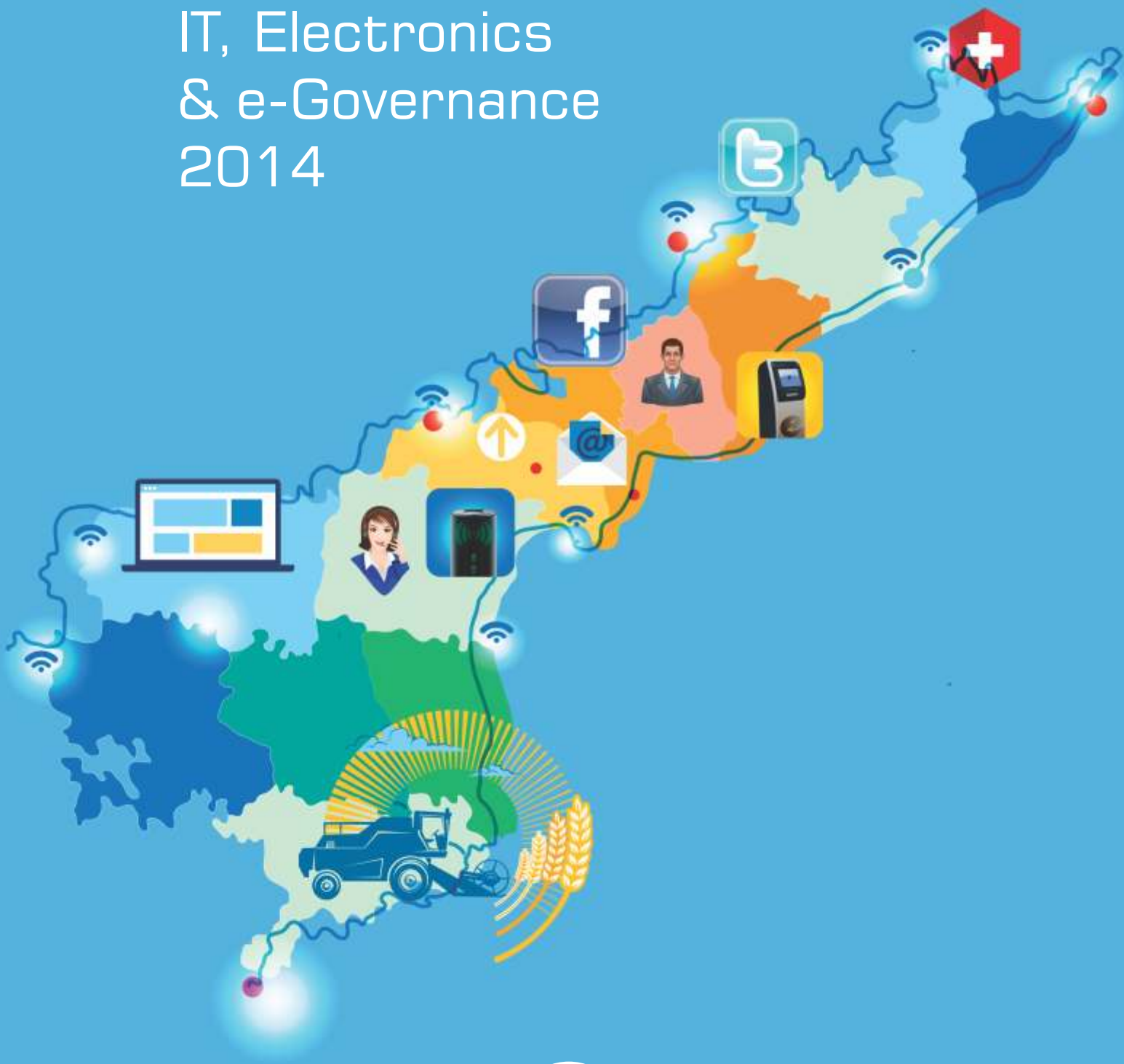
Blueprint for IT, Electronics & e-Governance 2014



Information Technology, Electronics & Communications Department
Government of Andhra Pradesh

NARA CHANDRABABU NAIDU
HON'BLE CHIEF MINISTER
OF ANDHRA PRADESH

MESSAGE

The State of Andhra Pradesh proposes to leverage the power of IT to attain a position of leadership and excellence in the current age and transform itself into a knowledge society.

The Government is committed to promoting the IT industry, which is essential for the development of the 'Sunrise' State. IT hubs would be created at Kakinada, Tirupati, Vijayawada and Ananthapur. An ITIR zone is proposed around Visakhapatnam, as special thrust will be given to make the City the IT capital of AP because of its strategic location and infrastructure.

The IT policy envisages bountiful investment opportunities for the IT industry in starting /expanding their centers to create ample employment opportunities for IT professionals /students passing out of professional colleges in the State. The Government aims to make one person e-literate in each household.

There is a renewed interest from citizens/industry leaders across the world to invest in the new State of Andhra Pradesh. This strengthens our belief in creating an ecosystem that promotes adoption of ICT in various sectors of the economy for enhancing productivity and competitiveness.

I am sure, this blueprint, prepared with due deliberations and consultation with the Industry, would act as a beacon light for the development of IT, Electronics and e-Governance over the next few years.

[N. CHANDRABABU NAIDU]

DR. PALLE RAGHUNATHA REDDY, MSc, MPhil, Phd
HON'BLE MINISTER, GoAP
Information & Public Relations,
Information Technology & Communications,
Non-resident Indian Empowerment & Relations,
Telugu Language & Culture,
Minority Welfare & Empowerment

MESSAGE

I am glad that the ITE&C Department has come out with a comprehensive blueprint for the promotion and development of IT, Electronics & e-Governance sectors in the State. The document identifies the need to bring out 18 policies and frameworks, besides setting up three dedicated Missions to realize the Vision.

The Government proposes single window clearance for new units within four weeks. The policy intends to grant deemed approved status to new ventures if the clearances are not given within four weeks.

Special focus would be laid on Visakhapatnam, to be developed as a Mega IT Hub, and IT hubs would be created at Kakinada, Tirupati, Vijayawada and Ananthapur. An ITIR zone is proposed to be developed around Visakhapatnam.

IT and Electronics sectors are going to be among the important growth engines in the State, given the advantage in terms of manpower and entrepreneurship available in the region.

It will be our endeavour to promote the IT industry so as to realize the vision stated in the Blueprint, in a partnership mode.

P. Raghunatha Reddy

(PALLE RAGHUNATHA REDDY)

J. SATYANARAYANA, IAS (Retd.)
ADVISOR TO GOVERNMENT OF AP
e-Government, Electronics & IT

MESSAGE

The State of Andhra Pradesh is uniquely positioned, with huge challenges and large opportunities, significant core strengths like talent & entrepreneurship, and gigantic resource needs - not only in the IT and Electronics sector but in other sectors too. The preparation of a blueprint is felt to be a strategically important first step when the State is at the crossroads, as it is currently. The result of a series of efforts is in the form of this document, which indicates not only the direction in which to head but also the specific steps to be taken to reach the goals.

A vigorous promotion of Electronics and IT industry, deployment of emerging SMAC technologies (Social Media, Mobile, Analytics and Cloud) and focus on citizen-centric e-Governance projects form the bedrock for the new State and can lead to a “second sunrise.”

The two powerful tools of e-Government & e-Governance as proposed in the Blueprint help the Government to realize its commitment of providing ‘Good Governance.’

(J. SATYANARAYANA)

SANJAY JAJU, IAS
SECRETARY TO GOVERNMENT
Information Technology,
Electronics & Communications Department,
Government of Andhra Pradesh

MESSAGE

Government of Andhra Pradesh has approved the IT, Electronics and e-Governance policy titled 'Blueprint for IT, Electronics and e-Governance, 2014' which lays out the version for using Information Technology for the needs of the common man.

The Blueprint envisages certain time lines and targets for the growth of the IT Sector in the State of Andhra Pradesh. For this purpose, the Blueprint advocates certain key steps to be pursued in mission mode for strengthening Electronics & IT, e-Governance, Innovation and Capacity-building initiatives in the State.

I am sure that the administrative set up would gear-up and rise to the expectations to accomplish the deliverables set forth in the document.

(SANJAY JAJU)

VISION

"To develop Andhra Pradesh as a knowledge society of global repute, with a focus on enhancing the quality of life of its citizens, through high-quality education and healthcare, increased productivity in agriculture and allied activities, creation of requisite employment potential by promoting electronics and IT industries, and above all, by providing good governance."

Executive Summary

The residual State of Andhra Pradesh, formed on 2nd June, 2014, has many challenges confronting it. The new State of AP has to be practically re-imagined and reconstructed in a planned manner, if the hopes and aspirations of its people have to be fulfilled.

The combined State of AP had taken a leadership position in e-Governance and IT. However, the statistics for IT units registered with STPI show that the new State accounts for only 2.05% of the IT Exports of the combined State and 1.83% of employment. The performance of e-Government is quite satisfactory, with 50% of e-transactions occurring in each State. Significant, consistent and planned efforts have to be made if the first two figures have to attain respectability over the next 5 to 10 years.

IT and Electronics sectors are going to be among the important growth engines of the State, given the advantage in terms of manpower and entrepreneurship available in the region. Besides this, e-Government and e-Governance are going to play a pivotal role in establishing the promised good Governance. This blueprint identifies the key determinants of successful growth in the IT and Electronics sectors and promotion of good Governance.

Fairly ambitious targets have been suggested in three identified areas.

