives that are deployed in desktops, laptops, enterprise computing systems, and embedded systems. We also offer an attractive range of portable drives, media players and personal cloud solutions.

Headquartered in Irvine, California, WD marks its presence in major markets across the globe and continues to expand into new markets and regions to facilitate growth and development.

With a boom in the ICT industry in India, there has been a significant increase in data generation in the country. This has led to an increase in the demand for reliable and secure data storage solutions. Through research and innovation, WD plays an important role in catering to the demands of individual users as well as businesses across various sectors.

What are your best selling products/ services, and how are they different from others?

We offer to our customers 'the power of choice'. We have classified our storage into 'easy to recognise' colours that give customers the power to choose the right product for their needs. WD Blue for everyday use, WD Green for capacity, WD Black for performance, WD Red for network attached storage (NAS) and WD Purple for surveillance. WD offers more than a one-size-fits-all storage solutions.

Beyond offering the largest range of really innovative and great-quality products, we stand by our products and consumers with top-notch after-sales service and warranty support across India. We believe that a user should be

able to get a replacement product with the same ease as he purchased his product. WD provides 'WD Express', a door-to-door replacement service that ensures that in case a customer's product has to be replaced, it is easy to do so. With WD Express, the product is collected from the user's address and once it passes our warranty criteria, a replacement drive is then delivered to the user at the same address. A customer can also drop his product at one of our 74 drop points spread across India and then, once his product has been processed, a new product will be delivered directly to his doorstep.

What are your offerings for start-ups and enterprises?

Start-ups require storage solutions that are reliable, easy to install and easy to use. With WD My Cloud EX2 and My Cloud EX4, users enjoy these features, and also have the freedom to store and access data from any location on any device and offer complete control to the user over the business data. Further, our NAS drives, WD Red and WD Red Pro, enable businesses to create a NAS set-up and have a safe and easy access to data within the network. These drives are available in capacities of up to 6 TB and can be used in a variety of bay combinations, thereby providing sufficient capacity to the start-ups.

Large enterprises usually require capacity, reliability and security above everything else. Our data centre drives, WD Re, WD Se and WD Ae, provide solutions to their storage requirements. While WD Re drives provide durable capacity storage for high-availability deployments, WD Se drives provide optimal storage for NAS and scale-out architectures and WD Ae drives provide cost-effective, energy-efficient Hard Disk Drive (HDD) cold-storage solution.

How do you relate with the government's 'Digital India' and financial inclusion programmes?

The Digital India initiative is expected to increase the amount of data we generate every day. The increased connectivity provides impetus to the adoption of gadgets like smartphones, computers, laptops, tablets etc. While all laptops and computers have internal drives that we offer, our My Cloud range of personal cloud products and My Passport wireless drives offer extended storage for smartphones and tablet users. The government's financial inclusion programmes such as the Jan-Dhan Yojana will require the government to provide infrastructural facilities like internet connectivity, computer education etc. in rural areas. An expansion of this infrastructure for the fulfilment of financial inclusion programmes will once again lead to increase in data generation. Our data center drives will be useful for data centres that are likely to be developed as part of these initiatives.

> Beyond offering the largest range of innovative and great-quality products, WD stands by our products and consumers with top-notch after-sales service and warranty support across India

Security of data is a big concern globally. How do you ensure this in case of external data storage services?

WD understands how crucial security is while handling and dealing with data, and offers personal cloud solutions, so that the control of data lies with the user who owns that data. This mitigates the threat of unauthorised access to the business-critical data. With the WD Security Utility, users are provided with the ability to set password protection and hardware encryption for their drives to avoid breaches. In addition, with WD SmartWare Pro automatic backup software, users can back up their data without any hassle and prevent data loss.

How does WD intend to increase its footprint across sectors in India?

