

# **Towards SMART Government:**

## **The Andhra Pradesh Experience**

By Randeep Sudan, IAS,  
Special Secretary to Chief Minister, Government of Andhra Pradesh.

### **1. Introduction:**

#### *E-government:*

The information revolution promises to change the world like never before. Information super highways and infobahns are bringing about profound changes in the way people work, learn and play, especially in the developed countries. Governments cannot remain insulated from these changes. According to the Economist “After e-commerce and e-business, the next Internet revolution will be e-government.”

A large number of governments the world over have launched e-government initiatives. Significant among these are Singapore, Malaysia, UK, Australia, Canada, New Zealand and the US. Singapore, in many ways has been a leader in this field. The Government of Singapore was quick to anticipate the immense potential of Information Technology for its economic growth and formulated its National IT plan in 1986. It launched ‘IT 2000: Vision of an Intelligent Island’ in 1992. Today, the Government of Singapore offers one of the best examples of delivering electronic services to citizens under its ‘e-Citizen’ concept.

The Labour government in UK has also launched an e-government initiative to fulfil its commitment towards modernizing government in the Information Age. Australia has set up an office of Government Information technology and a National Office for the Information Economy. States like Victoria in Australia have adopted aggressive IT strategies to attract IT investments and jobs under Victoria 21.

Recently the U S has set up a single interface for all government information and services through a unified portal named as ‘firstgov.gov’.

These are but a few examples of the importance being attached to e-government by an increasing number of countries across the globe.

#### *The backdrop:*

Andhra Pradesh has emerged as one of the leading states in India in e-government applications, with the State Government implementing a comprehensive plan to utilize IT for better services to citizens. The emergence of Andhra Pradesh on the IT radar screen has coincided with Mr N. Chandrababu Naidu taking over as the state’s

Chief Minister on 1<sup>st</sup> September 1995.

Andhra Pradesh was quick to realise that information technology was strategic to the state's future. Accordingly, the first Department of Information Technology in the country was formally established in Andhra Pradesh in 1998 to exclusively focus upon information technology and give the sector the impetus that it deserved. The Government of Andhra Pradesh also prepared a submission paper for the National IT task force, spelling out policies and initiatives that were essential for the country to achieve a position of leadership and excellence in the information age. The state has taken a number of steps to launch Andhra Pradesh into the digital age. These are detailed further in this paper.

### *Technology Vs. Management of Change:*

While the Government of Andhra Pradesh has taken up a number of key initiatives for promoting the pervasive use of IT in the state, it is significant that the state's experience bears out that technology is relatively less of a critical factor in this process. The induction of IT in government has to be addressed more as a major change management exercise, rather than one of merely providing technological solutions to existing problems. The human and organizational aspects therefore are more important as compared to technical issues per se.

## **2. Andhra Pradesh**

Andhra Pradesh is one of the less developed states of India. The population of Andhra Pradesh at 76.7 million is larger than that of most countries. If Andhra Pradesh were to be a country it would be the 13<sup>th</sup> most populous country in the world! It's per capita income is lower than the national average. Even in terms of literacy rates Andhra Pradesh had a literacy level estimated at 54% (1998) as compared to the national literacy rate of 62%.

The relative backwardness of Andhra Pradesh and its aspirations to become a knowledge society provides a useful case study of the strategic use of IT for achieving leapfrog development.