To fulfil the aspirations of the people, the following vision statement is suggested:

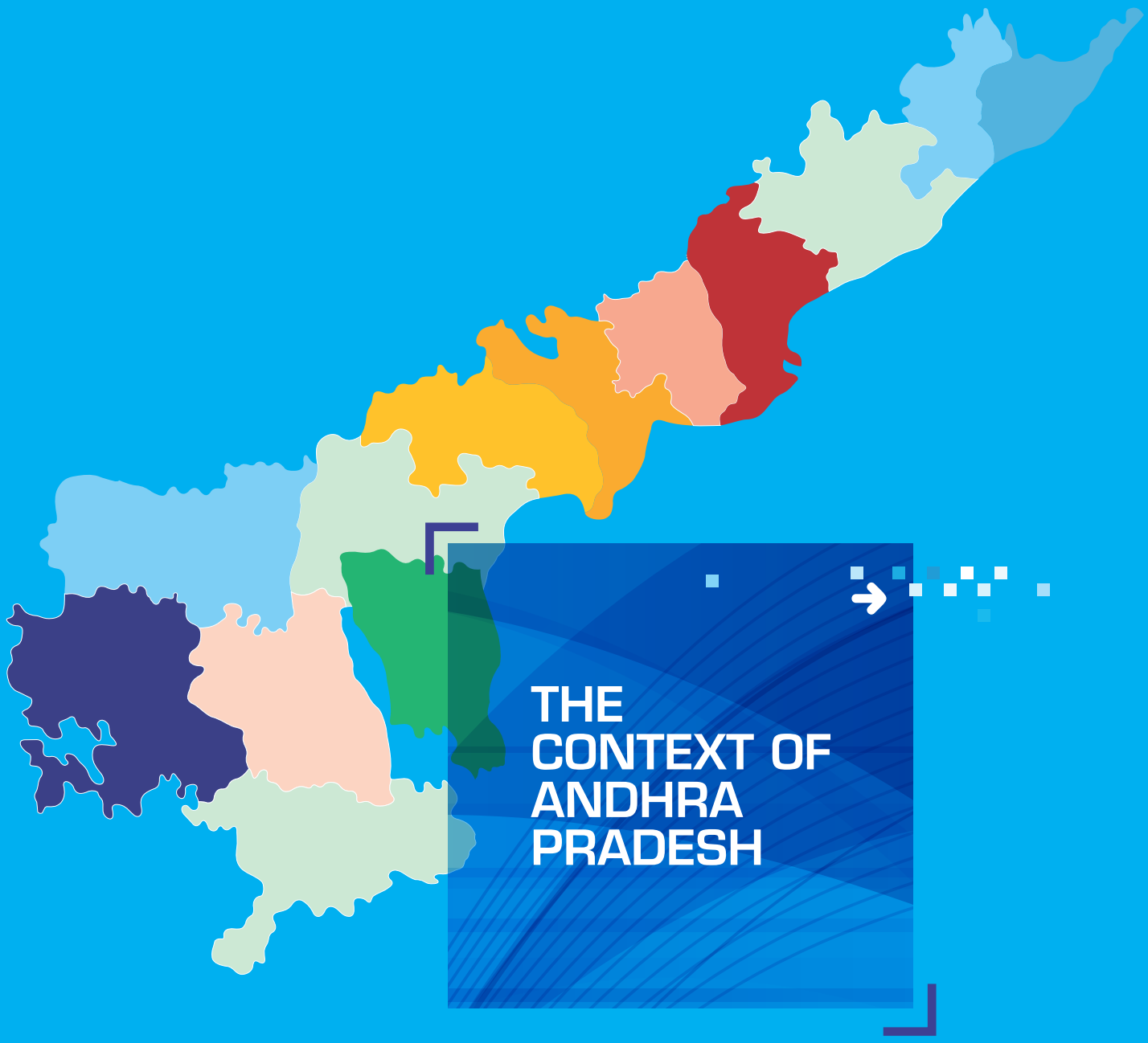
"To develop Andhra Pradesh as a knowledge society of global repute, with a focus on enhancing the quality of life of its citizens, through high-quality education and healthcare, increased productivity in agriculture and allied activities, creation of requisite employment potential by promoting electronics and IT industries, and above all, by providing good governance."

Policies and Frameworks play a key role in helping the State realize the long-term vision. These policies have to be considered and notified, preferably together or in close succession, so as to give a holistic picture of what the State wants to achieve and how. Accordingly, a set of 18 policies and frameworks have been suggested to realize the vision. The objectives, benefits and approach of each policy have been provided at a high-level.

To quickly implement these policies and achieve the envisaged results, establishment of three dedicated missions has been recommended, along with the TOR, composition and budgetary requirements for each. Government support to the tune of ₹1785 crore is estimated to be required over a period of the next 3 years.

The Blueprint has been published on the State Portal of AP, and comments are invited from the general public. Moreover, the document has been communicated to over 100 major IT and Electronics companies and their associations, seeking their inputs. A consultation meet was held with about 200 members of the industry on 30th June, 2014. The inputs received have been suitably incorporated in the document.

The Blueprint, in its current version 4.0, is expected to serve as the guiding document for the formulation of various policies, frameworks and schemes to promote the development of the sector in Andhra Pradesh.

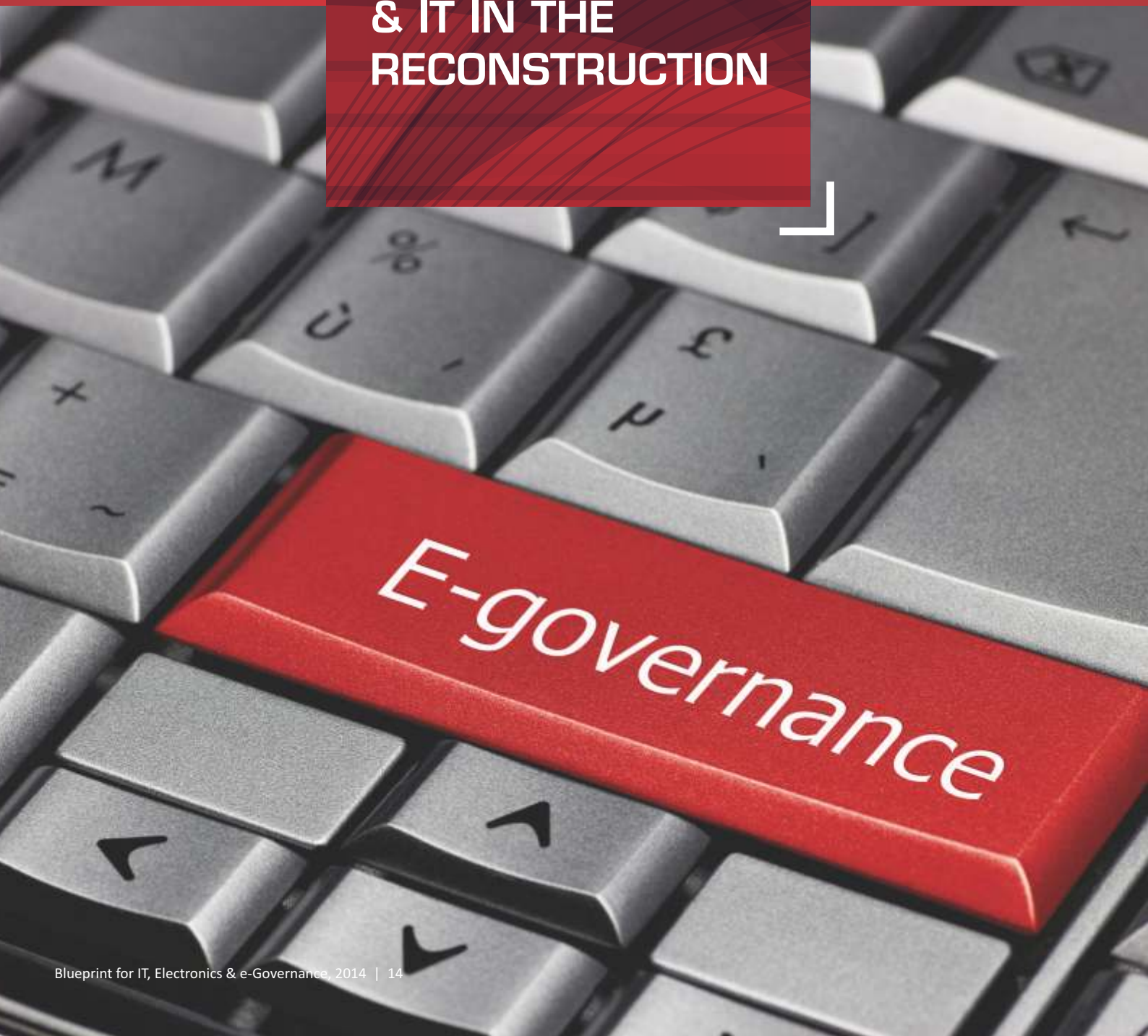


THE CONTEXT OF ANDHRA PRADESH

Andhra Pradesh State has been formed as the residual state after the separation of the Telangana region on 2nd June, 2014. It is the 29th state of India. AP State consists of 13 districts - the 4 districts of Rayalaseema and the 9 districts of Coastal Andhra. Though AP retains the old name, it can be looked upon as a new state. Formation of the new state of AP, therefore, has thrown up a number of challenges for all the sectors of the economy, like the need for developing a new capital city, reorganization of all the departments of the Government, building up administrative and governance structures practically from the scratch, making efforts for the mobilization of resources, creation of infrastructure, generation of employment opportunities, development of transportation systems with their own new hubs and spokes, development of new centres of excellence for education and healthcare, and establishing new infrastructure for communications and information. The faster we pursue all these and more challenging tasks, the better it will be for the well-being of the citizens of the new State.

While there are challenges, there are opportunities as well. The high expectations of the citizens, the feasibility of leapfrogging while developing new infrastructure and systems on a greenfield, taking advantage of the emerging global models, technologies and management techniques, and above all the pressing needs of the new State that can't wait, form the strong drivers for reconstruction. A leadership role has to be necessarily played on multiple fronts if we want to take full advantage of these drivers.

ROLE OF e-GOVERNANCE, ELECTRONICS & IT IN THE RECONSTRUCTION



PIVOTAL ROLE OF e-GOVERNANCE, ELECTRONICS & IT

Providing good Governance, a corruption-free administration, creation of jobs, attracting investments, creation of excellent infrastructure (like power, airports, ports, highways, urban transportation systems) and social sector infrastructure (like educational institutions, hospitals and housing projects), establishing smart cities and construction of a capital city of international class, are among the top of the agenda of the new Government. Of course, most of these initiatives call for investment of considerable financial and managerial resources over the next 3 to 5 years. But a few common threads pass through these initiatives. These are, the effective use of the principles of e-Government and e-Governance, vigorous promotion of Electronics and IT industry, and deployment of emerging SMAC technologies (Social Media, Mobile, Analytics and Cloud) and they form the bedrock for the new State and can lead to a second sunrise.

The following specific reason justify the above assertion.

e-Government has proved, time and again, its capability to transform the quality of delivery of public services in terms of enhanced efficiency and transparency. Today, as distinct from 15 years ago, we have hundreds of e-Government projects delivering thousands of services to hundreds of millions of citizens online or over the mobile in India. Mee Seva (formerly eSeva), Passport Seva, e-Procurement, FAST, CARD and Mobile Seva are but a few examples of such benefits. AP has done pioneering work in the area of e-Government. eSeva, launched in 1999, was the starting point for providing e-Services in a convenient way, with multiple G2C services provided across the same counter. Over the last 15 years, lots of further developments have taken place in AP. Currently, Mee Seva is rated as the best e-services initiative in the Country, in terms of the strengths of its framework, its coverage across the State and the portfolio of services it delivers. There is significant scope for improvement of e-service delivery in terms of improving the quality of service, by adopting the approach of **radical transformation** and focusing on process re-engineering of the back-end departments. The Government should also focus on providing truly integrated services by fusing the work processes of all the Government agencies involved in dealing with a particular service. A new portfolio of Flagship Projects have to be undertaken in a real mission-mode. The magic of e-Government should, this time round, pervade all major Government departments and create a significant impact on the citizens. There should be very few occasions for the citizens and businessmen to visit Government offices for availing any information or services. In this sense, we should move towards a 'less-contact' Government!

e-Governance, on the other hand envisages 'more-contact' between government and the citizens. We are witnessing the phenomenal rise of Social Media as an effective platform, not only for social networking between groups of people, but also as a real-time channel for expressing public opinion on any matter of public importance, ventilating resentment against injustice or lack of probity in public life, besides running several types of campaigns that need mass contact with the public. Just as the Social Media has shaped up as a powerful instrument in the hands of the citizens for such purposes, Governments can as well take advantage of these media in a variety of ways for establishing a participative Governance or e-Governance, which was, a decade ago, only a theoretical concept. E-Governance is a powerful idea whose time has come now. While GoI had, in 2012, come up with a policy on the use of Social Media by Government departments, we have seen very little use of it so far. The leadership shown by the Hon'ble Prime Minister in this regard is a significant pointer to the shape of things to come. We need to establish quickly, a framework and a platform, preferably in a public-private-partnership mode, for realizing the dream of e-Governance or a participatory Governance.