WD is already a preferred data storage brand in metros and non-metros across India. To further expand our reach in the smaller cities, we tour these places regularly to address and understand the growing demand for our storage products in these areas and introduce solutions to cater to these needs. We spend considerable time with our local channel partners in educating, training and addressing their concerns. In addition, mall activations in cities across India enable consumers to familiarise themselves with the features and usage of our products. We also use the social media extensively to reach out to customers and address their queries, if any. Recently, we introduced an application on Facebook through which customers can avail warranty service straight from the platform. eGov

NIIT Eyes Share in
NEGP 2.0 PIE

Having participated in a number of government projects, now the company has set its eyes on the projects heralding the next phase of eGovernance in India, *Deepak Khosla*, President - Asia & Australia, NIIT Technologies, tells *Dr Ravi Gupta*, Editor-in-Chief, eGov, and *Souvik Goswami* of Elets News Network (ENN). Excerpts from an interview

NIIT Technologies has global footprint in several sectors. How do you think the Government of India can benefit from your global experience in use of IT?

NIIT Technologies is a full-spectrum global IT solutions company addressing client requirements across various continents like America, Europe, the Middle East, Asia and Australia. Our service offerings encompass Application Development and Maintenance (ADM), Infrastructure Management Services (IMS), Digital Services and Business Process Management (BPM).

We have supported many global organisations in using Information Technology effectively to enhance productivity and reduce costs. Our global knowledge and local market expertise across focussed verticals have been leveraged extensively for critical projects for the Government of India. One such project was the implementation of an e-Auction platform for the India Tobacco Board. In this project, we brought together our ADM and IMS knowledge on one platform. Our e-Auction platform helped the board to come up with a unique outcome-based pricing model, which sets a classic example of bringing our overall expertise to India. We have been successful in customising our platform for procurement and auction developed in Singapore for India.

Worldwide, we have strong capabilities in SAP as well. Thus, we have come up with this mastery in India in specific areas, such as public finance management, sales tax, etc. These are new-dimension products of SAP and we are one of the few partners in Asia who have successfully implemented them for various organisations.

Tell us more about NIIT Technologies' capabilities in the area of public finance and the way it has impacted government efficiency as well as citizen transactions.

There are two areas where we are seeing lots of initiatives being undertaken by the Government of India: one is for bringing reforms and transparency in managing finance, and the other, towards efficiency enhancement. A Comprehensive Financial Management System (CFMS) programme is being run across several states in the country. We have taken a modular approach for implementing CFMS. Partnering with SAP, NIIT Technologies has developed a Futuristic Enterprise Class solution intended to streamline and modernise the management of the state's finances. It is a decision support system that ushers in effectiveness, efficiency, transparency and accountability in the public finance management system across the verticals in a state; it is an integrated finance and expenditure module starting from treasury to wages. CFMS is a transformational programme with a significant programme size and magnitude.

The Government of India is talking about implementing IT on a large scale for better governance. How, according to you, the government can partner with the private sector to benefit from their skills?

In my opinion, the government, along with private companies, needs to collaborate more to increase efficiency. We need lots of change drivers within the government to lead and push any initiative to its logical conclusion.

There is much talk about NeGP 2.0. What is this programme all about and how can a company like NIIT Technologies play a role in it?

NeGP 2.0 is a programme that aims to take eGovernance in the country to the next level by implementing new-age technologies and platforms. Moreover, it attempts to replicate previous best practices, thereby, creating more synergy among various departments and ministries.

NIIT Technologies can play a vital role in this programme with our proficiency in various domains, including Smart Cities, Public Finance, Commercial Taxes/ GST, e-Municipality, GIS and Analytics, Crime and Criminal Tracking Network and Systems - CCTNS 2.0 (SMAC Integration & Smart Policing) and ERP in states/PSUs.

Do you think that the 'Digital India' campaign will help in this?

Change is always difficult. We have to recognise that it won't be easy to shift from a manual way of working to completely dive into technology. In this context, let me remind you about a 25-year-old scenario when there were strong protests against computerisation. Imagine today's banking industry without computers and technology! Today, we are at a different stage where we witness multiple challenges that need to be addressed, keeping change in mind. These challenges cannot be buttonholed by the vendor and requires government intervention.