## **3. Broad approach**

It would be worthwhile to analyse the Andhra Pradesh experience of using technology to improve governance in terms of a major exercise in organisational change. John P. Kotter's approach of defining distinct stages for leading change within organizations is used as a framework in this paper while looking at the Andhra Pradesh case. According to Kotter successful change of any magnitude goes through eight stages. These are:

- a. Establishing a sense of urgency

- b. Creating the guiding coalition
- c. Developing a vision and strategy
- d. Communicating the change vision
- e. Empowering broad-based action
- f. Generating short term wins
- g. Consolidating gains and producing more change
- h. Anchoring new approaches in the culture

*Establishing a sense of urgency:*

Successful change requires a sense of urgency in order to attack inertia and complacency. Often visible crises can be enormously helpful in raising urgency levels. When the Chief Minister came to power in September 1995 there was a tremendous pressure on the government to perform. The CM had to establish his credentials and move beyond the shadow of a colossus like N.T. Rama Rao. The CM was keen to experiment with new ideas and explore new directions with a view to achieving quick results. It was found useful to use Information Technology for increasing accountability within government and for keeping a closer tab on the performance of sectors critical to the state's development. It is for this reason, that one of the first IT applications taken up was the development of a CM's Information System. Within the CM's Information System it was the power sector that was given a high priority in view of its potential impact on the lives of people across the state.

*Creating a guiding coalition*

It is important that a guiding coalition to champion the cause of Information Technology within government be created for effective deployment of IT. In the UK for example 'Information Age Government Champions' have been assigned for each department. Australia has Chief Information Officers for guiding information technology use in government departments. Andhra Pradesh has attempted to create a guiding coalition by adopting a two-track approach. Firstly awareness and training programmes have been organised for Ministers, Secretaries and Heads of Departments. All ML As were provided with training on computers for the same reason. Secondly an attempt has been made to build up a team of officers with a knowledge and understanding of IT and its attendant change management issues. Chief Information Officers have been identified for each department and trained at the Indian Institute of Management Ahmedabad and at the Indian Institute of Information Technology at Hyderabad. While the full benefits of this approach remain to be assessed it is likely to give good dividends in terms of capacity building within government for planning and implementing IT projects.

*Developing a vision and strategy*

It is necessary to have an overarching vision for the future in order to define a road map to move ahead. The Government of Andhra Pradesh embarked upon a major exercise to define a Vision 2020 for the state in association with McKinsey & Co., one of the leading international management consultancy firms. Information technology and knowledge activities are major components of the Vision 2020 goals as can be seen from the following extract:

“Andhra Pradesh will leverage information technology to attain a position of leadership and excellence in the information age and to transform itself into a knowledge society. The state will use information technology to improve the quality of life of its residents and help them achieve higher incomes and employment. It will also aggressively promote the pervasive use of IT to achieve higher levels of efficiency and competitiveness in both public and private enterprises”.

The strategy adopted for encouraging the pervasive use of information technology in the state has focused on four key elements. These are,

1. Developing world class IT infrastructure, including broadband digital connectivity.
2. Focusing on education and research institutions to ensure a pool of highly skilled and qualified personnel for the IT industry while improving the overall quality of human resources.
3. Making Andhra Pradesh the hub for Smart Government applications.
4. Promoting Andhra Pradesh as a premier location for world class IT companies.

It would also be worthwhile to point out that each of the four elements mentioned above form a tightly knit and closely related set of strategies that are critical to successfully inducting IT in government. Without good communications infrastructure for example, services cannot be electronically delivered to citizens. Without a good pool of trained manpower the state cannot hope to achieve excellence in the development and delivery of electronic services for citizens. Similarly unless the state has a large number of world class IT companies, the development and implementation of e-government applications will be seriously handicapped.

#### *Communicating the Change Vision:*

The success of any large scale IT initiative by the government requires a “buy-in” from the public. The Chief Minister has skilfully used the print and the electronic media for effectively communicating the importance of IT for the future development of the state. Information Technology has also figured as an important topic for the weekly ‘Dial your CM’ programme beamed across the state on television.

An important lesson that can be learnt from Andhra Pradesh's experience in using IT is the importance of involving stake holders in all aspects of planning, designing, implementing and maintaining computer based systems. Lack of such involvement can seriously thwart and derail IT initiatives. This can be seen from the problems that arose in setting up a 'Value Added Network Services' in the state.