Electronics: Detailed surveys done by GoI have revealed that the demand for electronic products in the Country would be increasing significantly to about US$ 320 billion by 2020. Out of the current annual demand of US$ 80 billion, over 92 % of the products are either imported or assembled from imported components. This situation calls for drastic steps to be taken to boost the domestic

manufacturing of electronics if we want to avoid excessive drain on the foreign exchange reserves and more importantly, avoid near total dependence on imports even for meeting the requirements of our most strategic sectors like defence, space, atomic energy, power, telecom, banking and e-Governance. Realizing this, GoI has come out with a comprehensive National Electronics Policy 2012 (NEP 2012), along with a number of schemes to implement the same. Besides addressing the aforesaid strategic and economic needs, the NEP also envisages creation of an employment potential of 28 million by 2020. AP has all the factors conducive to the development of the electronics sector, most importantly, the talented manpower. It is absolutely essential for AP to participate actively in this national movement.

IT Industry: Andhra Pradesh has been a pioneer in promoting the IT industry during the late 90s and the early part of this century. Hyderabad has become one of the most attractive destinations for IT/ITES industry globally. While some efforts have been made to promote tier-II cities like Visakhapatnam, Vijayawada, Tirupati, Warangal and Kakinada, the progress in that direction has not been significant.

The new State of AP has to exploit its core strengths to quickly promote and develop the IT industry. Some of the core strengths are the availability of highly skilled manpower of this region working in different parts of the Country and the globe, a significant population of NRIs showing keen interest in relocating and/or contributing to the growth of the industry, potential for highly talented youth to establish start-ups and thereby to innovate and to create wealth and employment. All this requires formulation of conducive policies that facilitate and incentivise such reconstruction efforts. A close liaison with the industry, especially NASSCOM, is quite essential in this regard. If properly articulated, marketed and implemented, a new and vibrant IT policy can make a huge difference not only to the growth of the industry, but to the creation of huge employment in the new State.

Andhra Pradesh, the Sunrise State

AP deserves to be called the Sunrise State of India. Literally, it has India's longest Eastern coastline of over 1000 km. More relevantly, it consists of a combination of factors conducive to high growth and accelerated development, like highly talented technical manpower, enterprising population and a dynamic new leadership. These offer immense opportunities for investing in the growth, development and resurgence of a new State.

VISION OF THE NEW STATE

Against the backdrop of the formation of the new State, and the strong drivers for it to fulfil the aspirations of its people, it is essential to create the most appropriate vision for the medium and long-term development of the State. The following is proposed as a vision statement drawn up from the perspective of e-Governance, Electronics and IT:

"To develop Andhra Pradesh as a knowledge society of global repute, with a focus on enhancing the **quality of life** of its citizens, through high-quality education and healthcare, increased productivity in agriculture and allied activities, creation of requisite employment potential by promoting electronics and IT industries, and above all, by providing **good governance."**

The vision statement contains a unique value proposition in the form of an enhanced quality of life for all sections of the population. While the most important determinants of the quality of life, namely education, healthcare, employment, agricultural productivity, and good governance, are directly relevant to IT and Electronics, a large number of other factors, substantive and supplementary have to be identified and worked upon in a multi-sectoral approach.

A further exercise has to be done, to break down the vision into a set of objectives and quantified goals and create an action plan to realize those objectives and reach the goals. While a comprehensive list of such goals can be done through a multi-sectoral consultative process, the major goals relating to e-Governance, Electronics and IT are specified below:

Sl. No.	Major Indicator	Goal to be achieved by 2020
1	ALL G2C and G2B services to be available online, and on mobile	AP to attain the 1st position in eTAAL by 2017 and maintain it through 2020
2	Share in national IT Exports	5%
3	Investments in IT	US$ 2 billion by 2020
4	Investments in Electronics manufacturing	US$ 5 billion by 2020
5	Direct employment created in Electronics and IT	0.3 million by 2018 and 0.5 million by 2020
6	Broadband penetration	Gigabit to all gram panchayats by 2017 and to all villages by 2020

As alluded to earlier...

- The list of indicators includes those directly related to e-Governance, Electronics and IT. A number of important indicators in the other sectors need to be identified and added to the list.
- Each major indicator will have multiple sub-indicators. For instance, indicator (1) on e-Governance entails creating goals for over 300 major services offered by various Govt. Departments and Agencies.

POLICIES & FRAMEWORKS

POLICIES & FRAMEWORKS REQUIRED TO REALIZE THE VISION

A number of conducive policies and simple but effective frameworks have to be put in place, almost as the first step in the direction of realizing the vision. Well-designed policies serve multiple purposes like setting out the intention of the Government clearly to all the stakeholders, enabling to define the responsibilities of the administrative machinery to realize the vision, paving the way for formulation of schemes required to implement the policies, facilitate the allocation of resources to the line departments and agencies, and, importantly, create the environment for transparent decision-making. Frameworks enable a structured approach to implementation, besides uniformity of understanding amongst the various agencies enjoined to implement the policies.

With the above in mind, a set of 18 policies and frameworks have been identified and briefly described below, to realize the vision and goals stated in section (3) above. They are grouped under the broad heads of (i) e-Governance (ii) Electronics (iii) IT Industry and (iv) Supporting policies / frameworks.

A. POLICIES AND FRAMEWORKS FOR e-GOVERNANCE

A.1 ELECTRONIC DELIVERY OF SERVICES ACT:

Objectives

Given a choice, many government agencies prefer to continue with manual mode of delivering services, despite the fact that e-Governance can bring about a sea change in the quality of service. This is basically on account of the fear of the unknown, vested interests in some cases and most commonly, internal resistance. The proposed Act seeks to **mandate** the delivery of all citizen/business services electronically, and fixes a time limit of 3 years to do so. Such mandating is expected to remove the initial hesitation and make all departments to design and implement e-Gov projects in a time-bound manner.

Benefits

As the example of the RTI Act has proved, when a reform has to be introduced across the Government, it is expedient to mandate it through a legislation, and, if advised, **make it a rights-based legislation.** When electronic delivery is mandated, departments find the required leadership, drive and resources to achieve the same. Thereby, the e-Gov programs get a

great fillip. Besides, the legislation fixes specific responsibilities and establishes an institutional mechanism to monitor the implementation.

Approach

The EDS Bill designed by GoI is at an advanced stage to be introduced in the Parliament. 14 State Governments have already passed legislation on Right to Time-bound Delivery of Public Services. GoI has also prepared a Bill on Right to Services. Such legislations/bills are complementary to the proposed EDS legislation. The AP (EDS) Rules, 2011 have been issued in the combined state of AP, through an executive order, under the powers delegated in the IT Act 2000 (Central Act). All these preceding efforts can be relied upon for drafting the proposed EDS Bill in AP. More specifically, the proposed Act can combine the best features of the EDS Bill and the Right to Time-bound Delivery of Public Services Bill of GoI, and the Right to Services Acts of the States that have implemented it well.

It is desirable to include in the legislation, a statutory basis for (i) the institutional mechanism for monitoring implementation; (ii) earmarking of a certain percentage of budget of all departments for implementing the EDS; (iii) mandating technology standards; (iv) providing integrated services; (v) a system of unique identification of citizens and (vi) the imperative of process transformation, as an essential pre-requisite for **good Governance.**

Dependencies

We have to examine the legislative competence of the State Government to pass the EDS Bill, when a similar bill is under the consideration of GoI.

Time line: 6 months

A.2 FRAMEWORK FOR m-GOVERNANCE

Objectives

The Framework for m-Governance seeks to take advantage of the extensive penetration of mobile networks and mobile devices to provide a major portion of e-Services over the mobile. The Framework puts the rural population on a comparable pedestal, if not at par with their urban counterparts, in view of the near ubiquitous presence of mobile in the rural areas. m-Governance provides a 24x7 service at the fingertips of the citizen. The framework facilitates the further development of mobile network infrastructure, but also the ecosystem of mobile apps that citizens can use.

Benefits

(i) m-Governance enables a rapid penetration of services to the rural areas

(ii) It is 24x7, handy, convenient and cost-effective

(iii) Multiple channels like voice, text, MMS, UDDS, GPRS and CBC can be implemented

(iv) It is not adversely affected by power-cuts, unlike the kiosk-based model

(v) It obliges the departments to design and implement lightweight applications, and thereby promotes a significant process re-engineering - a critical success factor for e-Governance

(vi) m-Governance enables a bi-directional mass contact between Government and citizens and forms an essential element in effective use of Social Media by Government agencies

(vii) In the long-term, m-Governance enables an easy transition to Internet-of-Things (IOT)

Approach

The GoI had notified its m-Governance Framework in 2012. Through the m-Seva project, over 5 million messages are being sent/received every day by over 1000 agencies, Central and State. The framework of GoI can be adopted by GoAP, with suitable modifications and the robust infrastructure created by GoI in the form of MSDG (Mobile Services Delivery Gateway) and m-Payment Gateway, can be straightaway used in an enhanced and more systematic manner, through local value addition. There is a need to create an ecosystem of private service providers and app developers so as to make more innovative and rapid use of the Framework.

Provision of m-Services by all Government departments can be mandated through the proposed EDS legislation.

Dependencies: None

Time line: 4 months

A.3 FRAMEWORK FOR CITIZEN ENGAGEMENT

Objectives

Citizen engagement is an essential element of all democratic processes. While the spirit of the 73rd Amendment to the Constitution envisaged participation through the PRIs, it has been found to be not so effective, as the participation of the citizen is indirect and limited. Citizen engagement goes beyond the process of consultation. Unlike the latter, the former is a two-way process, where citizens can actively participate in policy formulation and implementation, rather than merely articulating their opinions. Citizen engagement is not a one-time activity like consultation but is a continuous process spanning the full life cycle of policy formulation and implementation.