Do you think that Indian companies as a whole have done enough to sensitise the government machinery on the benefits of usage of IT?

I think awareness is there and we can see people at the top being guided by vision. However, the challenge is to see the vision getting translated into reality. It is a standard example

> There are two areas where we are seeing lots of initiatives being undertaken by the Government of India: one is for bringing reforms and transparency in managing finance, and the other, towards efficiency enhancement
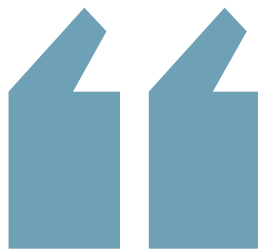
of vision versus execution. Hence, I feel that there should be more awareness and workshops should be held in a more participative and collaborative manner. If we take examples from other countries, we can see that public-private partnerships have been more collaborative in nature.

What is your suggestion for a magazine like eGov, which can play a pivotal role in creating awareness on eGovernance in the country?

I think the eGov magazine is positioned uniquely and can play a huge part as a change agent with its wide readership.

Compatible IT Solutions
YOU CAN AFFORD

With IT penetration reaching the revolution stage in India, enterprises are not looking for just any effective solution, but also for those which are both effective and compatible with maximum number of technologies and come with smaller price tags, says Shashank Thapliyal, Director-Sales (Government Vertical), EnterpriseDB, in an interaction with Elets News Network (ENN)

Tell us about the EnterpriseDB and its operations across the country.

EnterpriseDB is the only worldwide provider of enterprise-class products and services based on PostgreSQL, which is the most advanced and independent open source database. EDB, headquartered in Pune, provides Postgres Plus products and solutions to both government and corporate customers like the National Informatics Centre (NIC), Centre for Artificial Intelligence and Robotics (CAIR), Centre for Development of Advanced Computing (C-DAC), Bharat Electronics Limited (BEL), Electronics Corporation of Tamil Nadu Limited (ELCOT), Kerala State IT Mission, RajCOMP Info Services Ltd (RISL) and many others in India.

In today's neck-and-neck competition, why do you think that EDB solutions have an edge over others?

EnterpriseDB provides the most popular enterprise-class features found in the leading proprietary products, but with a lower cost of ownership across transaction-intensive as well as read-intensive applications. Advanced Server also enables seamless migration from Oracle® that saves up to 90 per cent of the cost of typical migrations.

A trend has been observed in the last five-six years that businesses and organisations are looking for cost-effective solutions on each layer of overall IT stack. Therefore, that's where EDB has hit the right chord by providing cost-effective and equally competent products on most cost-effective layer of the whole IT stack - the Database.

We choose only the most used features of commercial databases globally and incorporate them in our product. Typically, this ensures that the end-customer pays for the features, which he wants to use and does not have to even pay for features built in a product, which are not of any use to him. Our technology is based on open standards, so we are compatible and we can integrate, replicate and migrate to and from any other commercial database.

EDB adds enterprise features for (i) Security and Compliance (row level security and auditing), (ii) Performance (scalable partitioning), (iii) Application Development (function packages, array handling, user-defined objects), (iv) DBA tasks (high-speed bulk data loader, extended catalogue views), and (v) Oracle Compatibility.

The government is stressing on the use of IT in every sphere of human activity. What role do you see there for EDB?

With Prime Minister Narendra Modi's Government emphasising on 'Digital India' campaign and greater use of technology, requirement for technologies compatible with other technologies, and those that do not lock the user to their own standards are needed. Cost-effectiveness also counts here, as the technology use is set to go down to the taluka level.

We are best suited to be a part of this initiative as our technology is based on open standards and we help the end customer save up to 80 per cent on database management and running costs.

Cost-effectiveness is a major factor here, for the government has to provide a large number of G2C (Government to Citizen) services. This, in turn, saves tax-payer's money being spent on these projects.

What are your business plans and strategies for future growth?