In 1998 the Government of Andhra Pradesh together with a consortium of public sector IT companies from Singapore decided to set up an Andhra Pradesh Value Added Network (APVAN). APVAN was positioned as India's first value added network for delivery of online services. The network was to enable businesses, citizens and the government to interact with one another over electronic networks and realise the State's vision of taking the benefits of information technology to the masses. McKinsey and Co. were engaged to prepare a business plan for rolling out services under APVAN. While spelling out the value propositions for APVAN, McKinsey and Co. made a number of observations on reduction and relocation of existing staff. In the case of land registrations for example it was found that the department no longer needed to maintain its 214 computerised registration centres. Similarly in the case of the Employment Directorate it was observed that APVAN services would have the potential to reduce the number of exchanges from 39 to 9, and to reduce/relocate over 80 percent (390 people) of the staff.

These observations on APVAN quickly ran into a serious controversy with the employees associations. The employees apprehensions about the project snowballed into a major agitation. The project consequently had to be temporarily shelved and put on the back burner.

This experience can be contrasted with the experience under the CARD (Computerised Administration in Registration Department) project, which could be successfully implemented, as channels of communication were kept open with the employees and they were associated at each stage of the planning and implementation process.

These contrasting experiences highlight the importance of proper communications with all stakeholders for successfully implementing IT projects.

#### *Empowering Citizens and employees:*

It has been the state's experience that merely communicating the vision with various stakeholders does not guarantee success. It is also important to ensure that citizens and employees are truly empowered by technology. The CARD project for example has not only provided greater convenience to the citizens, but it also empowered the employees by removing the drudgery of copying documents in hand.

The importance of empowerment for successful implementation of IT projects can be highlighted further by citing the example of the Files Monitoring Project in the

state secretariat, which ended up in failure. A Files Monitoring System was proposed in 1996 to track delays in movement of files in the Secretariat. The system as originally designed, involved filling up of a number of formats, which were then keyed into computers for tracking files movement. This approach not only meant additional work for the employees but also made them feel vulnerable and threatened, on account of close monitoring of the disposal of files. The project met with stiff resistance from the employees and could not succeed.

*Generating short term wins:*

While implementing a large-scale programme of computerization, it is important that quick successes be achieved which can demonstrate the usefulness of technology as also maintain the morale of those implementing the projects. The series of successes achieved by the Government of Andhra Pradesh in implementation of projects like CARD, TWINS (Twin Cities Integrated Network Services) and APSWAN (AP State Wide Area Network) has kept the momentum going for further IT projects.

The success achieved in terms of construction of HITEC city, setting up of IIIT (Indian Institute of Information Technology) and location of development centres by major players like Microsoft in Hyderabad has kept up the tempo and continued to generate an air of positive optimism about the progress being made in IT. This aspect has been extremely important for maintaining an upward trajectory of achievement in respect of IT.

*Consolidating gains and producing more change:*

The state government has been continuously strategizing to ensure the consolidation of gains to produce even greater change in the future. For example the Government of Andhra Pradesh is currently in the process of setting up a unified portal that will integrate the delivery of citizen services on a 'one-stop non-stop' mode. The services of GartnerGroup have been engaged for structuring the portal since substantive issues of authentication of users, security and protection of databases, auditing of transactions, receipting of payments and privacy of citizen data are involved.

*Anchoring new approaches in the culture:*

Andhra Pradesh has sought to anchor new approaches as part of organisational culture by focusing on people, processes and institutions.

*People:* In order to ensure that Information Technology becomes an intrinsic part of the organizational culture in government, steps have been taken to build internal capabilities and skills through training of employees. As already mentioned Chief Information Officers have been identified for different departments and training

programmes have been organized for them at IIM Ahmedabad and IIT. Orientation programmes have been arranged for ministers, legislators and government staff to familiarize them with the basics of IT. The Dr. Marri Chenna Reddy Human Resources Development Institute of Andhra Pradesh has been equipped with computer training facilities to cater to on-going training programmes relating to government employees.

