

IFIP WG 9.4

# INFORMATION TECHNOLOGY IN DEVELOPING COUNTRIES

Centre for Electronic Governance



विद्याविनियोगाद्विकाराः  
IIIM  
AHMEDABAD

A Newsletter of the  
International Federation for Information Processing  
Working Group 9.4  
and  
Centre for Electronic Governance  
Indian Institute of Management, Ahmedabad

Volume 16, No. 2, July 2006

Editor: Subhash Bhatnagar

## WEB VERSION

<http://www.iimahd.ernet.in/egov/ifip/wg.htm>

## EDITOR

Subhash Bhatnagar  
[subhash@iimahd.ernet.in](mailto:subhash@iimahd.ernet.in)

## CORRESPONDENTS

Richard Heeks  
[richard.heids@man.ac.uk](mailto:richard.heids@man.ac.uk)

Shirin Madon  
[s.madon@lse.ac.uk](mailto:s.madon@lse.ac.uk)

Stewart Bishop  
[osbishop@uwichill.edu.bb](mailto:osbishop@uwichill.edu.bb)

## EDITORIAL ASSISTANT

Mousumi Mandal  
[ifipnewsletter@iimahd.ernet.in](mailto:ifipnewsletter@iimahd.ernet.in)

## EDITORIAL OFFICE

Center for Electronic Governance  
Indian Institute of Management  
Ahmedabad – 380 015, India.  
Phone: +9179 2632 4128  
<http://www.iimahd.ernet.in/egov/>

## Editorial

**Welcome** to the July 2006 issue of the News Letter. This is vacation time for most academics and also the time to be attending conferences, traveling around and networking. I have just been to a research conference on the practice of E-Government in South Asia organized by the Business and Economics Department of Monash University on their Caulfield Campus in Melbourne. There were about 30 attendees including researchers from all the South Asian countries. It was nice to see more academics taking interest in ICT for development issues. The department is embarking on an ambitious program of research with collaboration between their faculty and academics from other countries in the region, particularly from Sri Lanka, Bangladesh and India. Perhaps WG 9.4 could forge some links with the group.



The action on the ground lags considerably behind the pronouncements made in conferences. All the talk in WSIS notwithstanding, the idea of an information society is progressing slowly in the developing World. India had embarked on an ambitious National e-Government program which includes the creation of a 100,000 rural Internet Kiosks. The program is making a slow progress. Similarly, the e-Lanka program has been hampered by political and administrative changes and is at least a year behind schedule. The bottleneck is almost always the internal capacity within Governments to manage the roll out of any large program.

*(Editorial continued on the [last page](#))*

## In this Issue...

- e-Gram Public Service Delivery in Rural Context...[2](#)
- Electronic Procurement system for the State of Sao Paulo...[8](#)
- A Web Based Judicial System...[10](#)
- Letter to the Editor: Some Reflections on ICT and Development...[14](#)
- Workshop Report: Paving the Roads towards Pro Poor e-Governance...[16](#)
- New books...[18](#)
- Conference Announcements...[19](#)
- Poverty-stricken Rwanda puts its faith and future into the wide wired world ...[20](#)
- Editorial continued...[21](#)

# e-Gram Public Service Delivery in Rural Context

*Rekha Jain<sup>1</sup>*

Indian Institute of Management, Ahmedabad  
[rekha@iimahd.ernet.in](mailto:rekha@iimahd.ernet.in)

## Summary

e-Gram provides for electronic issue of certificates required by villager's for generating livelihood opportunities. The objective is to improve the efficiency and effectiveness of service delivery by the government to the rural citizens. The specific ICT application consists of a digitized databank of family information on the basis of which certificates may be issued at the village administrative level. Of the total 18,000 administrative units, some of the planned services are available in 4826 administrative units, of which 561 have been connected to the Gujarat State Wide Area Network.

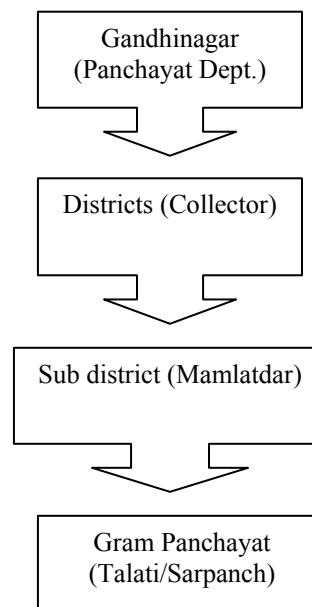
## Introduction

Gujarat is the second-most industrialized state in India. Its capital and seat of government is Gandhinagar. It has 18,544 villages. Each village or a group of village is administered by a Gram Panchayat (village administrative body) (GP<sup>2</sup>). A GP provides a variety of services and may also be the administrative interface for a number of other departments like Agriculture, Poverty Alleviation, Accounts, Social Welfare, etc. For example, the Agriculture Department at the GP level has the objective of assisting and advising farmers in their field activities like cropping pattern, conducting exhibitions on crop cutting experiments and maintaining records of inspections and results. The Social justice committee at the village level protects the interests of the backward class in villages and the Poverty Alleviation Department looks at providing grants to the villager's Below Poverty Line. There are 18,000 GPs in Gujarat.

The administrative hierarchy consists of GPs, sub districts and districts and is monitored by the Panchayat Department at Gandhinagar. Figure 1 shows

the administrative hierarchy and the representatives at each level.

Figure 1



Gujarat is among the leading states in India to invest money and resources for IT implementation in governance and citizen services. For example, the government has set up Gujarat State Wide Area Network (GSWAN)<sup>3</sup> that links Gandhinagar to district and sub district head quarters. It provides data, voice, video facility and Internet access via dedicated links provided by Bharat Sanchar Nigam Ltd (BSNL)<sup>4</sup>.

## What is e-Gram?

e-Gram provides for electronic issue of certificates required by villager's. Many of the villager's are poor and may need access to loans and subsidies for generating livelihood. The government and some banks provide loans on submission of a variety of certificates, which were manually produced. For instance, Income Certificate is necessary to obtain government subsidies, ration cards for availing benefits from the public distribution system, and free health care can be obtained only by showing proof of low income. Appendix 1 shows different types of certificates issued at GP level and their benefits.

In order to provide better services to villages, the government felt a need to computerise the village records.

<sup>1</sup> Research support by Meghna Mathur and Kavita Sharma is gratefully acknowledged

<sup>2</sup> Panchayat also refers to a council of elected members taking decisions on issues key to a village's social, cultural and economic life: thus, a panchayat is a village's body of elected representatives. The council leader is named 'Sarpanch' (in Hindi), and each member is a 'Panch'. The Panchayat acts as a conduit between the local government and the people

<sup>3</sup> GSWAN is a closed user group of Government departments with each District/Subdistrict connected to the State Headquarters and has connectivity up to district and sub district level.

<sup>4</sup> BSNL is the government owned incumbent service provider.



Also, there was no way for the government to monitor if the citizens' charter that specified service levels for a variety of services. The project, called e-Gram was initiated by Gujarat government in 2003 with the following objectives:

- Prompt issue of certificates, documents and application forms
- Quick redressal of grievances
- Providing other commercial services through e-Gram

#### Who is involved?

This project was decided to be implemented through Gujarat Informatics Ltd. (GIL), a government of Gujarat enterprise started with an objective to promote IT and accelerate the process of e-Governance in the state. The District Panchayat/State Government, District IT Fund/Donations/11<sup>th</sup> Finance Commission have provided funds for the hardware. Family Welfare Department/ District Village Development Agency provided the funds for software and GPs were responsible for site preparation. GIL manages the vendors, selection of hardware, maintenance contracts and project oversight. In the year 2004-05, 5875 computers (1,875 through donations and funding available with GPs 3,000 by state government and 1,000 computers aided by 11<sup>th</sup> Finance Commission) were provided. Appendix 3 gives the targets for the state wide roll out. Appendix 4 gives the current status of e-Gram.

#### How does e-Gram work?

The specific ICT application consists of a digitized

databank of family information on the basis of which certificates may be issued at the GP level. Recognizing the problems with the existing quality of data, a rigorous household family survey was conducted which included all the family information about the members and the household income drawn. The e-Gram software installed is PC based (configuration is presented in Appendix 2) and has been provided by National Informatics Centre (NIC)<sup>1</sup>. The module delivers certificates for the following:

- Birth
- Death
- Income
- Caste
- Domicile
- Property
- Residence Proof
- Agriculture
- Tax Collection
- Marriage
- Family Information
- Land Ownership (at sub district level)



#### Connectivity:

As the connectivity and maintenance costs were high, the government had provided internet connectivity at only a few locations only (561 GPs) through BSNL as pilot test. (BSNL is the only provider that has its phone lines laid in many villages). Depending upon

<sup>1</sup> NIC, a central government agency, assists in implementing Information Technology projects in close collaboration with Central and State Government.