We are going to target the database market with more new solutions for Automatic Failover Management, recovery tools, replication and customised consulting for the customers on Postgres Plus database. We are also planning to get our database solutions certified by major independent software vendors (ISVs) and application vendors globally. We are now also in the Leaders Quadrant of Gartner for the Relational Database Management System (RDBMS) solutions. **egov**

Effective Solutions at
COST-EFFECTIVE PRICES

OpenIAM - Identity and Access Management – is a platform that offers solutions for improved security at lesser operational costs and improved end-user productivity, says **Bibhuti Kumar Jha**, Country Manager - India, Middle East, Singapore and Israel, OpenIAM LLC, in an interaction with Elets News Network (ENN)

Tell us about openIAM and the products and services that the company offers.

OpenIAM was started in 2008 in the United States. We felt that the Identity and Access Management (IAM) solutions available at that time were very complex, having higher licence costs and quite expensive to deploy. The use of these solutions became completely impractical for most mid-sized organisations and several other organisations in the emerging markets. We started OpenIAM because we felt that we could deliver a comprehensive solution that was significantly easier to use at a much more attractive prices.

How do you think OpenIAM is relevant to India and has an edge over its rivals?

The market in India is changing and an increasing number of companies are demanding IAM solutions. These companies are looking for cost-effective solutions that could integrate both in-house and cloud systems. They also want capabilities such as One Time Password (OTP) and Access Governance. This type of functionality from the large vendors is often cost prohibitive and the products from new players in the market lack depth and maturity. But OpenIAM offers a comprehensive solution at much less total cost of ownership.

Which segments in India does the company cater to?

OpenIAM solutions are used in a wide range of industries, and are not confined to a particular vertical. However, we have seen comparatively larger scale of adoption of our products in the sectors like the Banking, Financial Services and Insurance (BFSI), Manufacturing, Telco and Healthcare.

Data and information security is a huge concern these days. How does the company address the issue?

We offer quite a few functionalities to manage information security concerns. These include:

- Managing the user lifecycle, where we can interface with a company's HR Systems and create users when they join a company and remove them the day they leave. This type of de-provisioning allows companies to ensure that there are no doors open for former employees to access the network.
- Embedded strong authentication.
- Access to review and certification, which allows managers to review the access that someone has at any moment in time. We can also detect when a user in a particular type of job has more access than other people in their job.
- Single sign-on, which improves the user experience, and also eliminates the need for users to remember multiple accounts and passwords.

These tools help manage access to IT resources. Later this year, we will be adding additional tools to further protect critical systems within an organisation.

How do you intend to increase your presence in an emerging market like India?

India is an important market for us. We have already started to build our sales and support infrastructure here. We will expand it to include product-engineering resources as well. The business development team has already started to create a partner network that consists of regional partners as well as global integrators, with whom we have large deployments. All of these activities are helping us develop a presence in India that will reach a wide range of customers.

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In the land of
UNLIMITED POTENTIAL

Overcoming the challenges of large population size and huge geographical expanse, Uttar Pradesh has been moving firmly on the path of e-Governance, and also giving due thrust to electronics manufacturing in the State. In recognition of the excellent work done by the State Government, Elets Technomedia Pvt Ltd, in association with the Department of IT & Electronics, Government of Uttar Pradesh, organised the 2nd e-UttarPradesh Summit, one of the largest and most prestigious IT events, on 27th January 2015, in the historic city of Lucknow.

Here we reproduce snapshots of the speeches of various dignitaries and stakeholders.

Inaugural Session

Shri Akhilesh Yadav
Hon'ble Chief Minister, Uttar Pradesh

The success of central government schemes like 'Make in India' is not possible without the active participation of states. Uttar Pradesh is always committed to actively participate in any scheme of the central government for public well being. At a recently held Chief Ministers' meet in Delhi, I came to know that UP has opened the maximum number of accounts under PMJDY (Pradhan Mantri Jan-Dhan Yojana) and also maintained the record of opening maximum number of bank branches. In fact, UP is quite ahead in agricultural production and making efforts to surge in the areas of industry and infrastructure.