*Processes:* Frequently IT is used to merely automate existing processes, whereas it should be used strategically to radically improve organizational effectiveness. It is necessary therefore that IT should be part of an overall restructuring of organizational structures and procedures so that maximum impact can be achieved in terms of both quality of service to citizens and improvements in organizational effectiveness. Business process reengineering is essential for deriving the full benefits from use of IT. A comprehensive IT architecture is a *sine-qua non* for a successful realization of the IT vision for any state. The architecture covers the entire gamut of activities from planning to implementation of IT at a strategic level. It is necessary for example that different databases are interoperable in order to achieve better coordination between different departments. Since governments deal with extremely sensitive information it is also important that security and protection of data is ensured according to well laid out procedures and processes. Unless a proper architecture is devised it will be difficult to integrate various applications pertaining to heterogeneous departments. The Government of Andhra Pradesh has engaged the services of a leading consultant for developing an overall IT architecture for the state.

*Institutions:* A National Institute of Smart Government was proposed by the Government of Andhra Pradesh as part of its recommendations to the National IT Task Force. While a formal decision on setting up the Institute is still pending with the Government of India, the state government intends to set up a Centre for Smart Government under the aegis of the Dr. Marri Chenna Reddy Human Resources Development Institute of Andhra Pradesh with initial funding from UK's Department for International Development. Training facilities at the Dr. Marri Chenna Reddy Human Resources Development Institute of Andhra Pradesh have already been strengthened and the institute has been made nodal for all training programmes in government.

Future government will have to be very different from what it is today. Flatter organisational structures and more personalised delivery of services will be the norm. The traditional stovepipe model with each department being insulated from other departments will have to give way to 'joined up government'. Delivery of citizen services will require complex collaboration between employees across departments.

The Centre for Smart Government will focus on all issues concerning governance in the future. The centre will engage itself in conducting research, imparting training and providing consultancy support to government departments and agencies. The centre will also showcase various technologies and applications relevant to delivery of

better quality of citizen services.

## **5. Achievements:**

Andhra Pradesh has made significant progress in respect of each of the elements forming part of its strategic focus on information technology. Some of the highlights of progress made are presented below:

### *Bandwidth:*

The Department of Telecom had installed 20,000 kms of the fibre optic networks in the state by March 2000. As a result all 1125 mandal headquarters are now connected on fibre. Dramatic progress has been achieved in the availability of telephones. In March 2000, there were 2.227 million telephones in Andhra Pradesh, compared to only 0.647 million phones in March 1995.

A liberal right of way policy announced by the state government has resulted in a number of important private sector companies investing in high-speed digital networks. Reliance a leading corporate player, is in the process of establishing a 6,000 kms optic fibre network with bandwidths ranging from one terabit per second to 1 pectabit per second. Other companies like Tata Teleservices, Bharati Telecom and Zee Telefilms are also setting up broadband terrestrial networks. The Government of Andhra Pradesh recently entered into MoUs with Indian Space Research Organization (ISRO) for Ku Band communications on INSAT 3B as also with M/s. Satcom Holdings Limited Malaysia for Ku Band services on MEASAT 1 and MEASAT 2.

Reliance and Satcom Holdings Limited were planning international gateways with landings at Visakapatnam connecting through undersea cable with Kaula Lumpur and Singapore.

The Department of Telecom plans to enter into the cellular services arena. Existing cellular services are being augmented by Tata Cellular and AIRTEL to provide extensive coverage in the entire state.

On 1<sup>st</sup> November 1999 the Andhra Pradesh State Wide Area Network (APSWAN) was made operational. APSWAN provides connectivity between the state secretariat and each of the 23 district collectorates for purpose of data, voice and video communications.