Against the above background the framework for citizen engagement envisages creation of an entire ecosystem for engaging the citizen deeply, meaningfully and continuously, from the conceptualization to completion of public policies and schemes. Fortunately, the technologies available today, enable creation of such an ecosystem that manages the citizen-Government relationship, with appropriately designed platforms for participation, visibility and accountability.

Benefits

(i) Citizen Engagement Framework provides a systematic way of managing the Citizen-Government relationship with regard to all matters of public importance and hence enhances, transparency and citizen satisfaction.

(ii) The Framework enables creation of a common platform around which all departments and stakeholder groups can rally and move towards agreed common goals.

(iii) All the major programs, projects and schemes get designed in a citizen-centric way, and therefore stand a better chance of success, besides providing value for investment.

(iv) Government can get continuous feedback on the gaps and deficiencies of ongoing schemes and attempt improvements.

Approach

The GoI had notified its Citizen Engagement Framework in 2012, primarily from the point of e-Governance projects. While it can be taken as a starting point, we need to expand its purview to include all major departments and the policies, schemes and projects, formulated, designed and implemented by them. While designing the ecosystem it is essential to study the best practices documented in the GoI Framework. We need to work on Capacity-building among selected departments and awareness among citizens, establish engagement teams and above all, select 5 to 10 flagship programs of the Government to pilot the Citizen Engagement Framework.

Time line: 4 months.

A.4 POLICY ON PROJECT DEVELOPMENT, PROCUREMENT & PPP FOR e-GOVERNMENT

Objectives

The essence of e-Government is efficiency. However, we see it woefully absent in the implementation of e-Government projects. Major eGov initiatives suffer delays due to delays in decision making, initially at the project conceptualization and development stages and later at the procurement stage. Very often, conceptualization work on a ₹ 1000 crore project does not get started as the decision for selection of a consultant for a fee, which may be less than a crore, to do the initial work gets interminably delayed. The situation calls for formulation of a special policy for meeting this procedural challenge. Likewise, there is a lot of hesitation in designing eGov projects on the PPP model, despite the well-known merits of the latter. Such a policy would remove the aforesaid hurdles and pave the way for faster initiation and implementation of projects, both in the pure play Government Model or in the PPP Model.

Benefits

(I) The policy on Project Development, Procurement and PPP for eGov, would cut all the procedural knots and augur for a faster implementation of a portfolio of projects. In the context of the new State of AP both the factors, namely, speed and large size of initial portfolio are critically important.

(ii) A well designed policy in this area would ensure transparency and strengthen the hands of decision-makers.

(iii) The interest of the industry in undertaking projects on a PPP mode, which is dwindling fast, will get boosted with a well-laid out policy.

(iv) Government can undertake a large portfolio of projects, with limited investments, once the PPP mode is preferred. This is quite beneficial for a new State like AP, which has many contending priorities in the formative years.

Approach

The key to success is an early start on conceptualizing the project. This is best achieved by constituting a Project Development Fund with an initial corpus of about ₹20 crore that can be placed at the disposal of one of the PSUs of the ITE&C Department. Consultants can be selected for all the projects in the initial portfolio, from a panel already created by the PSU or by an organization like NISG, by adopting a quick and transparent process.

As for the procurement, the following steps are recommended:

(I) Constitution of Empowered Committees to take all decisions, with enhanced delegation

(ii) Prescribing time lines for each stage of implementation from concept to completion

(iii) The highly restrictive conditions which act as entry barriers to medium and small players should be removed

(iv) Faster and more transparent procurement methods like e-Procurement should be custom-made for the e-Gov sector and adopted

(v) Projects in the portfolio may be grouped based on comparability of functionalities and entrusted together, more so for the purpose of Project Development and/or preparation of DPRs

(vi) The procurement procedures adopted by Delhi Metro may be studied and suitable principles drawn to eGov sector

(vii) A special procurement model may be designed for Cloud-based implementations, as it is likely to be more cost-effective and quicker in rolling out; Advantage may be taken of the GoI Cloud - MeghRaj - and the clouds established by BSNL and MTNL

(viii) The Government can promote domestic software units by introducing a form of Preferential Market Access in respect of procurements for e-Government; this idea is elaborated in the item C2 below

As for PPP, the successful model of Passport Seva Project of MEA may be quickly studied and adopted for the eGov sector, with suitable further simplifications and improvements.

Dependencies: The reformed procedures will have to be validated with the provisions of GFR and the CVC guidelines on public procurement.

Time line: 3 months

A.5 POLICY ON STANDARDS FOR e-GOVERNMENT

Objectives

Standards are the bedrock on which the foundations of inter-operability are to be laid. Historically, multitudes of eGov projects have been implemented - some of them highly successfully, in Andhra Pradesh. Fortuitously, AP is one of the early States to have recognized the critical role of Standards. All the same, given the importance of concepts like single-sign-on, smoother interface with government for availing a variety of services, and the overarching need for Government to take advantage of big data analytics for policy formulation, standards become all the more important. It is, therefore, necessary to create a policy framework for development, adoption and enforcement of Standards in the eGov domain. Given the blurring boundaries between the services provided by Government and the private service providers, *aka* telecom and Internet service providers, health and education service providers, it is necessary to establish common interoperable standards so as to add to the convenience of the citizens. The proposed policy on standards can also provide for the same. Standards are too many and evolving in their nature, due to the fast-changing technology landscape. Hence, the policy has to be dynamic too. The policy can also emphasize the criticality of Open Standards so as to avoid vendor lock-in and to ensure seamless integration of disparate applications, products and systems developed/deployed by different organizations and vendors.

Benefits

The benefits that arise out of a policy on standards are too obvious. Interoperability, single-sign-on, future-proofing, cost-effectiveness, data portability, enhanced efficiencies, cross-sectoral mapping and analysis, ease of coordination and collation at the national level are some of the more important benefits of the policy.

Approach

Significant work has been done by GoI in the area of Standards. Major areas where Standards have been laid down are Interoperability Framework for e-Governance (IFEG), Meta Data and Data Standards (MDDS), Localization Standards, Biometrics standards for fingerprints and Iris. It is desirable that these are compiled, examined and adopted, as part of the policy. The proposed policy has to focus on keeping a continuous watch on the emerging standards, create self-policing mechanisms for enforcing the standards, and provide for making concerted efforts at developing integrated and joined-up services that put the Standards ecosystem to test and gainful use.

Dependencies:

Standards, as a subject, is within the purview of GoI. Hence, close coordination and synchronization of the work being done by GoI in this area is critical to success.

Time line: 12 months

A.6 CYBER SECURITY POLICY

Objectives

With the increased use of Internet as the medium for providing services, and the near-ubiquitous use of Internet by the citizens, cyber security assumes great significance. The Critical Information Infrastructure is to be guarded more specially so as to ensure continuous availability of critical services like power, transportation, water, medical services, e-Gov services etc. GoI has notified a comprehensive policy on Cyber Security in 2013. All the same, a complementary Cyber Security policy has to be designed for implementation and enforcement at the State level, in respect of the critical services provided by the State Government, some of which have been mentioned earlier.
The objective of the policy is more (i) to ensure the strict adoption of cyber security measures by all agencies dealing with digital assets (ii) to provide for regular security drills and audits (iii) to create enhanced awareness among the citizens through education and publicity (iv) to facilitate the production of cyber security professionals through the educational institutions in the State and (v) to establish robust security for the e-Governance systems in the State.

Benefits

Focus on cyber security is as important as focus on physical security, as citizens, businesses and the Government alike are depending increasingly on digital assets as part of their functioning. This is going to be all the more important and critical, with the emergence and proliferation of Internet-Of-Things, whereby all the devices that have digital intelligence are going to be connected and controlled remotely. The investment in cyber security, therefore, brings a posse of benefits through greater availability of systems and devices, better trust and productivity and better cyber security posture to reap the benefits of the digital revolution and knowledge economy. Investments in HRD for cyber security, likewise, will enhance employability.

Approach

While GoI has been investing consistently in cyber security, the states are lagging behind in this regard. Being closer to the citizens and businesses, the responsibilities of the State Government are more onerous. The approach to cyber security at the State level should comprise of working on several components like aligning with the GoI efforts, establishing counterpart organizations like State Computer Emergency Response Team (S-CERT), Centre for Security of Critical Information Infrastructure, sectoral S-CERTs for critical sectors like power, water supply, healthcare, police, treasuries, e-Governance, transportation and disaster management. Besides this, there should be increased focus on citizen awareness, security education and training. The policies and schemes of GoI may be studied and appropriate frameworks developed, in the aforementioned areas.

Dependencies: Cyber Security as a subject, is within the purview of GoI. Hence, close coordination and synchronization of the work being done by GoI in this area is critical to success.

Time line: 12 months

B. POLICIES TO PROMOTE ELECTRONICS INDUSTRY

B.1 ELECTRONICS POLICY

Objectives

I. Electronics is a sunrise sector in India with the promise of import substitution, of acting as an economic force multiplier, and of creation of huge employment potential. For the reasons stated in section 2 above, it is critically important for AP to focus on promoting the Electronics Manufacturing industry. A **policy thrust** is needed in this direction.

ii. GoAP had issued an Electronics Hardware Policy in 2012 and followed it up with operational guidelines in 2013. In parallel, the GoI has notified the National Policy on Electronics in 2012 and also notified a few significant schemes, to implement the NPE 2012. Since the GoI and GoAP formulated their Electronics policy independently, it is now necessary for GoAP to harmonize their EHW policy and the guidelines thereunder with the national policy and schemes of GoI so as to derive synergistic benefits.

iii. AP will do well also, to take advantage of the formulation of a fresh policy on Electronics and guidelines, to focus on a few product clusters and to promote the Fabless semiconductor industry in the new State, as the region has highly talented professionals. Moreover, it is quite appropriate to make an appeal to the NRIs in Silicon Valley, hailing from AP, to relocate to AP and play an active part in the development of the ESDM ecosystem, with a focus on fabless semiconductor industry and to establish start-ups in AP.

iv. The concept of a Startup Village has taken reasonably strong root in Kerala. AP will do well to emulate the same.

v. A semiconductor Fab is the heart of the ESDM ecosystem, just as a chip is the heart of any digital electronics device. Due to the concerted efforts of GoI over the last 2 years, the stage is set for establishing 2 semiconductor fab units – one in Noida UP (by JP-IBM-TowerJazz Consortium) and the other in Gujarat (by HSMC-ST Micro Electronics-Siltera Consortium). AP can take advantage of the special package of incentives announced by GoI for semi-conductors, to make a vigorous effort to pursue the top semiconductor fabs in the world to consider establishing a fab in AP.