In the area of infrastructure, Lucknow-Agra-Noida Expressway is the biggest expressway of its type in India. All the major companies of the world have offices in Noida and Greater Noida. We have helped Samsung to grow 360 degree in Uttar Pradesh. The development of IT parks in Lucknow and other cities is underway with the help and assistance of central and state governments.

The State has great demographic dividend in the form of its population, so 40 lakh youth will be trained under the Skill Development Mission of Uttar Pradesh. The development of manufacturing industry in the State will lead to development of other sectors as well.

Jiwesh Nandan
Principal Secretary, Department of IT & Electronics,
Government of Uttar Pradesh

Uttar Pradesh has become an important player among the Indian states in the IT and Electronics sector. According to the vision of the Chief Minister of Uttar Pradesh, Shri Akhilesh Yadav, we have tried to reach places in the interiors of the State to make those IT enabled. Proliferation of IT to common citizens that started on 10th August 2012 has reached a stage where 3 crore 70th lakh certificate is set to be given to the recipient by the Chief Minister. The scheme has generated huge job opportunities in the State in the form of CSCs and Lokvani Kendras for every six villages. There are now a total of 18,000 CSCs operating in the State.

Ashok Chandak
Chairman, Indian Electronics & Semiconductor Association (IESA)

The Indian Electronics & Semiconductor Association (IESA) is a body with 250 member companies and more than 20 lakh engineering professionals working locally as well as globally for product development. Electronics can change India, that was the vision we started with and we are witnessing that electronics is impacting every sphere of life. Of the $90-billion electronics market in India, $65-billion products are imported and the rest are locally made. This industry is expected to reach $400 billon and create 2.5 crore additional jobs in the market. In response to the 'Made in India' call from the PMO, the efforts made and sincerity shown by UP is really laudable.

Pankaj Mohindroo
National President, Indian Cellular Association (ICA)

The National Policy on Electronics is hard work of three years. Many of my colleagues in the UP IT & Electronics Department and DeitY at the Centre have made huge contribution to formulation of this policy. It is the last mile that has to be covered. Work on the UP policy has proceeded in a very consultative manner in coordination with Mr Jiwesh Nandan. Things are well established and platform is ready to launch mega programme of Electronics and IT industry development in Uttar Pradesh. However, 24x7 quality power and proper implementation and follow-ups of MoUs is very necessary to carry out Electronics industry development.

Dilip Modi
Chairman, Spice Mobility

One of the most popular electronic commodities in present time in India is mobile phone. In India, around 30 crore mobiles are sold every year and most of them are manufactured in China. With labour costs rising in China, about 15 crore mobile phones can be constructed in India, especially, in the state of Uttar Pradesh that has the largest number of mobile phone users. Similar to 'Make in India' programme of the central government, 'Make in UP' programme should be introduced. Under the leadership of Chief Minister Akhilesh Yadav, two schemes of Kushal Vikas Mission and Employment to Youth providing a basic environment could help in developing a mobile manufacturing hub in India. Shenzhen, one of the richest cities of China has emerged from a village to a mega city in a span of 30 years. In similar fashion, the city of Noida can be developed under the leadership of the Chief Minister with a 30-year long vision.

Hyun Chil Hong
President and CEO, South East Asia, Samsung India Electronics

Uttar Pradesh is a very important State for Samsung. The company has its manufacturing unit and research centers in Noida. Currently, 11,000 Samsung employees are working in UP and we are also looking forward to create better job opportunities in the State. The Noida facility of the Samsung is one of the best facilities, globally, for electronic goods manufacturing. Samsung is also the largest private tax payer to the UP Government. We are looking forward to cementing this relationship between UP and Samsung further more.

H.E. Joon-gyu Lee
Ambassador, Embassy of the Republic of Korea

It is a pleasing experience for me to be here in Lucknow, as I have an ancestral background from my mother's side from UP belonging to Ayodhaya. As I understand, this event is organised by the UP Government to establish the state with a competitive edge. It is investor friendly and with the best infrastructure for development of IT and Electronics industry. Korea already has a presence in the State in form of companies as Samsung and others. India is a favorite destination of investors across the globe, who think it to be the right spot for business growth, when the world economy is facing recession. Every country is trying to have better relations with the Indian Government and progressive states as UP. The State of UP has facilitated Samsung's second wave of expansion.