### *Education:*

The State Government has facilitated the setting up of the first Indian Institute of Information Technology in the country at Hyderabad. The Institute is unique in that it combines the best of university education with training by leading IT companies. Multinationals like IBM, Oracle, Metamor, Motorola and Satyam have set up schools

as part of the IIT.

In respect of technical education, the number of engineering colleges in the state increased from 32 in 1995 to 104 now. For the first time a Bachelor of Computer Applications Programme was introduced and is now available in 414 colleges in the state.

Aggressive marketing by the state has resulted in the selection of Hyderabad as the location for the Indian School of Business (ISB). The ISB has affiliations with Wharton School and J.L. Kellogg Graduate school of Management and will commence its academic programmes in 2001.

An MSIT programme has been structured in association with Carnegie Mellon University in the USA for providing high quality world class IT education using distance learning methodologies. It is hoped that this programme will eventually provide the bulk of the skilled IT professional talent from the state for employment in highly remunerative IT jobs.

The State Government is working out the detailed modalities for using satellite communications and cable networks for delivering high quality educational content in schools. Apart from computer education and using computers for education, emphasis will be laid on thinking, analytical, creative and innovative skills that will become increasingly important in the future.

*SMART Government:*

The State Government has launched a number of applications in different departments as part of its SMART government initiative. The more significant among these have been computerization of property sale registrations under the CARD (Computerised Administration in Registration Department) project cutting down on the time for registration of such sales from 10 days to less than an hour. The project has been implemented in 214 Sub-Registrars' offices across the state. A pilot project TWINS (Twin Cities Integrated Network Services) integrates 19 services pertaining to 6 departments for delivery on a one-stop mode. Services range from utility bill/tax payments, issue of certificates, provision of information and facilitation. Under the FAST (Fully Automated System for Transport) project services like issue of learners licenses, driving licenses and registration of vehicles are being computerized duly networking 37 offices of RTOs in the State. An AP Development Monitoring System combining a sophisticated web-based GIS had been set up providing valuable data for decision making over the governmental intranet.

A unique project for building up a comprehensive citizens database has been launched in the state. Citizen's data has been captured for 76.7 million citizens. The data includes elements like date of birth, religion, relationships within the family, land holding status, type of shelter, occupation and annual income. Human

Development data has been digitised in respect of 16.8 million households in the state. This data includes information on indicators like education, immunization, family planning, electricity, drinking water and sanitation. Citizen data is currently being linked with data on 12 million land holdings to provide authentic information on the economic status of each family. A data warehouse using a Param Super Computer acquired from CDA has been set up in the State Secretariat.

*Public-Private partnerships:*

The state government has been proactive in attracting investments into the state. A major achievement was persuading Microsoft to set up a Software development Centre in Hyderabad. A host of other important companies including Oracle, Motorola, Erricson, General Electric, Lumley, Metamor and Tower Automotive have set up important centres for developing software in the state capital. Recently Bell Labs formally announced setting up a major research facility in Hyderabad. Private sector investments in IT have resulted in a steep increase in software exports with the quantum of exports in March 2000 being Rs.10.59 billion compared with Rs.5.74 billion in the previous year.

The emergence of Hyderabad as an important IT hub has been reinforced by major infrastructure projects like L&T HITEC city and ICICI Knowledge Park being established within a relatively short period of time.

**6. Conclusion:**

The successful induction of IT in government requires a change of mindset. This in turn requires great political will and determination and a clear headed and decisive leadership. Andhra Pradesh has been fortunate in having a forward looking political leader at the helm who has provided the vision and the leadership to achieve tangible success on the path to high technology.

The AP experience also underlines the fact that induction of IT into organizations is less a matter of technology and more a matter of managing change. The continued success of the experiment begun in Andhra Pradesh will depend on how far and how quickly changes can be brought about within the existing structures of government. It is of course not an easy task to transform the giant edifice of government with all its complexity and inertia to enter the brave new world of the information age.

Source: <http://www.andhrapradesh.com/> 07/11/2002