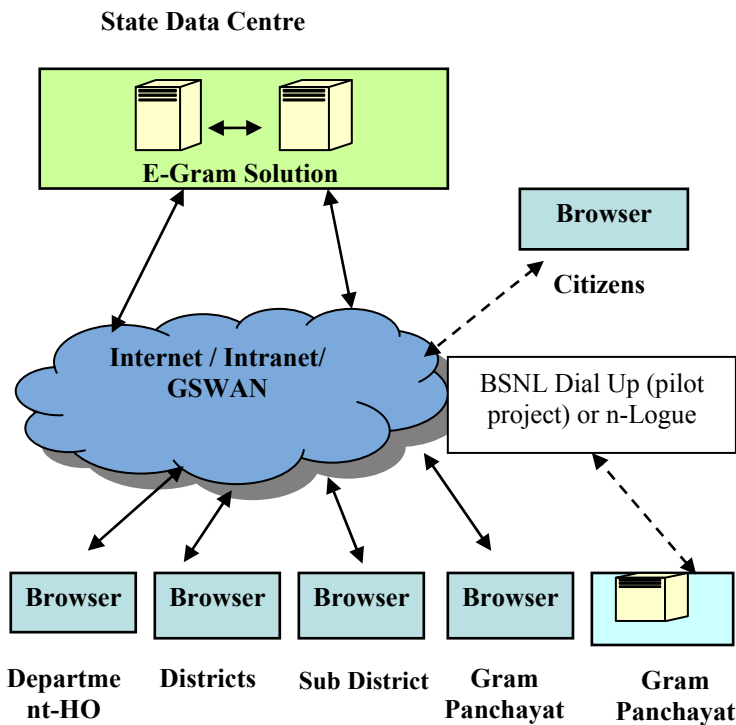
the performance of BSNL, connectivity of remaining GPs will be reviewed. Special features of this connectivity are:

- Exclusive cable independent of phone line at Rs. 350 per month
- No installation charges
- Free 25 internet hours per month
- Internet access card at Rs 5 per hour
- Provides minimum bandwidth for e-mail and data transfer

Whenever there are updates at the village level, the centralized database needs to be synchronized with the GP database. The synchronization also helps in maintaining the backup. Moreover, certain documents such as land records have traditionally been held/maintained at the sub-district level. For electronic print out of such records, there would be a need to connect the sub-district to the GP. Without connectivity and access to the individual's data, the Mamlatdar (the administrative head of the sub district) may not be in a position to access the records.

*Juna Chamu is the only GP having Gujarat State Wide Area Network (GSWAN) connectivity from the time e-Gram started. This is the only village that is connected on the GSWAN network.*

**Figure 2: System Architecture**



Direct Digital Reception System (DDRS) has been installed at all sub district panchayats and training centers to:

- Enable simultaneous telecast and Video Conferencing.
- Dissemination of information
- Introduction and discussion of new schemes of various departments Capacity building through distance learning

**Technical Support:**

To provide efficient technical support to all the GPs, the government was planning to form clusters of around 30-40 GPs which would be maintained by a private body. This entity would provide support, maintenance, training and system upgradation whenever required. The selected organization would also be responsible for identifying a person who would visit each GP to check the proper functioning of the system. A plan was also underway to appoint an operator with basic computational skills. The operator would be entitled to draw Rs. 1,000-1,500 per month. This would reduce monetary conflicts between the Talati and the operator. These mechanisms are yet to be implemented.

**What were the economics of the decision?**

The one time initial investment for installing e-Gram software is as follows:

Items	Amount (Rs.)
Personal Computer	27,000.00
Laser Printer	10,000.00
FWP/WLL/Telephone	1,000.00
Site Preparation	10,000.00
Cost of Training	1,000.00
<b>Total</b>	<b>49,000</b>

Source: From Panchayat Department, Gandhinagar

Following is the representative monthly expenditure (as a stand alone application):

Items	Amount (Rs.)
Stationery	250.00
Electricity Bill	200.00
Telephone Bill	500.00
Printing Expenses	50.00
Hardware Maintenance (after warranty period)	250.00
<b>Total</b>	<b>1,250</b>

Source: Panchayat Department, Gandhinagar

This cost desired/presented is on the assumption that 750 certificates are produced per month. The villager's are expected to pay Rs. 10 per copy of the certificate. The certificate production cost and revenues are monitored regularly by the Panchayat Department (Gandhinagar).

*Juna Chamu GP offers these services free of cost and would charge Rs 5 from April 2006 onwards.*

If we take the life of the project as five years and the cost parameters as stated above, the Net Present Value (NPV) at a discount rate of 18% is positive, showing that the project is viable under the stated assumptions. The project is viable, even at less than half the stated number of certificates issued (300). However, since the NPV is very sensitive to the revenues generated, lower charges could result in lower NPV values.

As a network application, the operating expense increases by nearly Rs. 600 a month. This includes a rental of Rs. 350 per month and assuming four hours of Internet usage per day and about 20 working days in a month. The NPV works out to be positive at nearly 350 certificates, with equal assumptions .

### Training

The Talati is responsible for issue of certificates in the computerized system. The government provides training to the Talatis. (Rs. 1,000 is the cost invested in training one Talati at a particular GP). The cost covers the following:

- A three tier computer training programme for the Talatis (till date 3,500 Talatis have been trained under the e-Gram program)
- Orientation and hands on training to 1300 employees of District Panchayats and sub district panchayats
- A 40 hour training programme for all e-Gram panchayat employees by professional organizations with focus on e-Gram
- Sustained technical and training support for three years
- Monitoring by e-Gram Cell of the Panchayat Department at Gandhinagar

### Vendor Selection Process

Selection for bidders was based on multiple levels of bidding. The first level selection is based on the eligibility criteria that incorporate parameters such as number of support centres in Gujarat, sales turnover, strength of technical staff etc. The technical bids comprise evaluation of hardware specs and adherence to established standards. The last stage is the financial

bid. The selection is done through an e-Procurement system, with the concerned person's digital signatures. Since GIL is able to combine the indents of several departments, it is able to get significantly lower prices. GIL's staff, visits the factory premises of selected vendors to give their seal of inspection for computers and equipment to be deployed. The maintenance contract includes stringent service level agreements.

The district level nodal officer, in charge of deployment, is trained about the various contract parameters. A performance security amount of 10% of the contract amount is released only on satisfactory performance. E-Gram has been able to get many national vendors, such as Wipro, Intel, IBM and state level vendor such as Pace computers.

### What problems does e-Gram addresses?

In the manual system, often the handwriting in the certificate was illegible. There was no means of verification for correctness of data. For example, an individual could cite different income each time an income certificate was issued. For access to a bank loan, the villager would like to cite a higher income reflecting a better capacity to repay, whereas for availing government approved schemes, it would be in the villager's interest to show lower income so as to qualify for more benefits.

The villager's were dependent solely on the Talati (a government revenue employee who holds physical copies and knows all the village records) for issue of certificates. The Talati was responsible for all the villages under the GP. Since Talati had to manage a group of villages, he normally fixed up a tentative schedule (adherence to which was low) and was not always present at a particular GP when the villager's required him. The villager's had to stand in long queues for getting their certificates. This system was not reliable and though the services were offered free of cost, at times, the villager's ended up paying bribes to get their work done.

The current implementation of e-Gram provides for printing of certificates from the existing database. The physical signatures of the talati on the printed document are required for the document to be held valid. In its current format, e-Gram does not provide for grievance redressal.

### How are these problems being addressed?

e-Gram provides for a transparent and quick system, with "clean" data. The proposed appointment of operators would reduce the constraint of talati not being available for issue of certificates. This would require changes either in the administrative set up or

through storing digital signatures of the talati and a process of record checking.

Currently, such services are available at 4826 GPs. No formal performance evaluation has been done. Therefore, it is difficult to quantify the benefits. However, anecdotal evidence suggests that e-Gram has been able to issue certificates efficiently. In the absence of prior benchmarking studies and formal assessment of time taken in delivery of services, it is difficult to estimate whether adherence to the citizens' charter has taken place.



### What were the limiting factors on e-Gram?

- As the e-Gram initiative is to be implemented in villages, availability of electricity is usually a major issue. However, as all the GPs under this program were under the Jyoti Gram scheme of government which provided round the clock power to villages, this has not been a major deterrent.
- The government faced a problem in creating awareness amongst the villager's for the use of computers and the services provided, as most of the villager's were below poverty line and had low levels of literacy. This was despite govt's

initiatives to spread awareness amongst the villager's about e-Gram using pamphlets, books and CDs. It also used the media (the local channel and Doordarshan (National government owned TV channel with a wide coverage)).

- Changing the mindset and training the Talati was a hurdle as he was hesitant to use the PC. Due to the existing design of the interface, it was not easy for him/her to grasp the right way to use e-Gram services. For the government, it was important to provide a "total solution" to the citizen. By requiring physical signatures on certificates, e-Gram did not provide for convenience to the citizen, as they had to wait for the talati. However, it did provide for transparency and reduction of delays.
- As the government had not planned any incentive scheme for Talati, he may not be motivated to use this new system. Earning money by getting the job work using the PC with the help of operator may be attractive to him but this also could result in sharing the money earned with the operator.
- Currently, around 5,875 GPs have computers, although services have started only in 4,826 GPs. Even these are not connected to each other. This decentralized system does not allow the data to be accessible among GP and to the Panchayat Department (Gandhinagar).
- In the initial stages, the government faced problems pertaining to connectivity and hardware infrastructure as no standard configuration was provided/ designed.
- Although Helpline numbers were provided to the villager's to log hardware and software problems, they were often not aware of the source of the problem and so could not log the complaint effectively.
- It is difficult and time consuming for the service personnel to reach the villages due to poor transportation facilities.