Rita Teaotia
Special Secretary, Department of Telecommunications, Government of India

Uttar Pradesh has a potential of robust growth. eUP Summit is the right opportunity to ponder and discuss the immense scope of UP in the coming times. However, for the growth of both 'Digital India' and 'Make in India' schemes, infrastructure is an important area to work around, and it is a thrust area for the State of UP also to move ahead. A clear policy is also required in order to avoid the delay in laying down IT infrastructure, otherwise it escalates costs. In building construction by-laws and municipal bodies' laws, the provision for basic IT infrastructure is mandatory.

R S Sharma
Secretary, DeitY, Ministry of Communications & IT, Government of India

The central government is ready to offer all support to the Government of UP to develop the IT and Electronics industry in the State. According to the current statistics, the total consumption of electronics items in our country costs around $100 billion that works out to approximately ₹6 lakh crore, annually. However, domestic manufacturing of electronics goods is approximately of $30 billion, of which only 10 per cent we do in the form of value addition. This way, we produce only 15 per cent in India and the rest is imported. As the consumption of electronics item is on the rise in India, it is estimated that by 2020, the total consumption of Electronics goods in India will see a fourfold increase in consumption. If we don't make efforts to improve the quantity and quality of electronics manufacturing in India, our import of electronics goods will surpass our oil import.

Alok Ranjan
Chief Secretary, Government of Uttar Pradesh

I am happy to see that this e-initiative under the leadership of Honourable Chief Minister, Shri Akhilesh Yadav, has been attended by such a huge gathering comprising a large number of eminent guests like you. The Chief Minister had envisaged that economic growth of UP cannot be achieved without industrial growth of the State. This industrial growth will lead to a rise in the economic status of the people of the State as well as enhance per capita income of the people. However, to develop a congenial environment for growth, we are working day and night and investing lavishly in infrastructure, IT and Electronics.

Smart Cities: Enabling Growth, Changing Trends

Shekhar Agarwal
Senior Vice President, Vodafone

In the next two decades, 70 per cent population of India would be living in cities, thus increasing the pressure on already overcrowded cities. This will lead to complete breakdown of essential resources as water, electricity, etc. By 2020, India would be requiring 500 more cities to accommodate the migration happening from rural to urban areas. The building block of future cities would be parking, travel, ticketing, tourism, maintenance, quality of air, digital signage, sensors, CCTV camera, etc.

Different experts give different names to a city. A Greenfield city is built from a scratch, while a Brownfield city like Jaipur requires development retaining to keep its flavor intact, whereas Whitefield cities like Gurgaon have potential to grow immensely. The Whitefield city approach is more suitable to Indian conditions where ICT-enabled solutions help cities run smoothly. ICT will reduce consumption cost and let cities deliver the resourceful G2B and G2C services. Vodafone helps smart cities run in sustainable manner in several ways. The 'Digital India' campaign is an effort on the part of the government to communicate with citizens. Vodafone helps government and civic agencies to plan, monitor and execute smart cities through its solution support.

Rama Raman
CEO, Noida Development Authority

The importance of the smart cities can be understood from the fact that 30 per cent population of the country living in cities generates 60 per cent output. As the pace of urbanisation is quite fast, this is the right time to plan cities of the future. The primary objective of the smart city of the future should be to provide a sustainable living environment without worrying for amenities like water, electricity, sanitation, transport, etc. Considering the above discussed factors for living in a city, a smart city, however, should have a competitive edge, sustainability and capital.

Khwaja Saifuddin
Senior Sales Director - South Asia, Middle East & Africa, Western Digital

We are a $38-billion company based out of the US. Our head office is located in Irvine, US and manufacturing units in Singapore, Thailand and Malaysia. We are present in people's daily life. Half the world's total data created, whether in personal space or professional space, is stored in WD devices. Smart city is the city, where digital technology is embedded in every functionality of the city. A smart city generally contains smart governance, energy, building, mobility, infrastructure, technology, healthcare and a smart citizen. In smart cities, a smart citizen will use intelligent apps on his smartphone, and the smartphone data will be parked on enterprise data storage facilities.