   A more feasible and less expensive option is to promote the setting up of LED Fabs in AP, considering that there is going to be an exponential increase in the demand for LED products in display and lighting in the near future.

vi. Two important schemes of GoI under the NPE 2012, are the ITIR (IT Investment Region) and the Electronics Manufacturing Clusters scheme with attractive incentives from GoI for infrastructure development. ITIR Policy is common for both software and hardware. GoAP has to take care to incorporate the provisions of these two schemes in the proposed Policy.

vii. In sum, the proposed Electronics Policy should (i) subsume the incentives already notified by GoAP under the earlier EHW policy (ii) provide for promotion of fabless semiconductor industry (iii) include a special package for the semiconductor fab industry (iv) harmonize all the schemes of GoI for the ESDM sector like the EMC, ITIR and MSIPS (v) provide for encouragement to start-ups (vi) include special incentives for attracting NRIs to relocate to AP.

Benefits

The benefits of notifying a holistic Policy on Electronics are in the form of opening up the economy to a sunrise sector, creating huge employment opportunities and contributing to the ongoing national efforts for promoting the domestic manufacture of electronic products under the slogan **"Electronics - Made in India."**

Approach

As has already been stated above while narrating the objectives of the proposed policy, the basic approach should be to harmonize the policies of GoI and GoAP and to focus on a few selected product clusters to begin with. Intensive efforts have to made at the highest level to market the "Advantage AP" slogan among top MNCs and the captains of the domestic industry.

Dependencies: Close coordination with GoI is essential to take full advantage of their schemes for promoting the ESDM sector.

Time line: 6 months

B.2 POLICY ON PREFERENTIAL MARKET ACCESS IN PROCUREMENT OF ELECTRONICS BY GOVERNMENT

Objectives

Any nascent industry required the initial support of the Government through preferential procurement of products of the domestic manufacturing units. With this in view, GoI has notified a policy on Preferential Market Access (PMA) for domestically manufactured electronic products. The policy provides for a minimum of 30% preference to notified electronic products manufactured domestically. While the procurement of electronics by State Governments may not be substantial, it is necessary to adopt the policy of GoI, as already advised by GoI. This will give necessary encouragement to entrepreneurs to establish electronic manufacturing units in the State. A moot point is whether to limit the preference to products manufactured in AP or to adopt the GoI policy in toto, such that products manufactured anywhere in the cCountry will get preference under the policy.

Benefits

The newly established electronic units will have a head start in generating revenues. PMA policy could also act as an added incentive for MNCs intending to start manufacturing activities in India. PMA policy will pave the way for development of product standards specific to the country/state in terms of localization requirements. A well-calibrated PMA policy would promote the emergence of several component manufacturers and ancillary industries, especially in a cluster formation.

Approach

Basically, it is desirable to adopt the GoI policy on PMA, after taking a decision on the scope of domestic manufacturing, as alluded to in the para on objectives, above. It is desirable to identify and notify products for which there is reasonable demand in public procurement. Examples are LED lighting for streets and all public buildings, electronic medical devices required in large volumes by PHCs and other public hospitals, notebooks and handheld devices, smart energy meters, sensors for smart grid, electronic control systems, smart cards etc.

Dependencies: None

Time line: 3 months

B.3 Policy on Innovation

Objective

Innovation will be the key theme for the growth of technology industries in India, as against services, which has been the driver so far. Innovation is beginning to make a noticeable presence in India. Bangalore occupies a place in the top 20 cities known for innovation, globally. If AP has to make a mark in the technology sector, it is necessary to ride on the Innovation wave. It is necessary to make concerted efforts in this regard.

Some of the key initiatives required to promote innovation are

a. To encourage and promote startups, by providing the initial support at affordable or subsidized costs;
b. To create an Innovation Fund that can act as a Fund of Funds, and thereby attract angel investors and venture capitalists to fund the startups in the State;
c. To create incubation facilities with plug-and-play environment;
d. To create a challenge with a number of societal problems being thrown open to the startups, with the most promising solutions getting State funding;
e. To promote the design and development of IT, semiconductor and electronics products;
f. To enhance the scale of R&D undertaken in the technology universities.

Time line: 6 months

C. POLICIES TO PROMOTE THE IT INDUSTRY

C.1 IT POLICY

Objectives

AP had notified a comprehensive IT Policy in 2010, with validity up to 2015. The Policy is comprehensive and holistic. In the context of the reorganized State of AP, there is a need to review the earlier policy and customize it to meet the new realities. Hyderabad was the center of gravity for IT development so far. New IT hubs have therefore to be developed, from amongst the earlier Tier-II locations. In addition, the idea of creating **an entirely new greenfield Mega IT Hub** needs to be seriously explored. The proposed hub can be located in close proximity to the proposed new capital city, or can be located in a 2,000 acre layout near Vizag, Vijayawada or Tirupati. The creation of the Mega IT Hub or the smaller IT Hubs involves public investment (to be estimated) in infrastructure, external and internal to the layout. After the notification of the IT Policy of AP, the GoI has notified the National ICT Policy in 2012. We need to compare the features and provisions of the national policy and incorporate in the proposed new ICT Policy for AP. A preliminary examination of the 2 policies indicates the need for including the following in the scope of the proposed policy:

a. Encourage adoption of ICTs in key economic and strategic sectors to encourage competitiveness and productivity;
b. To make one person e-literate in each household;
c. To make special provisions for enabling access of the tools and devices of ICTs by the differently-abled persons, by adopting and customizing the National Policy on Universal Electronic Accessibility;
d. Updating the syllabi of the universities and colleges to bring them to date with the emerging technologies;
e. To leverage Aadhar for identification of individuals within and across all interfaces of citizens with public and private authorities and bodies;
f. To create and leverage the **State Resident Data Hub** developed as a supplement to Aadhar. The SRDH will act as the core database for ensuring interoperability for creation and management of **integrated services and joined-up services** in the eGov projects.

Benefits

The benefits of creating a new and vibrant IT policy for the new State of AP can't be overemphasized. It brings renewed interest in investing in AP, in attracting talent from within the country and abroad, in moving towards an enhanced target of IT exports, in creating new employment opportunities, in focusing on chosen verticals well-suited to the environment in the new State, in creating an ecosystem that promotes adoption of ICTs in various sectors of the economy for enhancing productivity and competitiveness. The proposed policy would draw upon the best features of the existing State and National policies on IT and coupled with a good leadership, would go on to produce delightful results.

Approach

The new IT Policy has to rely on a set of sound basic principles for its long-term sustainability and near-term competitiveness. The ecosystem of incentives and infrastructure, capacity building and innovation should be such as to be the most competitive in the Country, given that the current base of IT in AP is low. The following suggestions, arising out of the interaction with industry, are worth incorporating in the proposed policy.

i. The need of the hour is to attract a few anchor IT units to establish or to expand in AP, in the places selected as IT Hubs. To this end, it is necessary to create special incentives for Mega IT Projects, that promise to create an employment of over 5000 during the next 5 years.
ii. Special provisions are needed, over and above those existing in the present IT Policy, to promote MSMEs in large numbers.
iii. It is essential to give a thrust to innovation, by encouraging a large number of startups to be established in the State.
iv. To exploit cost arbitrage, and with a view to reverse the migration to urban areas, special provisions have to be made for the Rural IT units.
v. Above all, it is necessary to focus on a few selected niche areas, for which AP should be reputed in future. The suggestions of the industry in this regard lead us to the following shortlist:
    a. SMAC technologies
    b. Internet-Of-Things (IOT)
    c. Animation, Gaming & Entertainment
    d. Knowledge Management & KPO
    e. Fabless Semiconductor Industry
    f. **IT for X -** e.g IT in Pharma, Oil & Natural Gas, PCPIR, IT needs of Capital City

Dependencies

The main dependency would be on committing the required resources, financial and human, for meeting the requirements for creation of the basic infrastructure in the proposed hubs, in extending incentives for the IT sector and managing the various promotional schemes contemplated under the new policy.

Time line: 6 months

C.2 PREFERENTIAL MARKET ACCESS (PMA) POLICY IN PROCUREMENT OF SOFTWARE FOR eGOV

Objectives

As in the case of the PMA Policy notified by GoI for domestically manufactured electronic products, there is a case for putting in place a policy of PMA for software products designed and developed domestically. The software entrepreneurs and startups in India suffer from severe disabilities like (i) not being able to meet the stringent pre-qualification criteria (in terms of minimum turnover and prior experience in executing eGov projects) while trying to compete for Government projects; while the incentives for establishing a new software unit, specified in the notified IT Policy would enable a unit to be established and to develop a product, the existing policies do not help at all in marketing the product in India (ii) the entrepreneurs have to hard sell and often undersell their products to private customers in India and more likely overseas, so as to get their first few orders; such a compulsion seriously undermines their operational viability and sustainability.

An appropriately crafted policy on PMA for domestically developed software products would go a long way in giving a much-needed first break to the entrepreneurs and enable them to stabilize their operations. Since Governments are the biggest buyers of IT Products and Solutions, such a PMA policy will give an excellent encouragement for start-ups and young and talented entrepreneurs.

The scope of the PMA policy for IT should include software products, solutions and components. However, one moot question that arises is whether to limit the benefit of PMA to the IT companies registered in AP and to products designed and developed in AP or to extend the benefits to units registered in India and to products designed and developed in India. While both the options have their merits, it is desirable to adopt a golden mean, by extending the benefit to both, but provide a higher percentage of preferential access to the former.

Benefits

The proposed PMA policy would give a head start to the startups, which design and develop products for the domestic public sector market. The policy is likely to result in starting of new companies or migration of existing companies to AP. With the requirements of localization for the public sector, professionals with knowledge of Telugu would get preference in employment. The domestic turnover would considerably enhance. There would eventually be huge savings in terms of foreign exchange as the dependency on products designed for global markets gets reduced. There will be an immense thrust for creation of IP in the country, and thereby, for creation of wealth. Products developed for AP/India can, with minor modifications, have demand in the SAARC region. Public interest could be served better in the long run with all services being made available in local languages and conforming to local practices and customs.

Approach

Currently, AP has a policy for reserving all eGov projects with an outlay of less than ₹3 cr, to MSMEs. While this is a good beginning, the proposed PMA policy has to be crafted to widen the opportunities available to domestically developed software products, deriving from such a policy of GoI for the Electronics sector. A provision should be made for reservation of government projects at District level up to a size of ₹50 lakhs for the rural IT units; projects with an outlay up to ₹5 cr to MSMEs located in AP and projects with an outlay of up to ₹10 cr to MSMEs located in India.

Dependencies

There may be complexities in defining what qualifies as a domestic software product. However, with appropriate industry consultation, a workable definition can be found. Secondly, there may be issues of WTO compatibility. The formulation of the scheme has to be such as to be WTO-compatible. Consultations with the IT industry and with WTO experts and/or Department of Commerce, GoI are desirable in this context.