### What are the critical success factors for e-Gram?

- As the villages identified for e-Gram fall under Jyoti Gram Scheme of the government, access to basic infrastructure like electricity is not an issue.
- Focus from government in making the funds available for installation of computers and providing training to Talatis added to the success of the project.

- Involvement of organizations like Gujarat Informatics Ltd. in taking up these projects in mission mode is a valuable contribution to the project.
- The systematic and transparent processes adopted by GIL have become available for the project and have resulted in lower cost hardware.

### What are the key lessons learned?

- An incentive for the Talati should be determined as a driving force for him to learn and adopt himself to make use of e-Gram. There could be a mechanism for line departments to contribute towards e-Gram to share the expenses.
- Connectivity issue should have been considered in the initial phase of setting up e-Gram. Connectivity could have been tried on a pilot project basis initially.
- Though the system may be accurate and transparent, switching from a free and manual service to a paid service may be difficult for a poor villager.
- Making explicit information available about the actual cost of service and mounting media campaigns, possibly on cable TV may be helpful in making the e-Gram acceptable to the villager's.
- As setting up of e-Gram involved huge investment, it should have been started on a small scale and after overcoming the hurdles, it should have been implemented at a state level.
- There is a need to design a benchmark study and a quick operational review of the project in the conceptualization stage. The first would help in understanding the preference of the users for the services they need the most and thus would help in quick uptake and consequent better sustainability. The operational study would help in early identification of the problems on the ground (especially in the first phase) in a formal way, and address them.
- The issue of identification of kiosk operators has been found to be critical in most kiosk roll out projects. The enterprise and communication skills of the operator can drive up revenue by creating demand. In many such projects, significant revenue earners have been providing training, entertainment, digital photography etc. Recognizing this, e-Gram project would allow the operator to choose the content. The second

implication is that the state government has been carrying out sensitization programs to encourage the GPs to select an entrepreneur who can manage the kiosks after being trained. If the PC is to be operated by the "talati", an existing functionary, opportunities to select the most suitable candidate would have been foregone to run the kiosk. However, in the current model, the talati would be required to sign the certificate.

### Road Ahead

e-Gram is also planning to offer services like:

- Issue of land records, notices, receipts
- Maintenance of all registers and information
- Collection Centers for utilities. E.g. electricity, telephones etc.
- e-Gram to evolve as IT hub for administrative and commercial services
- Attempts are being made to integrate the line departments in e-Gram software by NIC

### Appendix 1: List of Certificates Required by Villager's at GP Level and Their Purpose

	<b>Purpose</b>
Income Certificate	As described above
Caste Certificate	The caste certificate is needed to identify the scheduled caste and tribes in order to further determine their reservation and benefits for job and education.
Residence Proof	Government employment at lower levels is restricted to candidates from a specified district or zone for which the candidate must provide proof of residence.
Domicile Certificate	Proof of residence is compulsory for admission to colleges and universities, including professional colleges.
Marriage Certificate	A marriage certificate is an official certified copy of the information registered when two people get married, including date and place they were married, their place of birth and residence, and the names of their parents.
Tax Certificate	The GP is responsible for tax collection and producing the tax certificate. It shows the general income and wealth, tax class and personal identity number.
Birth Certificate	A birth certificate is an official certified copy of the information registered when an infant is born, including who the parents are, and the date and place of birth.
Death Certificate	A death certificate is an official certified copy of the information registered at the time of death, including the date, place and cause of death.

## Appendix 2: Hardware and Software Configuration

### Hardware Configuration

- Personal Computer
- Intel P4, 1.9 GHz
- 15 inch color Monitor

### Software Configuration

Windows 98/2000

### Appendix 3: Targets to be Met

- All GPs with population above 1,000 (10,774) to be equipped with PCs by 31.03.2006. An additional 4000 GPs to have computers by March 2006.
- The remaining GPs to be covered by 31.12.2006
- Internet connectivity to the GPs by 31.03.2007
- GPs to provide integrated browser based application on getting connectivity
- Computer training for key panchayat representatives

In addition to this, there is a need for a database, enhanced application (web based), stable connectivity (WLL<sup>1</sup>, GSWAN, BSNL, Broadband is being tried at Kheda), Village Services etc.

### Appendix 4: Status of e-Gram

- 40 computers at each District Panchayat supplied with Operating system in 2001 and SQL software in 2003-04
- All district Panchayats connected through GSWAN
- 199 sub district Panchayats connected through GSWAN
- 2 computer personnel per District Panchayat deployed through NIC in 2003-04
- Successful implementation of District Panchayat and Sub district Panchayat of Accounting system
- Modules under field testing: Registry, Citizen's Charter, Court cases, disposal of pending pension cases, preliminary or departmental inquiry, payroll and provident fund, audit/inspection, monitoring of Gram Sabhas (meetings).
- 5875 GPs equipped with PCs
- All GPs of Kheda and Anand equipped with PCs
- E-services available in 4826 GPs

<sup>1</sup> WLL (Wireless Local Loop) is a system that connects subscribers to the public switched telephone network using radio signals as a substitute for copper for all or part of the connection between the subscriber and the switch.

- Internet connectivity in 561 GPs through BSNL
- Internet connectivity through n-Logue<sup>2</sup> in 197 GPs

## Electronic Procurement system for the State of Sao Paulo

*Maria de Fátima Alves Ferreira*

Secretaria de Estado da Fazenda de São Paulo  
[mfferreira@fazenda.sp.gov.br](mailto:mfferreira@fazenda.sp.gov.br)

### Introduction

The government of the State of São Paulo, on 31 July, 2000, instituted the electronic contracting system, establishing norms for expenditure execution, aimed at directly managed agencies and autonomous State entities, for the submission via Internet of vendor proposals, for "exemption from bidding" mode purchases, and "invited bids" purchases, for the acquisition of goods for immediate delivery, restricted to bidders previously registered in the Registry of Materials, Services and Providers, and Price Databank System – local acronym – SIAFÍSICO, in its supplier data bank.

This electronic procedure, later called "Bolsa Eletrônica de Compras do Governo do Estado de São Paulo - BEC/SP" (electronic procurement market) is the environment in which electronic contracting effectively takes place.

### Application Context

The BEC/SP System was implemented as a pilot project in September 2000, with the "exemption from bidding" mode. Due to the success of this pilot, the system was officially regulated by Decree 45.695, from 05 March, 2001. The expressive results attained since then, triggered demands for extension to other procurement procedures. The "invited bid" category was implemented in 2001, and, in October 2002, in partnership with the State Department of Health, the procurement of items related to drugs and other hospital supplies was included.

The system's success encouraged the State Government to offer, on October 2003, the use of the BEC/SP to all Municipalities and State-owned Companies of the State of São Paulo, for "exemption from bidding" purchases, and, in July 2004, to the State Universities.

<sup>2</sup> [www.n-Logue.com](http://www.n-Logue.com)

### Some of the relevant activities implemented to the work

- 2000 – implementation of the BEC/SP System for the Autarchic, Foundational and Direct Management for procurement procedures with exemption from bidding – purchases of up to R\$ 8,000.00 (about US\$ 3,000).
- 2001 – implementation of the invitation to bid category – purchases of up to R\$ 80,000.00
- 2002 – implementation of procurement of medications, correlates, cleaning and sanitizing products and cosmetics of medical, dental or hospital use, in the invitation to bid category – values of up to R\$ 80,000.00
- 2003 – increase in the BEC/SP System for the Mixed Economy Societies and the Municipalities – purchases of up to R\$ 8,000.00
- 2004 – increase in the BEC/SP System for the Universities – purchases of up to R\$ 8,000.00

### Initiation of BEC/SP system

The implementation of the BEC/SP System began for small value purchases, due to the absence of a specific procedure for acquisitions which are exempt from bidding. The system invites, on average, 1,000 suppliers to participate in the quotation of a specific product, thus, increasing the competition and reducing the offered prices. The practice enabled the State to save 25%, on average, in the acquisition of products. Due to the success of this initiative, the State organized a work group to implement the electronic procurement system for acquisitions of up to R\$ 80,000.00, in the category “invitation to bid”, without changes in the law.

The cultural change was immense, there was resistance to the system, but at present the system is used extensively by the purchasing units.

In face of both the operational and the procedural savings obtained, the State Government determined that all the acquisitions be made by using the BEC/SP System and also extended it to the presential reverse auction bidding category allowing additional great savings and increase in competition. This mode can be used for purchases of any value. The Government has determined that this reverse auction bidding, be extended to electronic auctioning and also that the State’s suppliers register be unified in order to streamline the procurement and contracting processes.