Neeraj Gill
Group Director, Microsoft India

The basic idea of smart cities can be understood from the fact that all of the world cities are situated on only 2 per cent of the total land mass available, but uses 80 per cent of the Earth's energy. However, with the rapidly increasing urban population, estimated to be 60 per cent of total world population within next five years, the pressure on cities whether Green or Brown field has increased immensely. However, in a smart city, ICT-enabled solutions can make the cities smarter through Cloud-based solutions and help cut down a portion of the increasing trouble for cities.

City planners should look forward to people-centric approach while using the cloud. In smart cities, cloud is a necessity, as it offers viable financial option for developing a smart city. For the purpose of delivery of services, public as well as hybrid cloud can be used. Microsoft, as a service provider, is developing a good number of data centers in India and investing in cloud. Smart city planners can take advantage of the Microsoft data centre services.

Naval Khosla
Technology Leader, Industry Solutions (Smart Cities), IBM

IBM has engagement in more than 2,500 cities, where it has offered services and solutions for integrated services platforms. Chip and devices integration with network has raised levels of instrumentation. However, the introduction of intelligence into devices to bring a feel and look of a smarter city is a matter of optimum importance to the idea and concept of smarter city. IBM is working to that end. It has an idea and proposal for the sort of command and control system that could take care of inter-connected activities in the city and respond promptly to any problem rising in a specific area and offer solutions promptly. Traffic predication is one of the solutions using analytics, which can predict where the traffic jams could occur, etc. Solutions like this help a city become smarter and lively.

Prashant Choudhary
Director, CA Technologies

For the past 10 years, CA Technologies has technology partnership with Uttar Pradesh and offers monitoring services for SWAN and the State Data Center (SDC). It is the mature layer of smart cities that we have discussed over here. As for the sensing layer, it is used for monitoring entire sensors running through the city. As the smart cities will be data-driven, a most feasible communication layer is another way to let the data successfully run through the cities. State Data Centers are one such example that can be used as a model for central command in smart cities to successfully run such cities. Service layer will work as an engagement between government and citizen.

Smart is that area where you take care of people, energy, transport, communication, etc., using IT. If IT is not performing well in a smart city, then any segment like education, utility, transport, waste management and traffic management will not be able to deliver. Another important development occurring in the present scenario of communication setup is moving from the application environment to app environment. Nowadays, most of the services are offered through hand-held devices. All the government services including the power utility bill payment and getting other benefits from the government sector can't be taken care of with properly-managed IT infrastructure for apps.

Transforming Governance Through IT

Arvind Kumar
Principal Secretary, Medical Health and Family Welfare Department, Govt of Uttar Pradesh

The first major changes to the websites of Health Department were aimed at making them more information-rich. The next step of modifications made to the website was to make them accommodative, according to the provisions of RTI. The most recent changes undergoing in the Department's websites is their modification according to their service delivery models and engagement with various stakeholders engaged with the Health Department. One such example is a website of the Department made according to the PCBNDT Act for registered and unregistered ultrasound centres with proper feedback facility and updated information for public. To bring transparency in distribution and storage of medicines, a transparent online system has been formed with records of medical stores

Anand K Singh
Regional Head, Canon India Pvt Ltd

With such an extensive discussion about workflows, processes and systems, India is one of the largest analogue countries. Anonymous information data and content is lying in rural areas, offices and godowns in hard form. We need to convert that data and content into digital format to be used in processes and workflows. Canon is helping government utilise that by converting them into digital format.

Rajeev Magotra
Head-BMT, RICOH India Limited

Some of the major projects which are underway through our participation are eDistrict projects and the Department of Postal & Telecommunication modernisation project across the country. Under the modernisation drive, such machines are being put to use, which would integrate PMJDY and other banking and financial services. Then these would be offered to the community at large. We have also participated actively in the UID programme, and in Uttar Pradesh, we are doing enrolment in many districts. We are working as a UID seeding agency as well.