Time line: 6 months

C.3 Policy on use of Solar Power, Green IT and e-Waste

Objectives

Abundant and uninterrupted power is a critical requirement for the growth of electronics and IT sector in the State. The growth of the semi-conductor industry puts additional requisite of high-quality power. With the existing state of power being none too satisfactory, both on quantity and quality, it is necessary to formulate appropriate policy interventions that make a huge difference within a short time. While the departments of energy and non-conventional energy would certainly be seized of the matter, it is necessary from the perspective of the Electronics and IT sector, to add to these efforts. Encouraging the use of Solar power for small and discrete requirements of power for IT devices and promoting the use of Green IT devices which consume less power for a given performance, is the need of the hour. Examples of small and discrete requirements of power for IT include, the SOHOs, Common Service Centres, primary schools, PHCs, gram panchayats, village revenue offices, village libraries, Kisan Vikas Kendras etc.

Some research and piloting has been done in respect of Green IT globally. This needs to be studied and products conforming to the Green IT norms have to be prescribed for procurement under the proposed policy on Green IT.

e-Waste is soon going to be a formidable challenge to environment. Disposal of unserviceable IT and electronic devices has to be mandated to follow the GoI guidelines on e-Waste management and disposal.

Benefits

Reduced dependence on grid power for IT, use of Green IT and e-Waste management have each their own posse of benefits. These are all societally relevant and responsible initiatives. While the initial investments in these areas may seem large in proportion to the immediate benefits, they will bring rich dividends not only in terms of stability of IT systems but also on the positive benefits to the environment and society in the long run. It is better to start a movement on these, earlier than later.

Dependencies

The policies of GoI on promotion of Solar power, Green IT and e-Waste need to be studied and localized. Close coordination with the related Ministries of GoI is essential.

Time line: 6 months

D. SUPPORTING POLICIES AND FRAMEWORKS

D.1 e-MAIL POLICY

Objectives

e-mail is already an important channel of communication in Government. Government functionaries communicate between themselves and with citizens/businesses through e-mail. The following major lacunae are observed in the usage of e-mail by the Govt functionaries:

a. e-mail is used to widely varying (0 to 30%) degrees at different levels of government. Often, it is used in addition to the normal channels of communications. This results in not only a wastage of resources but can lead to avoidable confusion at the receiver's end – whether to expect a response by e-mail or by other means.

b. One of the common criticisms against the Government is that requests, communications sent to Government officials over e-mail by the citizens are never even acknowledged and acted upon rarely. This is because of the dual system of paper and e-mail running concurrently.

c. Though electronic communication is recognized as a valid communication as per the IT Act 2000, invariably, Govt functionaries keep a printed copy of emails, again resulting in wastage of resources.

d. Though NIC offers the entire range of e-mail services, there is no mandate to invariably use the NIC mail, by the officials either of Central or State Governments. At present, GoI is working on an e-mail policy, which is at an advanced stage. As of now, officials tend to use e-mail services of private service providers, located in India or more often, abroad. Use of such private email services results in Government data and information residing in servers outside India, which is in violation of the statutory provisions relating to preservation of Govt. data.

All the above lacunae can be addressed through a properly laid down e-mail policy. The options available to the State are either to avail the e-mail services of NIC in toto, and ban the use of private e-mail services or to establish a comprehensive e-Mail services infrastructure of its own.

Currently, AP is one of the few States in India that has its own e-mail infrastructure and does not depend on the NIC e-mail services. A suitable decision needs to be taken on whether to continue with its own infrastructure, with the required enhancement, or to switch over to the NIC option.

Benefits

The benefits of a well-designed e-mail policy are in the form of security of all the government communications and data that is attached to them. Government will have strategic control over the same. The policy would also lead to cost savings for the Government. Extensive use of e-mail by Govt. officials would facilitate introduction of an e-Office environment. When e-mail is used to communicate with the citizens, the efficiency and responsiveness of the government agencies gets enhanced. Using Government's own infrastructure for e-mail services will serve a key strategic purpose of security of the data.

Dependencies

GoAP may await the notification of e-mail policy by GoI and adopt the same, with such modifications as are required, keeping in view the local requirements.

Time line: 6 months

D.2 HRD POLICY FOR EGOV, ELECTRONICS & IT

Objectives

One of the key requisites for the development of IT and Electronics industry is the availability of human resources with the skill sets needed for the various portions of the value chain of each industry. We need a wide spectrum of skill sets and talent when we attempt a holistic approach to the development of these sectors. The former State of AP was fortunate in having a large number of premier educational institutions that cater to most of the segments of the value chain. However, in the context of the new State of AP, we need to reconfigure and re-map the HR scenario, comparing what is available with what is needed. Added to this is the special requirement of the Electronics sector. Given the situation, a policy and a framework are required to be crafted for developing the HR, with a focus on the existing gap areas. It is necessary to conduct a quick survey and a gap analysis to arrive at the HR requirements, both in terms of the quantities and the skill sets required to be developed. A consultation with industry and academia s called for.

There is a commitment of GoI to establish institutions of higher learning, like an IIT, an IIM and a IIIT in AP. All efforts have to be made to expedite the same. Equally important is to ensure that the courses offered by the proposed institutions are in alignment with the needs thrown up by this blueprint.

The policy has also to estimate, map and provide for areas not covered by the conventional courses and syllabi. For instance, more emphasis has to be given for innovation and research at the higher end and the skill sets required for the shop floor of electronics and semiconductor units.

The suggestions received w.r.t. enhancing the quality of education are mentioned below:

i. The large amount of high-quality content available on the net, in the form of well-developed online course like edX and Coursera needs to be taken advantage of
ii. Universities may be requested to give credits to students who successfully complete the recognized online courses
iii. The curricula of the under-graduate and graduate courses have to be revised to include/ emphasize the emerging technologies and include entrepreneurship development as an elective.
iv. A scheme may be introduced to mandate apprenticeship with an empanelled industry unit (IT &Electronics units), during the last year of formal education, to make the students industry-ready

The proposed policy has to chime with the GoI schemes for the ESDM sector, and take full advantage of the same. Educational and skill-development institutions established in partnership with industry are going to be the key to success.

Benefits

While the benefits of HRD for IT and electronics are obvious, the following specific dividends are worth mentioning:

a. A sound and holistic policy on HRD for IT and Electronics sends the right message to the investors on the kind of talent and skill sets to expect in the region. This boosts investor confidence and augurs well for the growth of the industry.
b. A clear indication in the policy as to the role and involvement of the industry in the HRD effort would assure them of the availability of the right skill sets they need and quality thereof.
c. The policy would also form a guidance the students of the prospects of employment on successful completion of the courses and hence reinforces their hope besides enabling them to orient their academic efforts in the required direction. This holds suitably to the faculty as well.
d. The policy would enable orchestrating the efforts of the various departments and agencies dealing with technical education so as to generate synergies.

Approach

As already alluded to earlier, GoI has come up with a few schemes for the promotion of HRD for the ESDM sector. It is necessary to take advantage of these schemes immediately. Fortunately, Andhra Pradesh figures in some of the HRD schemes of GoI, like the Scheme for Skill Upgradation and Mass e-Literacy.

An effort has to be made to apportion the targets set for erstwhile AP, among the new States of Telangana and AP. The following schemes of GoI are worth mentioning in this regard:

a. The PhD scheme, approved by GoI with an outlay of ₹401 crore, aims to reach a level of producing 3000 PhDs annually, 1500 each in IT and Electronics. The focus on PhDs is founded on the premise that a rapid growth of IT and Electronics industries is possible only by innovation through research, creation of IP and conversion of the IP into wealth through entrepreneurship. AP has to assess what portion of the national target it has to get, so as to meet its growth requirements in these two sectors. It is worth mentioning that the educational institutions of higher learning in engineering and technology located in the new State of AP do not figure in the category of institutions eligible to participate in the PhD scheme. A special case has to be made out for AP. The universities in AP that are already offering a PhD program and institutions like JNTU Kakinada and Anantapur are right candidates for sponsoring to GoI under the PhD scheme. **Time is the essence, as we cannot afford to lose an academic year.**
b. AP already figures as one of the 7 pilot states selected by GoI for the Skill Development program to be implemented through the Polytechnics and ITIs. The target of 15,000 has to be apportioned between AP and Telangana. Close coordination is needed with the national nodal agency, namely, NIELIT.
c. As already mentioned, concerted efforts are to be made for the early establishment of IIT, IIM and IIIT in AP.

Dependencies: A high degree of coordination is needed between the GoI and State Government, industry and academia to produce ideal results.

Time line: 3 to 6 months

D.3 POLICY ON TELUGU INTERFACE

Objectives

Given the imperative to take the benefits of ICTs to the rural populace, it is necessary to make special efforts to see that all G2C, and preferably all the G2B interfaces are in the local language, namely Telugu.

GoI has come out with a policy on localization, as a part of the National IT Policy, 2012. The policy has the lofty objectives of "promoting the development of content in local languages and thereby bridge the digital divide, to undertake the development of language technologies for text to speech and speech to text, voice recognition, machine translation, voice web, to enable language-independent delivery of services, and above all, to make India a global hub for language technologies." To this end, GoI has already notified standards for font and for character -encoding, besides a bevy of tools in the areas aforementioned. GoI is at an advanced stage of establishing a 'Centre of Excellence for Language Technologies.' Some State Governments like Maharashtra have made pioneering work in this area like the development of Marathi Sabda Kosh. AP has also made notable progress in this area through the Telugu Vijayam initiative.

AP has to take a leadership position in this area, as it has immense public interest embedded in it. It is time we come out with a comprehensive policy on localization, development/adoption of all the standards required for localization and thereafter mandating a Telugu interface for all citizens/ businesses facing electronic interactions. Special efforts need to be made to provide Telugu interface also on all access devices, most notably, on mobile phones. AP can also contemplate establishing a Centre of Excellence for Telugu in Digital Media.

Benefits

A number of obvious benefits flow from the proposed policy, the foremost being enhancing the user base of citizens who can make effective use of ICTs and the Internet. Besides this, research and implementation efforts in Telugu Language technologies and implementation would generate immense job opportunities right from the highest level of researchers, to programmers, to data entry operators. A set of new courses centred on Telugu language interface can be introduced in educational institutions and computer training centres.
AP can soon be at the forefront of such a national movement.

Approach

With the appropriate technical core team established in this important area, AP can straight away adopt all the standards that have been developed at the national level. AP can collaborate with GoI and CDAC to develop the tools required for Telugu language. A centre of excellence can be started in one of the premier engineering colleges, with the assistance of GoI. A well-calibrated schedule of mandating Telugu interface in all e-Gov projects can be made part of the policy. The overall goal can be that by 2019, 80% of all G2C and G2B interfaces shall be in Telugu. A large program of dissemination of awareness and tools/tool kits to the citizens and to software developers may be taken up.

Dependencies

A strong collaboration with GoI and CDAC is essentially needed. Collaboration with a consortium of engineering institutions and language educational institutions is a pre-requisite.