### Partnership and Resources used

The system was developed with international resources, that were managed by the Department of Finance, using the technical resources of the São Paulo

State Data Processing Company, with the additional participation of the State Attorney General; The multidisciplinary work groups involved also the Governor’s Staff Office (Casa Civil), and the State Management, represented by the Public Management Quality Committee – CQGP, to streamline the implementation of these new functionalities.

### Changes which resulted from the venture attained

There were several changes which resulted from the venture: the contribution to the balance of the budget, since the system allowed savings of 25%, the streamlining of the work processes and the standardization of procedures.

### OPERATIONS OF BEC/SP SYSTEM

Year	Number Of Offers Received	Reference Value Total (A)	Negotiated Value Total (B)	Savings (A-B)	Percentage Of Savings
2000	151	466,946	373,076	93,870	20%
2001	5,338	16,853,921	13,317,494	3,536,426	21%
2002	10,361	50,589,859	40,741,351	9,848,508	19%
2003	21,040	146,141,133	106,579,729	39,561,404	27%
2004	16,038	87,049,858	65,968,176	21,081,682	24%
Overall Total	52,928	301,101,717	226,979,827	74,121,890	25%

Update: 20/08/2004

### Some of the awards received are

- ADVB - Top Internet – 2000 - Top New Media – State Government/BEC
- 2001 Major Paradigma Project
- 2001 Quality Standard Award - B2B Magazine
- III Electronic Government Excellence Award - 2004 - ABESP - Brazilian Association of State Data Processing Companies – in partnership with the Ministry of Planning, Budget and Management

### Sustainability and transferability

New opportunities and demands have arisen since the implementation. BEC/SP has not stopped growing. Not only the Autarchic, Foundational and Direct Management integrate the system, but also the Municipalities, the autonomous State-owned companies and the Universities. Other organizations, such as the Brazilian Bar Association – local acronym OAB and the Brazilian Support Service for Small Enterprises – Sebrae, also want to join the system.

Due to the recognized success attained, additional resources were allocated to the project by the Inter-American Development Bank, for its expansion, which even recommended in its reports, the implementation of this procurement model to all the members of the federation.

The Department of Finance is now studying new projects to expand the BEC/SP System, reaching its highest point in the proposal to implement the electronic auction and a unified supplier register of all the units of the State.

### Key Lessons

The experience of working with projects was effectively the major lesson learned, something new for some participants. Therefore it became necessary to work with the behavior of the people so they would effectively work directed toward the attainment of results.

The possibility of working with consultants also deserves to be highlighted because it was highly positive, adding value, not only to the work, but also to the technicians who were able to make use of the opportunity to share their experiences.

The work with multidisciplinary teams was also one of the contributors to success and agility in implementing the project. Everyone was directed toward the same goal, no matter the position or job position.

The formation of a new department was from scratch because we had to count on the collaboration of employees from several areas, train and motivate them to participate in this new venture. It is worth mentioning that: today the satisfaction rate of the employees is very good.

Finally, as the leader of the project and due to the experience acquired, I advise that the employees adopt the model to manage by projects because it effectively adds value to the process and to human knowledge. Some of the documentary evidences are mentioned as below:

- **World Public Sector Report 2003 – E-Government at the Crossroads.** Source: A United Nations Publications, ISBN No. 92-1-123150-7 on October 2003 [BR-SP-BEC-Doc1.pdf]
- **Electronic Procurement Brings Agility and Savings to Bidding.** Source: Report Published in the daily newspaper “Valor Econômico”, page A10 on July 29, 2003 [BR-SP-BEC-Doc2.doc]
- **SP Saves R\$ 240 Million Buying Online.** Source:

Report published in the daily newspaper “Diário de São Paulo”, page A5, May 16, 2004 [BR-SP-BEC-Doc5.doc]

- **Metrô carries out electronic bidding.** Source: Report Published in the daily newspaper “Gazeta Mercantil”, page 1313 on May 11, 2004
- **A Network Against Corruption.** Source: Article Published in the magazine “Conjuntura Econômica”, page 114 on July, 2004
- **BEC Generated Savings of R\$ 39.5 Million in 2003.** Source: Report Published in the daily newspaper “Diário Oficial Poder Executivo – Seção I” on May 13, 2004
- **Cities from the High Tietê See the Introduction of the Electronic Auction.** Source: Report Published in the daily newspaper “Diário Oficial Poder Executivo – Seção I” on May 13, 2004

---

## Rajasva Vaad Avlokan (RVA)

*Somesh Kumar*

National Informatics Centre, Sultanpur, India

### Abstract:

National Informatics Centre (NIC) has taken a lead role in last one and half decade to incorporate Information and Communications Technology (ICT) in modernizing the Judicial System of the country. Computerization of Supreme Court of India and scores of High Courts has now started benefiting the masses. An MIS implemented in the District Civil Courts all over India has further enhanced the efficiency in the working of the courts. Services are now available to the litigants and lawyers through web-based systems. However, web enabling of District Revenue Court Cases has not been undertaken so far. This paper describes an initiative by NIC Sultanpur which has developed a web based application software titled ‘Rajasva Vaad Avlokan’ (RVA). RVA has been implemented in the revenue courts of the District Magistrate and *tehsils*.

### Introduction

With the growing trend of application of Information & Communications Technology (ICT) tools in almost every aspects of public utilities worldwide, accessing information for the citizens is now becoming faster and easier day by day. The web has become a channel for two way communication between citizens and service providers. Countries all over the globe have now started using IT in judiciary also. In United States some courts have already eliminated paper in the case

file, storing millions of pages of court proceedings in text files or images. E-filing documents with the courts will definitely become important service one day not very far off. Use of XML (Extensible Mark-up Language) for information interchange, and use of digital or electronic signatures, Pretty Good Privacy (PGP) etc. will remove the reservations regarding the security aspects, which might be hindering the application of ICT in this area.

In India too, some progress has been made. After the computerization of Supreme Court of India in 1990, litigants have been provided with different online services (e.g pending case status, posing of case lists for hearing) regarding the cases filed in Supreme Court as well as High Courts of the states. The Judgment Information System (JUDIS) makes complete text of all reported judgments of Supreme Court of India during 1950-1998 available on the Internet. Status of pending cases can also be obtained through Interactive Voice Response System (IVRS).

However, a few issues like security are coming in the way. Due to the concern about the sensitive nature of legal documents amongst the judiciary, the court computerization has been slow even in western countries like United States, France and Britain etc. This is evident from the fact that though there are over 17000 courts in United States, only 20 have adopted paperless system and bare 1000 or so have their websites [1].

In using Information Technology in judicial processes, use of local language and its script as the medium of documentation also plays a significant role for the wide acceptability of the services by general public. Though, information interchange among the judges or lawyers belonging to different states or countries may be impeded by the use of local language. In addition to above, the web based dynamic font technologies may also be used, besides conversion of files in PDF format.

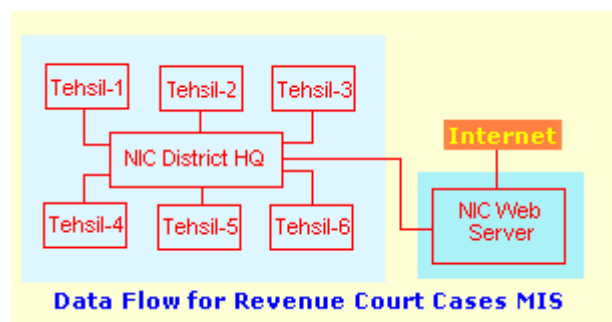
*“Courts first need to implement computerized case management system before they can accept the documents over the Internet.”*  
-- Richard Susskind

The application software discussed in this paper (**Rajasva Vaad Avlokan**) covers the use of ICT services for the District Revenue Courts, which are also important for general public. A database already existed at the district head quarter for offline monitoring of revenue court cases. This data is now made available on the Web. Clients can search their case status by the case number, by plaintiff's name, by defendant's name or case name wise etc. in *devnagri* script. The daily cause list and case history which are

useful services for the advocates are also provided. The following sections describe the database used at the back end, its parameter fields and the programming methodology used at the front end. Various services provided to the clients, advocates and presiding officers of the courts along with the menus are described.

### The Database and SW Development

The data for the District Magistrate's Court and other courts existing at the Collectorate Campus are entered at the client nodes installed in these courts. However, the revenue cases data of the courts at *Tehsil* headquarters are captured locally at Tehsil computers. A dial-up connection is used to transfer data from the Tehsil to the data server at NIC District Centre. Once the proposed Uttar Pradesh State Wide Area Network (UPSWAN) becomes operational, it will be utilized for data transfer. The illustration below shows this graphically.



*E-Governance is “the continuous optimization of government service delivery, constituency participation and governance by transforming internal and external relationships through technology, the Internet and the new media”.*  
--Shilubane, J

Microsoft Access which is easily installed on low end PCs and notebooks used by presiding officers has been used at the back end for maintaining the database. The database does not require large memory. The Front Page 98 is used for designing the web HTML pages, along with some help from Macromedia web designing tools. In addition, a major part of the application consists of Active Server Pages (ASP) with server side coding in VBScript. A major part of the application development is done on the local web server before publishing the files on the net using remote login.