Partha Sarthi Sensharma
Secretary to Chief Minister, Uttar Pradesh

The efforts of introduction of ICT in the system have been in progress for the last 10 to 15 years, and the initial steps taken were in the field of e-Governance and G2C (Government to Customer) sector. There were Lokvani and Gyandoot centres that were doing reference monitoring of projects. Both were absorbed as the CSC centers by the IT department of the government. For the last two years, the State of Uttar Pradesh has taken lots of initiatives in the area of e-Governance through steps like SWAN, State Data Centers, Business Process Engineering, etc., mainly targeting eDistrict and G2G projects.

Manish Tandon
MD, Questa Software Systems Pvt Ltd

Industry biggies like Canon, Microsoft and IBM are principal companies that make solutions. The solutions made by these companies generally get delivered to end customer by business partners like us. As a citizen, I wish to get all my services delivered at a single window. On cloud, where client and server limitation has diminished, the information can be accessed and retrieved on smartphones, iPads, etc. However, as an MSME, we expect from government a single window for services under e-Governance model as well as exemption from dual taxation in the form of product price as well as service tax.

SMAC (Social, Mobile, Analytic and Cloud) IT & Beyond

Ramendra Verma
Partner, KPMG

Social Media has impacted in recent time both dissemination and retrieving of information. According to Moor's law, the intelligence of machines is increasing for the last three decades, when processing speed revision takes place every 18 months. Common people and businesses are also adopting technologies on a faster pace. For the government, it means citizen with better network and accessibility, though government structures are still traditional and rigid. To sort out the situation where the citizen has more free participation in free information, the government needs to make its processes more citizen-centric rather than department-centric.

Deepak Khosla
President, APAC, NIIT Technologies Ltd

An average user spends around 25 percent of time daily on the Internet, Facebook, Google and other such social media platforms. SMAC (Social, Mobile, Analytic and Cloud) plays a crucial role in this regard. Most of things are these days managed through the Internet of Things (IoT). Now, 40 per cent of the railway booking is done through the Internet and for flight tickets, it has reached the level of 90 per cent. Ticket booking has developed into a self-service driven automated platform. Things are moving and counting on an outcome basis where the payment is made for results only. Most of the services in future would be used by the 40 per cent of population that is below 30 years of age.

Pranay Gupta
Co-Founder, 91, Springboard

SMAC is the way to ensure that technology is being used attentively and effectively, and startups are making the most of it. Now, smartphones are no more a second screen, as they are elaborately and extensively used for activities like data collection, sharing and even, to some extent, making immediate presentations for business meets. One such example is crowd sourcing and using data on a single SaaS-based Windows platform on the cloud to maintain inventory for small retailers across the big e-Commerce platforms like Amazon, Snapdeal, Flipkart, etc. Another example of cloud use by startups are the business solutions offering real-time reporting of a tweet. A recent survey has revealed that customer care centers now pay a prompt attention to tweets instead of e-mails and phone calls.

Prof Raghunandan

The constant need of innovation to frequently introduce new products is leading to the 'process of entrepreneurship' on regular basis in India. The process of entrepreneurship leading to growth of startups occurs from coming together of many players. The government is one big player in this ecosystem and plays the role of an enabler. The role of government moves around bringing about flexible regulatory and policy framework for startups to grow. The second important aspect is coming together of players like corporate, education sector and investors to innovate new products and services. And, the third is the educated population with lots of confidence that we have already in abundance in our country.

Vivek Reddy
CEO, Geostat

We are into mobile application development for the last two-three years, which started with application of a government project where we were given the responsibility to geo-tag the beneficiaries of Telangana housing project on Google Map with images and details, so that a beneficiary already in possession of a property does not apply for another. This objective was achieved by using the smartphone platform in the time span of one-and-a-half months. This way, use of social media and mobile can be used for a variety of purposes and utility integrated with social media

Panasonic recommends Windows 8 Pro.

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