Time line: 12 months

D.4 FRAMEWORK FOR THE USE OF SOCIAL MEDIA

Objectives

Social Media has shown a meteoric rise over the last few years. The power and reach of these media cannot be overemphasized. Governments across the world are beginning to use social media effectively for establishing a relationship with their constituents, leading to the realization of the concept of e-Governance (distinguished from e-Government), coined over a decade ago. Social Media is the foremost among the emerging technologies, namely the SMAC technologies (popular abbreviation for the group of emerging technologies - Social Media, Mobile, (Big data) Analytics and Cloud).

Even in India, the number of Social Media users is large and its growth rate is among the highest in the world. The power of social media needs to be harnessed in a positive way, by making it as one of the important vehicles of continuous communication with the citizens. In 2012, the GoI has come up with a comprehensive Framework and a set of guidelines for use of Social Media by Govt agencies. GoI has also embarked on a pilot mode with some of the ministries with mass citizen contact. The Framework and Guidelines of GoI address the basic issues like why to use Social Media, what platforms to use, the rules of engagement, communication strategy using Social Media, officials authorized to interact on Social Media, how to create and sustain a community on Social Media, and how to mainstream Social Media in the communication strategy of the agency and in its organizational structure.

GoAP can do well to embark on this emerging trend by straight away adopting the GoI Framework and guidelines, and implementing them in selected departments with mass interface. Taking the analogy of the PMO, the CMO can take the lead in this regard.

Benefits

Firstly, the sense of satisfaction of the citizens will increase exponentially, by participating in the governance process through the Social Media. Secondly, some of the suggestions and feedback given by the citizens form useful inputs to review the functioning of the government and apply correctives and improvements where needed. Thirdly, Social Media can act as a nice, convenient and 'real-time' sounding board while formulating new policies and schemes. Lastly, government functionaries can disseminate the right information and dispel any misinformation being propagated in a viral fashion, especially on issues that concern and can impact the society with a potential to disturb harmony and public order.

Approach

Networking sites, blogs, microblogs, Vlogs and wikis constituting the major channels of Social Media. It is necessary to understand which channel is most suited for a given purpose of a department. The GoI Framework recommends a 7-step process for adoption of Social Media by the government agencies - (i) defining the objectives (ii) choosing the right channel and media suited to achieve those objectives (iii) defining the governance structure for managing the relationship, so as to create trust in the community and to ensure continuity and responsibility within the department (iv) defining a communication strategy for ensuring consistency (v) conducting a pilot (vi) analysing the result of the pilot engagement, and (vi) institutionalizing the use of Social Media.

It is quick and best to adopt the framework and implementation guidelines notified by the GoI.

Dependencies

Choice of the most appropriate departments forming the pilot and creating the right engagement teams in each of the selected departments is key to a successful launch in the Social Media space.

Timeline: 6 months

D.5 FRAMEWORK FOR USE OF AADHAR/NPR/SRDH

Objectives

Between them, Aadhar and NPR have covered over 60% of the population of the Country. States like AP have achieved over 90% coverage of Aadhar. It is not only desirable, but necessary to put this valuable database to effective use in public interest and for facilitating better governance.

Currently, Aadhar has no statutory basis. Mandating the production of Aadhar for the citizens to receive social benefits has also been questioned before the Apex court. Hence any possible framework has to be designed to work taking into consideration the current legal status of Aadhar.

As a technology artefact and as one of the largest databases of the residents of the Country, Aadhar is undoubtedly based on the best combinations of technologies. An institutional mechanism has also been defined for keeping it current and to facilitate its usage in real-life applications.

Fortunately, AP has achieved near saturation in Aadhar enrolment. Besides this, a well-designed concept of State Resident Data Hub has been developed and implemented. This forms a strong basis for planning the next steps in practical usage of Aadhar for providing citizen services more effectively. Some of the objectives that can be pursued by using SRDH as a means are: (i) achieving uniformity in definition of personal data of residents and the feasibility of unique identification (ii) elimination of duplicate and bogus entries in government records relating to individuals, especially databases dealing with social benefits (iii) possibility of designing and implementing integrated services and joined-up services as the next stage of evolution of e-Government projects (iv) achieving inter-operability and single-sign-on across various agencies of government, and possibly of the private sector (v) ability to create a unified record for capturing and maintaining the history and track record of certain categories of persons like patients and students.

Benefits

The benefits of creating and maintaining unique records of individuals are (i) savings to the exchequer due to elimination of duplicate/ghost records (ii) convenience to citizens through single identification valid across all government agencies (iii) possibility of using Aadhar/SRDH as a multi-purpose identity record (iv) savings in effort and cost of developing applications for service delivery.

Approach

The first steps in the realization of the above benefits of Aadhar/SRDH consist of validating the existing departmental databases once with SRDH, in a 2-way manner; providing for all future additions/deletions/changes to the departmental databases to be permitted only after validating with Aadhar/SRDH, designing and issuance of a smart card to the residents in a phased manner, depending on value-for-money of the selected applications.

Dependencies

The dependency is mainly in terms of the alignment of the scheme of Aadhar/SRDH with the legal pronouncements on the issue - existing and future.

Time line: 9 months

D.6 FRAMEWORK FOR USE OF GIS & GEO-SPATIAL DATA

Objectives

GIS and Geo-Spatial data technologies can be used in many different ways for planning public policies and for effective monitoring of their implementation. While examples of such uses abound, the one relevant in the context of the needs of the new State of AP are partially listed below:

i. Urban Development

a. Mapping, Planning & Monitoring (MPM) of all cities and towns
b. Planning Capital City
c. Mapping of utility networks/grids
d. Zonal planning & regulation

ii. Agriculture & Rural Development

a. Crop area estimation
b. Assessment of crop condition for yield prediction and crop insurance
c. Horticulture development
d. Alleviation/estimation of flood damages
e. Drought management
f. Rain water harvesting

iii. Water Resources Management

a. Estimation of reservoir storages for optimal utilization
b. Ground water assessment and mapping

iv. Mines & Minerals

v. Fisheries

a. Fish catch zone identification
b. Early warning system

vi. Forest & Environment

a. Forest cover mapping & monitoring
b. Forest fire management
c. Biodiversity mapping

vii. Disaster Management

a. Tsunami warning and evacuation
b. Rescue & relief operations management
c. Damage assessment

viii. Tourism development

ix. Development of GIS database & layers

x. Traffic management

xi. Management of utilization of various assets through the use of GIS

xii. Government/community lands management

AP has done significant work in the development of GIS and the acquisition and use of satellite imagery. The efforts of APSRAC have resulted in the development of applications and databases for 14 departments. However, there is an imminent need to enhance the usage of these applications and for developing more applications that can produce cost-effective results.

In sum, the objectives of the GIS & Geo-Spatial Initiative are to bring about a quantum change in the efficiency and effectiveness of the management of natural resources and public assets, besides the use of satellite bandwidth for educational, and e-Governance, and for providing connectivity to remote areas.

Approach

As already mentioned, there is a good foundation already laid by APSRAC and the efforts of the Planning department. A service-orientation has to be built into the ongoing efforts. More applications, as illustrated in the foregoing paragraphs, will have to be designed and implemented.

It is necessary to constitute a Steering Committee, consisting of officials of GoAP and ISRO, so as to prepare a clear roadmap and an action plan for effective use of the GIS and satellite imaging technologies for multitudes of societal applications.

Time line: 6 months

THE MISSIONS

Missions - for a time-bound result

Implementing the foregoing recommendations lead to a plethora of tasks and activities to be done in a time-bound and coordinated manner. When a task or set of related tasks and activities are to be performed in a time-bound manner, the obvious implementation option would be to establish a **mission** for each identified area, with a clearly defined set of responsibilities and corresponding powers to take decisions. In line with this approach, it is recommended that in the context of realizing the Vision, a set of 3 Missions be established, each with its own Terms of Reference, time lines, resources and accountabilities. All the 3 Missions shall have autonomy in implementing the policies approved by the Government. The 3 Mission Directors shall report to the Government. TOR for each mission, the desirable composition and the tentative time lines for achieving results and above all, the resource requirements for each are described below.

Terms of Reference

a. Designing an overall **architecture** for realizing the vision of providing **all G2C and G2B services** through multiple channels. This includes designing both the functional architecture and the technology architecture. An excellent framework for e-service delivery has already been notified by GoAP through GO Ms 1 dated 1-1-14 and Go Ms 5 dated 19-2-14. The effort should be to build on this framework and to subsume the legacy systems already in place. A clear roadmap has to be prepared for partitioning the digital assets between the two States for use in the interim, before going on to migrate to a completely new infrastructure.

b. Defining a **portfolio** of G2C, G2B, G2E and G2G services and prioritizing them for implementation. This task should factor the State MMPs (Mission Mode Projects) already approved by GoI for implementation, as also the new MMPs forming part of the new initiative of GoI, namely, the **e-Kranti** Program. A list of these MMPs is given in the **Annexure.** A critical review of the status of implementation of each of the existing MMPs has to be made and recommendations made for aligning with the vision of e-Government. An effort should be made to identify and get some low-hanging fruits.

c. Establishing a new **State Data Centre.** The Mission should attempt to design a state-of-the-art SDC, taking advantage of emerging technologies like the Cloud (e.g **MeghRaj** initiative of GoI) and the Big Data Analytics.

d. Take **Fibre to the Village.** In this regard, the Mission should work towards fast-tracking the National Optical Fibre Network (NOFN) project of the GoI, in AP, by taking up all facilitatory steps. The design should be dovetailed with the initiative of DeitY, GOI on designing the National Information Infrastructure (NII). A quick study should be made of the **Beyond the Fibre** pilot implemented by DeitY in the Parawada block of Vizag district, so as to take the learning in making effective use of the Fibre, once it is taken to the village. While the GoI scheme of NOFN terminates at the Gram Panchayat level, the AP design should provide for the logical next step of taking it to the village. The concept of PPP should be explored strongly and implemented in both the Beyond the Fibre concept, and in taking fibre/broadband to the village. Self-financing and pay-per-use models already well-established by the mobile network service providers have to be considered seriously so as to minimize the outgo from the exchequer. Effort should be made to leverage the ongoing efforts to establish 4G networks by the private TSPs operating in the State.

e. Facilitate the undertaking of an extensive **Government Process Re-engineering** by the line departments so as to make the delivery of services, simple, convenient and transparent to the citizens. An ABC approach may be followed, whereby, the top 10 processes of the top 20 departments having the maximum interface with the citizens and businesses are tackled at first so as to get the maximum value for the effort and resources to be invested. GPR should be made mandatory to the selected line departments before any further investments are made in e-Gov initiatives.

f. The **service delivery infrastructure** should be redesigned keeping in view the need for citizen convenience, accessibility, look and feel, branding and financial viability of the service centres. Some of the service centres located in larger villages may be designed and planned to have the status of Village Digital Knowledge Centres, which offer a wider range of services

like skill development, specific knowledge useful to the farmers, computer literacy etc. To the extent possible, permanent infrastructure (e.g well-designed and centrally located pucca building) may be planned in majority of the villages.

g. Needless to say, one of the immediate tasks of the eGov Mission is to work on giving a concrete shape to the **policies and frameworks** required to be put in place, as indicated in sections A1 to A6 , C2 and D1 to D5 above.

h. Implementation of e-Government of the scale contemplated in this blueprint within a meaningful time frame is fraught with a number of risks, the most important of which is to convince the participatory departments to **realign their priorities** along the eGov vision and agenda. In fact all the departments should **mainstream eGov** in their regular activities and adopt a mission approach indicated by the eGov Mission. Appointment of a well-trained, motivated senior officer as the **Mission Leader,** allocation of adequate resources and above all leading the GPR efforts are critical to success. To this end, the eGov Mission should gainfully use the leadership of the Hon'ble Chief Minister and his passion to transform service delivery.