### Database Parameters

The data are entered in *hindi*, using the *devnagri* script with the help of 'Kruti Dev 010' font. The software processes the information of all the revenue cases of all the courts at the district headquarter and *tehsils*. A

case is identified mainly by serial number and also by 'vaad sankhya' which is a number that is unique to each case. The following list describes the input parameters of the application.

### Location Based Data

- District Name and District Code
- Tehsil Name and Tehsil Code
- Block Name and Block Code
- Village Name and Village Code
- Thana Name and Thana Code

### Case based Data

- Serial Number
- Court Name and Code
- Section Number and Name
- Vaad Number
- Case type and Name
- Case admission date
- Plaintiff's Name
- Defendant's Name
- Plaintiff's Advocate Name and his Registration Number
- Defendant's Advocate Name and his Registration Number
- Next date of hearing
- Reason for next hearing
- Order date
- Order Dispatch No. and date
- Order Description
- Case Disposed status
- Full text of Order

### Project Implementation

The District Magistrate's Office, already has a furnished Computer Centre. The data entry is done by the regular staff who have been trained in computer operation and other applications such as MS Access, Word, Excel etc. In fact, capability building [2] process undertaken by NIC in past years has created a group of data entry staff with sound knowledge of day-to-day computer operations who are working in different government offices or departments of the district. In case of *tehsils*, the staffs deputed there for land records computerization have been assigned the job of supporting the concerned court personnel in data entry of revenue court cases.

### Features of Application

In the words of Ms. Kamini Chauhan Ratan, District Magistrate, Sultanpur: "in addition to providing easy access to the latest status of the court cases, the project

will also provide a mechanism to the presiding officers to monitor the cases pending in their courts. This will reduce the time delay in deciding the case and bring efficiency too. Moreover, the transparency brought by the system will also help curb the malpractices of the unscrupulous intermediaries etc."

For the main index page of RVA, visit <http://www.sultanpur.nic.in/dmcourt/dmcis.htm>.

The web services provided to the users are categorized in five broad groups:

- General Information
- Services to Clients
- Information to Advocates
- Presiding Officers Section and
- Other Important Notices

Figure 1: Different Pop-up Menus

General Information	Services for Clients	Information to Advocates
Some Useful Facts General Information reg.Courts	Vaad Sankhya Wise Case Detail Thana Wise List Block Wise List Case Name Wise Detail Client's Name Wise Detail Copy of Case Orders	Advocate's Name Wise List Advocate's Regi.No.Wise List Vaad Sankhya Wise Case Detail
Presiding Officer's Section	Other Important Notices	
Type Wise Cases Section Wise Cases Date Wise Cause List Order Sheet for Particular Case Summary of Disposed off Cases Cases Disposed Off by DMs	GO/6-10-05, Commissioner,BOR GO/13-10-05, Chairman,BOR GO/9-11-05, Commissioner,BOR DO/28-11-05, Member,BOR	

All these categories are shown on the upper part of the main index page of the RVA application. A pop-up menu opens when the pointer is brought over the related heading. A simple Java code is used to obtain this feature. The popped-up menu contains different sub-headings, which may be clicked for getting the next page or the required results. The following layout gives a clear perception of the services available in different categories mentioned above:

#### 1. General Information

This section is meant for providing some useful facts and general information about the number of revenue courts in the district, the sections dealt with in these courts, their jurisdiction and other related matters of common interest.

#### 2. Services for Clients

As already mentioned, the main beneficiaries of the

system are clients of the court cases. So the major part of the web services comprises of various reports for them. In view of the fact that majority of Indian population still belongs to rural areas and is not much literate, different options are provided to them to search their case. The *vaad sankhya* of a case is a main parameter to obtain the required information of a particular case including the serial number of the case which has a unique value. The *vaad sankhya* was till now not unique in all the cases. The decision to allot it a unique and standard value in future is now taken by the administration. In case the client does not know his *vaad sankhya*, he may find the same through *thana* or block wise listings. For *thana* or block wise listing, visit <http://www.sultanpur.nic.in/dmcourt/thw.htm>

The drop down menu on separate pages contains names of all the *thanas* and blocks of the district (or of a *tehsil*, as the case may be) from where the client may select the name of the same in geographical jurisdiction of which he or she resides. He thus obtains list of all the cases pertaining to that *thana* or block. This list provides the *vaad sankhya* of his case and corresponding latest order description. These lists may also be used by the presiding officers of different courts for monitoring the cases of a particular *thana* or block.

Clients may also get required information using the case name which has to be entered in *devnagari* script in Hindi. Similarly, using the options of giving plaintiff's or defendant's name may also retrieve the concerned case information.

The other remarkable feature of the application is facility to get a printout of the full case orders. Presently these are according to the dates on which they are pronounced. However, this mode will soon be replaced by more effective and convenient system of searching and retrieving. The orders are in PDF format and available from December 2005 onwards. Thus the clients are now in a position to get the copy of their orders downloaded and printed for easy reference.

**Figure 2: Details of a Particular Case**

Details of the Case are as follows	
1. Serial No.	704
2. Vaad No.	12
3. Court Name	D.M.COURT
4. Section No.	25
5. Section Name	15 क मदान अधिनियम
6. Case Name	राजस्व
7. Name of Clients	हौसिला प्रसाद बनाम मदान आदि
8. Thana Name	कुड़वार
9. Village Name	साइगौली
10. Date of Case Admission	7/26/2005
11. Next Date of Hearing	
12. Order Description	पट्टा निरस्त (06.12.05)
13. Order Date	12/6/2005
(Note: Dates are in Month/Date/Year format)	

Presented to you by National Informatics Centre, Sultanpur

### 3. Information to Advocates

An advocate of the plaintiff or defendant may also view the status of all the cases pending in the court by just typing his name or registration number in the form obtained by clicking the related link. If he has forgotten the registration number, which is unique, then he can check it from the list retrievable by clicking a link provided on the same page. As a result, the problem of same name of two or more advocates may be resolved. The lawyer may also find out the status of a particular case under him if he knows the *vaad sankhya* of the case.

### 4. Presiding Officers' Section

This section has also got major emphasis while developing the application. Entertaining a case with full transparency and efficiency and also within a reasonable time are some of the main requirements of providing justice to the clients. The computerization of court cases inherently brings the transparency as the court proceedings and other activities get become open to the public scrutiny. Moreover, as the retrieval of information from the written documents or loads of files is not so easy, the computerization of same plays a great role in overcoming this shortcoming. Preparation of cause list or getting the case history of an old case becomes very fast by adopting ICT in this situation.

The presiding officer may also visualize the list of all the pending cases and their status for civil as well as criminal cases in his court. He may also have a view of the cases section wise. The software provides drop down combo box from where a particular section may be selected to see the corresponding list. For section wise case listing, visit

<http://www.sultanpur.nic.in/dmcourt/secw.htm>

**Figure 3: A Sample Order Sheet**

Order Sheet of the Case			
Vaad No	Clients Name	Village	Section
712	छोटेलाल बनाम पुरखूल	कोरा	198 (4जातिकीआ)
12/6/2005	विरत / इडदाल		
12/12/2005	उपस्थिति हेतु		
2/3/2006	साह्य हेतु		
7/19/2005	पं०अ०व्यस्त		
8/9/2005	सुनवाई हेतु		
10/13/2005	सुनवाई हेतु		
12/6/2005	साह्य हेतु		
12/12/2005	साह्य		
1/2/2006	तलबी		
1/10/2006	उपस्थिति हेतु		
1/2/2006	पं०अ०व्यस्त		
1/24/2006	साह्य हेतु		

|Back| |Main Menu| |Home Page|

By National Informatics Centre, Sultanpur

Next important feature of the application is to get date

wise cause list. Any party to the case, lawyer or the presiding officer may check the cases listed for hearing on a particular day by typing the date only. This on the one hand avoids the visits of the clients to courts to find out the fresh date of hearing (in case he did not attend the proceeding himself or due to some other reasons) and on the other hand shortens the time delay in preparing the cause list for a particular date manually.

**Figure 4: A Sample Cause List**

Date Wise Cause List of Cases (Date is in mm/dd/yy format)				
01/31/2006				
Vaad No	Clients Name	Village	Section	Date
197	रामधर आदि बनाम लीलावती	गरय	115 पीठवाकिओ	1/31/2006
775	राम शिरोमणि बनाम मूलनन्द	बदनपुर	198 (4जवाकिओ)	1/31/2006
773	यशोधरा बनाम समाजीति		198 (4जवाकिओ)	1/31/2006
101	राज्य बनाम नरहे मिश्रा	सरकोइ	गुण्ड एक्ट	1/31/2006
92	राज्य बनाम मकबूल अहमद	परछपुर	आर्म एक्ट	1/31/2006
759	रामतेज बनाम जियावन आदि	गोविन्दपुर	198 (4जवाकिओ)	1/31/2006
750	ठाकुर प्रसाद बनाम रामधर	रामनगर लोडिया	198 (4जवाकिओ)	1/31/2006
754	रामनाथ बनाम गुरुप्रसाद	बेहरमारी	198 (4जवाकिओ)	1/31/2006
150	सरकार बनाम सुन्दर बाई	खेममऊ	198 (4जवाकिओ)	1/31/2006
778	अच्छेलाल बनाम पुल्लन	गोपीनाथपुर	198 (4जवाकिओ)	1/31/2006
148	सरकार बनाम राम कुमार	पीछी	198 (4जवाकिओ)	1/31/2006
94	राज्य बनाम मशूर अहमद उर्फ कोलई	परछपुर	आर्म एक्ट	1/31/2006
216	विक्रमाजीत बनाम राम मूरत	रुदौली	115 पीठवाकिओ	1/31/2006
107	राज्य बनाम प्रभात कुमार	गाजनपुर दुआरिया	आर्म एक्ट	1/31/2006

## 5. Other Important Notices

This section is used to display important Government Orders, Board of Revenue Orders and other significant letters from government for presiding officers of revenue courts or even for general public. Important notices from the presiding officers to the clients etc. may also be included in this menu, if required.

## Conclusion

The courts' proceedings and other records kept in archives of District Collectorate were digitized in a span of few months. Initially, an application software to manage and monitor the court cases offline was developed and used to prepare various types of reports to plan the court activities for prompt and efficient delivery of justice. This system worked very successfully to achieve the defined objectives. Thereafter, as the data was already in electronic form, it was made accessible through the net so that plaintiffs, defendants and concerned lawyers, could utilize the same by retrieving the information of their interest from remote places. The RVA is a service delivery system from the clients' viewpoint and management tool for the presiding officers.

As the revenue court cases' computerization has been undertaken in a number of districts, a switch over to its online version is not very difficult since necessary software tools are available readily.

## Acknowledgements

The author acknowledges the support from Ms. Kamini Chauhan Ratan, District Magistrate, Sultanpur and Mr. S.B.Singh, Sr. Technical Director, NIC Uttar Pradesh State Unit. Views expressed in the paper are solely of the author.

## References

1. *Ibid*,  
<http://www.abanet.org/tech/ltrc/research/efiling/articles.html>
2. Asok Kumar, Jt. Collector, Chitoor, Computerization of Mandal Revenue Offices in Andhra Pradesh: Integrated Certificate Application.

## Letter to the Editor: Some Reflections on ICT and Development

*Roy H W Johnston*

Techne Associates, Dublin, Ireland

[rjtechne@iol.ie](mailto:rjtechne@iol.ie)

*Roy Johnston has been a reader and a critic of our newsletter. He has been interested in the techno-economic and socio-technical aspects of the colonial to post-colonial transition in different countries. His past book 'Century of Endeavour'<sup>1</sup>, published by Tyndall/Lilliput in Ireland carries some of his ideas on the topic.*

I have been a reader of the IFIP WG9.4 newsletter for some time, over a decade, but have been conscious of a culture gap between the IT experts and the problems on the ground. This gap does however appear perhaps to be narrowing. I got some feel early on for the size of the problem, when I attended a conference in Algiers organised in 1973 by a combination of leading IFORS and IFAC people. IFIP was not involved in this epoch. I had come in from the IFORS angle, having been involved in the 1972 IFORS conference in Dublin. These International Federations reflect the barriers between differing modes of innovative thought and actions. The 'Operational Research' approach involves an attempt to predict the performance of an innovative system in a (usually stochastic) environment by modelling it, changing the parameters to answer 'what if..' type questions, usually at a strategic level. The 'Automatic Control' approach has the potential to liberate humans from doing boring jobs, and is

<sup>1</sup> An overview of the book 'Century of Endeavour' is available at <http://www.iol.ie/~rjtechne/blurb.htm>

relevant at the tactical level in most productive system. The 'Information Processing' community services both the foregoing, and all three communities have blossomed subsequent to the invention of the computer.

The IFIP community has however been dominated by 'Moore's Law' and the extreme speed with which the technology has advanced. This to my mind has created barriers between ICT innovators and the aspirant end-user community. Innovative systems emerge at a speed such that users are always at the beginning of the learning curve, and good systems are often forced into premature obsolescence. A version of Parkinson's Law suggests itself, which negates Moore's Law: 'Junk accumulates to fill the mass-storage provided'!

Let me get a bit more specific. In the 1970s I was involved with supervising postgraduate projects which involved the use of the (mainframe) computer in techno-economic analysis of projected investments in development projects, in 'what if...?' mode. The postgraduates were organised as groups, with specialisations, typically with one member organising and classifying the input data, another developing the processing structure, and a third specifying and developing the output structure to relate to the perceptions of the end-user (i.e. the sponsor). This latter process would now involve customising the GUI design.

Some of these projects were related to agricultural and related processes and were sponsored by co-operatives. They involved, among other things, the deployment of specialist harvesting machinery, transport and storage logistics, interaction with variable weather environments (for air-drying etc). The types of techno-economic system we modelled included harvesting of flax, biomass for energy, collection of milk in tankers (role of refrigeration), ergot as a pharmaceutical crop, deployment of an inshore fishing-fleet etc.

This type of analysis could now easily be done by a numerate co-op manager on a PC with a spreadsheet; in the 1970s we wrote one-off programmes in Fortran, and ran them in conversational mode without GUI. (In fact we developed in about 1979 a prototype spreadsheet, with rudimentary GUI, on a PDP11, for a firm which was then making an analogue feed-mix computer, and wanted to go digital. Unfortunately, this did not become the 'killer application' it now is until the PC arrived in the mid eighties.)

Ireland is a useful example of an emergent post-colonial nation on the fringe of a post-imperial system, exhibiting many of the features which the post-colonial world is now encountering.

I went to a UN conference in Nairobi in 1982 which attempted to bring together renewable energy technologies. There seemed to me to be many techno-economic and socio-technical analysis problems presenting themselves in this context, and I made an attempt to interest international agencies in supporting postgraduate project work in some systematic way, with a view to transferring technologies which would lead to sustainable development, avoiding dependence on oil. But the price of oil dropped, after the 1970s crises, and all this work became neglected. It is now however totally relevant again, and is likely to become more so, as petroleum supply declines, and demand from China and India pushes up the price.

The role of ICT in all this is to make feasible the type of knowledge-based analysis which sustainable development requires. My initial reading of previous issues of the IFIP newsletter suggests that it would be of interest, for example, to have access to the proceedings of the Kenya donor round table via published website proceedings.

Procedures are becoming the norm where mutually-recognising lists of experts, engaged in policy development discussions by e-mail using a list serve procedure, can access a niche website where current position papers are exhibited, and can be referenced by discussants. See for example

<http://www.iol.ie/~rjtechne/millard/index0.htm>

where I am supporting a healthcare analysis network with a niche web-site on the fringe of my own web-site.

It should be quite possible for the type of network arising from events like the recent 'Kenya round table' to run in this mode. One does not need a 'website design specialist' for this; a DIY job is quite adequate.

If I may comment on some recent IFIP Newsletter items: the 'simputer' concept deserves analysis; it would be of interest to get some systematic analysis of who the end-users are, as indeed who the end-users are of the cyber-cafe access-points. I encountered a draft paper on a similar topic based on African experience (I was asked for peer-review comments) and picked up the impression that they were literate youth seeking to pick up degree qualifications from US universities, with a view to emigrating problem of 'brain drain'. This is the last thing we need for ICT in developing countries; nor do we need the commercial video game arcade scene, though there is a role for interactive games in a guided learning process.

It seems to me that the key end-user is the local leading activist, the aspirant co-op manager, who needs access to relevant knowledge for local economic development. This type, rather than self-motivated individuals seeking self-improvement.

I have seen a paper which analyses in depth the uptake of ICT in a developing country, and which attempts to identify how this can be used to eliminate poverty. This contains many good ideas, but is densely written, with long paragraphs, many notes and references, and a huge bibliography. It ends with a long list of things to be done, but without clear indication as to who specifically is to do them.

There is a clear need for analysis and interpretation of academic work, distillation of the essential results, and development of practical system for trying out the ideas on the ground, by people with local standing and local knowledge. There is much experience of this process in a fringe-European context, analogous to the work I have described above which was done in Ireland. This needs to be cultivated, and used as a resource.

A possible model is the 'quad-link': take a university or college of technology in Ireland, Finland or other fringe European countries, which have developed a relationship with an innovative enterprise locally. Find a comparable pair in a developing country, Nigeria or whatever, and set up the linkage. Initially people can perhaps meet at a conference, and then continue to interact in virtual mode, learning from each other, the common experience being accessible via a web-site knowledge-base, containing structured sequences of position papers and progress reports.

I have not seen this process yet, but I have seen it trying to happen. For example, I have a client which is a firm specializing in healthcare IT; it has many university research contacts all over Europe. Leading people from the firm went to Africa seeking to develop the healthcare IT market, hoping to find an association with a local firm. It failed to find a suitable firm to co-operate with, all the IT firms being international majors, and the process of innovative start-ups fuelled by local initiative had not yet developed. My parallel contacts with the related academic system were equally fruitless.