Recommended Composition of the Mission

The eGov Mission should be headed by an eGov expert with adequate experience and drive, with a passion for transformation, preferably in the rank of Secretary to Government. It should consist of domain experts in the areas of GPR, IT Systems, IT Infrastructure and Capacity Building. It should include 2 to 3 academics having deep knowledge of emerging technologies and 2 to 3 experts from the industry, with hands-on experience. It is desirable to include an active member of a civil society organization with a zeal to bring on board the aspirations and expectation of the citizens.

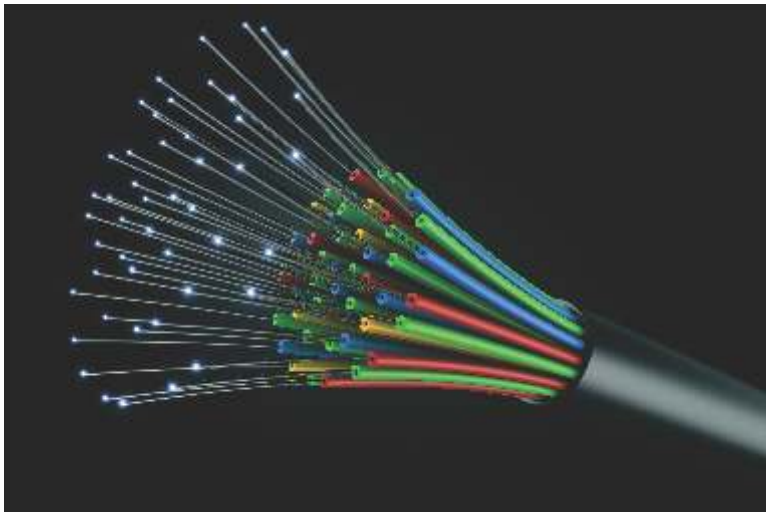
The mission can be of a size of 10 to 12. It should have the necessary support in the form of 4 eGov/ management professionals.

Time lines

The time lines indicated under the earlier section on policies may form the basis of further work to design a PERT chart for the various tasks. It should be one the first deliverables of the Mission. This holds for all the Missions proposed in this section.

Budgetary Resources

An approximate estimate of the budget requirements for the eGov Mission to accomplish its job, takes us to a figure of ₹1000 crore for the initiatives listed in this documents. Of this ₹500 crore is provided for revamping the service delivery infrastructure in 10,000 big villages. The estimate does not include the cost of the individual Mission Mode Projects which need to be sourced from the budgets of the line departments and partly through GoI funding. Out of the ₹1000 crore, about ₹200 crore may be tapped from GoI, for schemes such as SDC and Fibre to the Village. The net budgetary requirement of ₹800 crore may be allocated over the next 3 years.



ELECTRONICS & IT MISSION

Terms of Reference

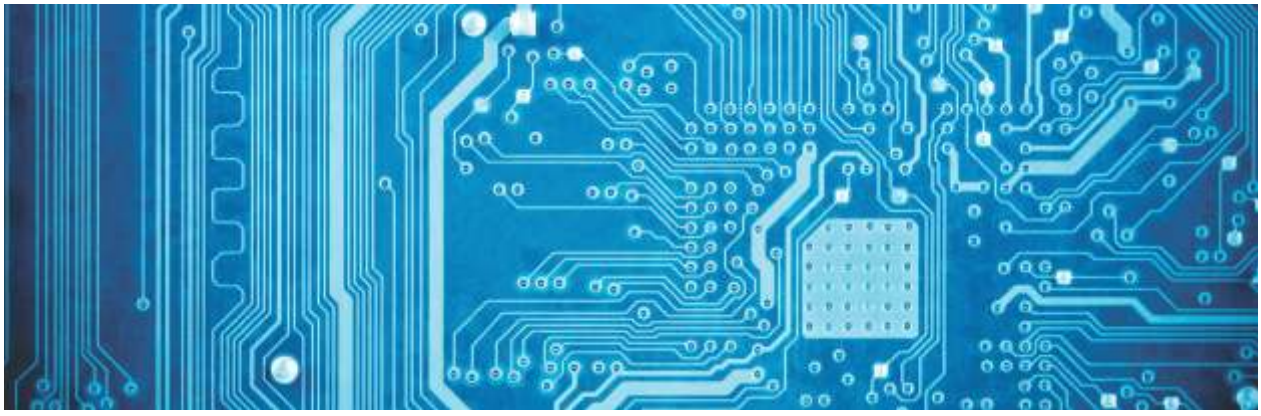
a. To create a set of policies, outlined as a minimum set in sections B1, B2, C1,C2 & D2;
b. To create a set of implementation guidelines to translate the above policies into reality;
c. To take steps for getting the clearance of GoI for ITIRs to be established in the State;
d. To explore the potential for establishing electronic manufacturing units and prepare proposals for 10 Electronic Manufacturing Clusters in the State (the number is indicative);
e. To design blueprints for establishing the Mega IT Hub and the smaller IT hubs at carefully selected locations;
f. To design a plan for marketing the 'Advantage AP' brand among top players in IT and Electronics Manufacturing sector globally and create the roadmap to attract investments into the Electronics sector to the tune of US$ 5 billion by 2017 and US$ 10 billion by 2020, and into the IT sector to the tune of US$ 2 billion by 2018 and US$ 5 billion by 2020;
g. To create an employment potential of 0.3 mil by 2018 and 0.5 mil by 2020 in the IT and Electronics sectors;
h. To identify the top electronic products/ components for which demand exists in the Country and take proactive steps to encourage the creation of IP and manufacturing capacities for those products/components;
i. To administer the incentive schemes to be designed and approved for the Electronics sector;
j. To promote the Fabless semiconductor industry as a thrust area;
k. To coordinate with the industry bodies in furtherance of the above objectives; and
l. To identify the areas in which promotion of use of electronics would lead to enhanced productivity, like smart grids, smart meters, low-cost access devices, smartcards etc. and promote investments/innovation in such areas

Recommended Composition of the Mission

The Electronics & IT Mission should preferably be headed by a technocrat with wide industry experience. It should consist of 3 to 4 experts to represent the verticals to be identified for a focus approach, 2 to 3 academics with experience in leading research in the cutting-edge of IT, Electronics and Semiconductors. The Mission should also consist of an expert in marketing and promotion. The Mission should be empowered to take all such decisions required to implement the laid down policies.

Budgetary Resources

The estimated requirement of budget for the Electronics sector would be of the order of ₹600 crore over a period of 5 years. This will be in addition to the assistance expected from GoI for MSIPS, ITIRs and EMCs. An estimate has to be made for the creating the infrastructure requirements of the Mega IT Hub and smaller IT hubs recommended earlier.



INNOVATION & CAPACITY BUILDING MISSION

Technology survives and thrives through innovation. All the 3 areas, namely, e-Governance, Electronics and IT are substantially technology-based and hence innovation has to be promoted. Moreover, specific capacities and skill sets are required to be built/ harnessed for successfully promoting these sectors. Hence, the need for a Mission on Innovation & Capacity Building.

Terms of Reference

a. Creation of an Innovation Policy and agenda, with more focus on Electronics and IT;
b. Design and establish an Innovation and Transformation Academy for creating a pool of highly talented professionals and entrepreneurs, who can contribute significantly to the development of the State;
c. AP has to take advantage of the situation to leapfrog in terms of the technology and business models, processes and procedures - the innovation required for such leapfrogging in all areas involving technologies, would be the responsibility of the Mission;
d. Nucleating Start-up villages and providing guidance and support for their growth;
e. Accelerating the implementation of the various schemes of GoI for Capacity Building in the ESDM sector, as alluded to in section D2;
f. Creating and implementing a framework for enhancing the quality of graduates in IT and Electronics, with active collaboration of the Industry;
g. Launching a knowledge portal as the repository of all best practices in e-Governance, IT and Electronics;
h. Designing innovative, futuristic and cost-effective blueprint for the Information Infrastructure and Systems required for the New Capital for AP

Recommended Composition of the Mission

The Mission should be headed by a technocrat who has a proven record of promoting innovation in technology areas. It should consist of 3 experts, one each in e-Governance, Electronics and IT, 3 academicians and 3 representatives of Industry.

Budgetary Requirements

The innovation agenda would require a budgetary support of ₹85 crore, over a 5 year period.

DPRs & PROPOSALS

LIST OF DETAILED PROJECT REPORTS TO BE PREPARED

It is a necessary first step to concretize the ideas and recommendations contained in this Blueprint, so as to tie-up funding from internal sources or to seek GoI grant. Moreover, several details - technical, organizational, legal and administrative - have to be worked out. All this is usually accomplished by preparing a comprehensive and formal document in the form of a Detailed Project Report. The following is a partial list of DPRs required to be prepared. As alluded to earlier, a Project Development Fund may be created and administered in an agile manner so as to achieve quality results in the shortest possible time.

1. IT Investment Regions (2)
2. Electronic Manufacturing Clusters (10)
3. HRD for Electronics
4. State Data Centre
5. State Wide Area Network
6. eGov Architecture & portfolio of flagship projects
7. MIS systems
8. Innovation and Transformation Academy
9. Fibre to the Village and Beyond the Fibre Projects
10. Rural Service Delivery Infrastructure
11. Capital City Information Infrastructure & Systems
12. Smart Cities

LIST OF STATE MISSION MODE PROJECTS OF NATIONAL e-GOVERNANCE PLAN

State MMPs approved by GoI

1. Road Transport
2. Land Records
3. Commercial Taxes
4. Municipalities
5. Agriculture - I
6. Treasuries
7. PDS
8. Police
9. Gram Panchayats
10. Employment Exchanges
11. Education
12. Healthcare

Common MMPs (Multi-departmental)

1. e-District
2. e-Office
3. Common Service Centres
4. E-Biz
5. e-Sangam (National Service Delivery Gateway)
6. e-Procurement
7. e-Courts

Proposed MMPs (as per e-Kranti)

1. e-Vidhaan (State Legislature)
2. Social Benefits
3. Rural Development
4. Financial Inclusion
5. Women & Child Development
6. Agriculture - II

Information Technology, Electronics &
Communications Department
Government of Andhra Pradesh

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