So, it may be that to catalyze the way forward the African academic system needs to develop a policy for postgraduate work at the masters-degree level, with group projects, looking into the feasibility of productive added-value processes based on local resources, resulting on theses which would not just lie on a library shelf, but would in effect become business plans for a new wave of technically competent small firms. The 'quad-link' hand-holding process would

then become feasible, and the 'entrepreneurship' process would be seen as constructive rather than predatory, as it often is. Perhaps this is happening already, and if so, it should be encouraged.

Let us then try to develop a 'virtual' discussion among a few people, perhaps around the issue of how best to identify the key end-user capable of coupling ICT potential to the requirements of economic development at the village level. Can the drift to mega-urbanization be avoided by intelligent use of ICT, and the effective localization of food production, with high local added value, made the norm? This is going increasingly to be necessary, as the oil wells dry up and energy costs increase. This aspect of the problem also needs to be developed, but this is another story!

---

## **Workshop Report: Paving the Road towards Pro Poor e-Governance**

The workshop was organized by United Nations Development Program (UNDP), Asia Pacific Development Information Program (APDIP) and United Nations Centre for Regional Development (UNCRD) in Bangkok from 26-27 April 2006. This is an abstract from a workshop report prepared by Subhash Bhatnagar, who was the key note speaker at the workshop. The Regional Development Dialog Autumn 2006 issue will carry the papers, And two commentaries on each paper. The issue will be guest edited by Subash Bhatnagar.

Twenty papers from 12 countries of the Asia and Pacific region were presented at the workshop. From each country, two kinds of perspectives were presented—one from the Government written by a senior Government functionary and the other from the civil society. The cross section of countries represented a wide range in terms of their e-Government readiness and actual degree of ICT use in the public sector. For example Japan, Korea and Hong Kong are very high on most e-readiness rankings and have a large number of e-Government applications. On the other hand, Pakistan and Mongolia may be considered at the lower end of e-readiness index with few country wide applications. The mix of countries included large countries such as India and China and small island countries like Sri Lanka and Pacific Islands.

The papers indicated that some form of e-Government is happening in all countries. Some countries like Sri Lanka reported plans for country wide e-Development

programs encompassing ICT sector development and e-Government as a major components. India and Cambodia have a National program on the anvil for development of e-Government. Other countries which do not have national programs, none the less reported several e-Government applications that have been built in different sectors. However, taking an overview it would be fair to say that most of the developing countries from the Asia Pacific Region are just embarking on e-Government.

The focus of most of the applications is on internal efficiency rather than service delivery. Choice of application is mostly urban focused. Needs of poor have not been specifically targeted. By and large papers did not offer a critical review e-Government plans and strategies in their countries. Most papers presented a supply side view of e-Government—how many agencies have computerized or how many web sites have been developed. A systematic analysis of use and impact was not reported. However, even the limited supply side view indicates that the needs of the poor, rural populations and vulnerable groups have been largely ignored by e-Government planners.

Many of the case studies indicated the potential to impact the lives of the poor and disadvantaged communities. Some of the interesting examples were: an effort to involve communities in local planning and governance through electronic networking in Mie Prefecture in Japan by the local administration; use of mobile phones and SMS and its impact on Democratic Governance in the Philippines; Role of NGOs in promoting IT literacy of elderly in Hong Kong highlighting the problem of digital exclusion even in high income countries. Papers from India, Sri Lanka and Mongolia presented their experience in implementing telecenter projects in rural areas. Papers from Thailand described the promotion of rural e-commerce in Thailand and a paper from China described how interviews for migrant workers were conducted using video-conferencing in China. Papers from India and Pakistan traced the impact of computerization of land records. A paper from Cambodia presented interesting data on the extent of rent seeking in the manual system that existed prior to the introduction of Government Administrative Information System (GAIS) and a suggestion that rent seeking had gone down after the introduction of GAIS. Collectively these examples indicate that ICT applications can be designed to deliver benefits to the poor (Pakistan, India, China, Thailand) and can also empower the citizens by promoting transparency and reducing corruption. There are many ways such as electronic bulletin boards and SMS through which participation can be facilitated. Creating economically viable telecenters in rural areas through NGO/private

sector participation is a possible means of providing access to rural and isolated populations.

There are some obvious challenges in building pro-poor e-Government. Most developing countries lack the necessary infrastructure to build computerized system and provide access to such systems via the Internet in rural and remote areas. Even the basic infrastructure of a stable electricity supply does not exist in rural/remote areas of most countries. Basic communication infrastructure such as access to telephony is also poor as is reflected in the table below. In the absence of telecommunication infrastructure, providing Internet access in rural areas becomes expensive. The challenges that are recognized can in some measure be overcome with additional resources. However, there are many challenges that are not recognized. There are other forms of divide, such as gender, age, economic, regional which also need to be overcome. Providing services at the door step of populations with greater heterogeneity and geographically dispersed demand escalates costs.

### **The way forward for pro poor e-Governance**

The primary concern is one of lack of focus of national e-Government strategies on policies on vulnerable groups—whether these are poor who can not afford to access services or those groups which are denied an opportunity to access because of some other barrier. As the Chinese paper indicated, the political profile of these groups will need to be raised for them to receive consideration from the policy makers. Often the failure to impact the poor comes not from a lack of intent and strategy but from poor implementation.

Almost all authors mentioned sustainability of projects as a main concern. The ‘level of participation of the poor’; ‘capacity building / education’; ‘commitment of government’ are factors relevant to long term sustainability of pro-poor e-government initiatives.

Economic viability of projects is important for long term sustainability. The design of each project must focus on activities that help generate income. These could be affordable user fees, commissions from delivery of priced services offered by the private sector and opportunities of earning advertising revenues. Involvement of private sector through Public Private Partnership is seen to be a means of ensuring sustainability.

Given that e-Government is in an early stage in many countries of the region, the way forward can at best define the first steps that can be taken. In the concluding sessions of the workshop the participants suggested the following steps.

- Each country should define as to which sections of the population constitute the vulnerable group that needs to be targeted. Their geographical spread needs to be mapped. Participatory approaches need to be used in developing e-Government programs and plans, so that the needs of the poor are well articulated and can be reflected in the choice of applications and their design.
- Existing national e-Government programs and e-Government projects should be audited in a systematic way to determine the potential and actual impact on poor and the vulnerable. A Tool Kit can be designed for the purpose of carrying out such an audit.
- Policy makers need to be sensitized to the fact that the digital divide will be further exacerbated unless e-Government specifically focuses on the poor and the vulnerable and that e-Government has the potential to deliver significant benefits to the vulnerable/poor.
- Capacity needs to be built for e-Government program designers to:
  - To promote participation by relevant stakeholder groups from civil society in formulating e-Government plans and strategies
  - Define policy frameworks that promote the use of different technologies that are relevant for the poor; provide incentive for creation of appropriate content, and create affordable and convenient access points
  - Make application choices that can potentially impact the poor/vulnerable
  - Create partnership with NGOs, media, and Private Sector in implementing pro poor e-Governance
- Capacity needs to be built for project implementers to use participative methods in design and implementation of projects/applications focused on the poor/vulnerable.
- A large amount of training material (case studies, tool kits) needs to be created to support capacity building.
- There is considerable scope for regional cooperation in sharing telecommunication infrastructure for creating access points, build content and exchange best practices.

---

### New books

## **Reinventing Public Service Delivery in India: Selected Case Studies**

**Edited by Vikram K. Chand**

This volume focuses on successful innovations in public service delivery in India and draws lessons for scaling-up and replications. It documents and analyzes eight cases of innovation in service delivery across a range of sectors in India along with two additional papers on strategies to surmount larger strategic constraints to improved service delivery. Two of the case studies are on e-Government applications. The criteria used to choose these cases are four-fold. First, they represent some form of institutional reform in service delivery. Second, they have been culled from across a variety of sectors, making it possible to discern common threads in reform. Third, there is evidence to indicate a positive impact on service delivery including surveys, and/or recognition by a credible external organization. Finally, these cases are examples of stable initiatives that have been in existence for at least two years.

By presenting these detailed case studies of how public service have been transformed across a range of sectors, this volume provides a deeper understanding of the key causal factors and processes involved in reform over time as well as some of basic systemic issues that can potentially complicate the implementation of reform.

The book has been published by Sage, New Delhi and World Bank, Washington, 2006

---

## **Technology Adaptation And Exports** *How some developing countries got it right*

**Edited by Vandana Chandra**

The book has assembled a rich portfolio of case studies of successful industrial development experience in a series of poor and formerly poor countries ranging from Kenya to Taiwan. A striking generalization that emerges is that government has been involved in an important way in supporting and promoting technology development and institutional innovation in support of private sector entrepreneurship in each of the case studied.

The industries studied range from the processing of resource-based commodities to advanced communication technology. Public support played a critical role in enabling firms in these industries to become competitive in domestic and international markets. As the technology employed in the several industries became more sophisticated, government support in the form of technical training, technological development, and scientific research, and in the reform of market and regulatory institutions, also became increasingly important. The book emphasizes that that technological learning and upgrading is an essential

part of the economic development process, and that government programs have a profound influence on the effectiveness and direction of technological learning.

The book has been published by the World Bank, Washington DC, 2006

## Conference Announcements

### **22<sup>nd</sup> IFIP TC-11 International Information Security Conference**

**May 14-5, 2007, Sandton Convention Centre, Sandton, South Africa**

Information is now the most important commodity in a global market. Individuals, businesses and governments are dependable on information embedded in secure, privacy aware and trustworthy IT infrastructures. Classical information security services such as authentication and authorisation urgently demand a re-design and improved implementation to ensure security, privacy and trust features in today's integrated and complex information rich environments.

Papers offering research contributions focusing on security, privacy and trust are solicited for submission to the 22<sup>nd</sup> IFIP TC-11 International Information Security Conference.

For further details, visit

[http://www.sbs.co.za/ifipsec2007/ifipsec2007\\_HOME.htm](http://www.sbs.co.za/ifipsec2007/ifipsec2007_HOME.htm)

### **IFIP 8.6 2007**

**June 14-16, 2007, University of Salford**

Although significant progress has been made, aided by academic colloquia such as IFIP WG8.6, technological innovation continues to be problematic for many organisations, with the rate of failure of IS/IT projects remaining stubbornly high.

It is clearly important to understand why some innovation efforts are successful while others fail – why the same technology that “diffuses” in one context meets only resistance and rejection in others!

The aim of this conference is to help move forward our understanding of the organisational dynamics of technology-based innovation by diversifying the research agenda in three general areas: theoretical perspectives, methodologies, and organisational sectors.

For further details, visit

<http://www.ifip86-2007.salford.ac.uk/index.php>

---

### **WG 9.4: 9<sup>th</sup> international conference on Social Implications of Computers in Developing Countries**

**May 28-30, 2007, Sao Paulo, Brazil**

It is widely recognised that ICTs can both be part of a widening gulf between ‘information rich’ and ‘information poor’ countries or regions, and that they are a ‘potentially powerful tool’ with the capacity to meet development goals such as basic health care, poverty reduction and education. Countries, it is argued, that can harness the potential of ICTs can expect accelerating economic growth, improving human welfare and the fostering of good governance practices.

It is now seven years since a wave of expectation swept the world now referred to as the dot.com boom. Much has happened since then, and a number of international and national programmes centred on ICTs and development have been running for several years. Perhaps now it is opportune to take stock of e-development, and to evaluate and critically analyze initiatives and assumptions. E-development covers a wide range of topics which includes but is not confined to e-learning, e-government, e-education, e-inclusion, and economic development centred on ICT technologies.

We invite papers that describe, develop arguments, and draw conclusions from the multitude of development projects that have begun in the last seven years. More general papers that take stock of aspects of e-development are very welcome as are those that look to the future in this area. In addition to work in the information systems field which is a key focus of the conference, we wish to encourage contributions from other disciplines such as development studies, political science, political economy, social anthropology, sociology, to name but some, which illuminate themes and identify differences through a willingness to engage in dialogue within and between disciplines. As this conference takes place in São Paulo, Brazil we would also like to stimulate debate that takes Latin America as its focus.

The contribution of Latin American studies to thought on development has been immense and it is not too presumptuous to say that some of the most interesting developments in ICTs are taking place here. We strongly encourage those working in the areas discussed above to contribute to the on-going debate on Latin American development and the role of ICTs.

For further details, visit

<http://www.ifipwg94.org.br/index.php>

## 16<sup>th</sup> International World Wide Web Conference May 8-12, 2007, Banff, Alberta, CANADA

The World Wide Web Conference is the global event that brings together the key innovators, decision-makers, technologists, businesses, and standards bodies shaping the Web. Organized by the IW3C2 since 1994, the WWW conference is the annual gathering place of the international community to discuss and debate the future evolution of the Web.

For further details, visit <http://www.iw3c2.org>

---

### Poverty-stricken Rwanda puts its faith and future into the wide wired world

*This article has been abstracted from a piece written by Xan Rice in Kigali, Tuesday August 1, 2006, The Guardian.*

A mobile in every pocket is the motto of this tiny country, aiming to be the hub of technology. Office workers, talking over Skype, and fibre-optics cable snaking hundreds of miles underground and to the top of a 4,500-metre volcano. Paperless cabinet meetings, with every minister using a laptop. These may sound like an advanced western country rather than a tiny, poor African state. Yet this is Rwanda, now in the midst of an extraordinary development plan to leap into the 21st century.

More "mobile in every pocket" than "chicken in every pot", the Vision of 2020 project, aims to rapidly transform a depressed agricultural economy into one driven by Information and Communication Technology (ICT). If it works out then the percentage of Rwanda's workforce, involved in farming will drop from 90% to 50% in 15 years. By then, the country should be the regional ICT hub - a kind of Singapore of the Great Lakes.

The Donor countries are more cautious. Two-third of the Rwandans live below the poverty line, half are illiterate and four in five live in rural areas. Aids and the 1994 genocide have created tens of thousands of orphans. Technology is not the main priority, they say. But government officials insist that not only their plan is viable, but that there is no other alternative. Rwanda, being one of the Africa's most densely populated country, large-scale farming is impossible. Also there are few valuable minerals or oil deposits. So the country is landlocked. When the ICT plan was launched in 2000 only one school in the country had a computer, a single internet cafe and a handful of

science graduates, and fewer than 100,000 of 8 million people had mobile or fixed-line phones.

Today half of the 2,300 primary schools have at least one computer, 30 internet cafes in the leading cities and there will be 30 more in even the most remote rural areas by 2007. Telecom companies hawk broadband internet for home use. More than 300,000 people have mobiles. If a plan to assemble phones locally, and sell them for the equivalent of £19 with six months to pay, comes to fruition the growth will be even faster.

The Kigali Institute for Science and Technology (Kist), established in 1997 at a former army barracks, has already graduated nearly 2,000 students. Still it is just a fraction of the tech-savvy workforce the country needs, which is why, bringing schools online is seen as crucial. In a two-year, £20m project, the state electricity company will lay fibre-optics cable along with its power lines. Cables will be run to schools within three miles of the national grid, giving them high-speed internet access. Thousands of computers are being ordered for schools from Rwanda Computer Network, which has already assembled and sold more than 6,000 "Gorilla 1000" desktop computers to the government and banks. A software firm has translated a free open-source version of Microsoft Office into Kinyarwanda, the main language.

Meanwhile, the government is offering incentives to attract private investment. The home of the senate, a modern seven-storey building, is being turned into an "ICT park" for hi-tech companies that will receive free rent and utilities. Five young Rwandan graduates are in charge, aged 26 to 34, all have studied abroad - in India, South Africa and France - and all have master degrees in technology-related fields. The rest of Africa is already taking note. Kigali has also been selected as the headquarters of the 23-country Eastern African Submarine Cable Project, which will greatly increase internet bandwidth in the region. The telecom mast at the top of the Karisimbi volcano, will serve as a regional air traffic control centre. But the biggest challenge is bringing ICT to the poorest rural areas and making it sustainable. A few internet cafes that were set up in small villages failed because people could not afford the dollar-an-hour internet fee. But in the dusty village of Nyamata, 90 minutes from Kigali, Paul Barera, a 29-year-old Kist graduate, has made his shop work - for him and for his customers. He helps a dressmaker Donatille Mukakarara, 38, to use Google to search for new patterns once a week.

Full text available at

<http://technology.guardian.co.uk/news/story/0,,1834623,00.html>

## Editorial

*(continued from page 1)*

Even as the Government apparatus moves slowly, we have some confirmation that electronic delivery of services is delivering some concrete benefits to citizens and businesses. The *catch is* that such projects need to be implemented successfully. The projects should be up and running without hardware/software/electricity failure and a willing workforce that adheres to hopefully robust procedures. These positive findings emerge from preliminary results of a systematic impact assessment study funded by the World Bank and IIMA in which researchers from IIMA and LSE are participating. Ten mature projects from India (Andhra Pradesh, Karnataka and Gujarat) and Chile are being assessed. A key part of the assessment is a survey of a reasonably large random sample of clients (citizens and businesses) that have used both the manual system and the computerized system. A comparative assessment of manual and computerized system on direct costs of accessing services, quality of service, quality of governance, indicates marginal to significant improvements. The impact will also be compared across the ten projects, as all the projects have been rated on a common set of 18 desirable attributes. The surveys were conducted by a Market Research Agency. The team hopes to be able to share results by the end of October. Another part of the research study is to explain the factors that contributed to the impact.

I return to my usual crib before I sign off. We need more active participation from our readers. There has been a suggestion that we should convert the newsletter into a blog. Any supporters of the idea?

### The IFIP WG 9.4 Newsletter Website

The [Information Technology in Developing Countries](#) Newsletter has been published by Prof. Subhash Bhatnagar (Founding Chairman of IFIP WG 9.4) through support of various agencies such as IDRC and COMNET-IT in the past. In the recent years, the Newsletter has been supported by the Indian Institute of Management, Ahmedabad (IIMA). IIMA has designated the [Centre for e-Governance](#) (CEG) to be the most appropriate home for the Newsletter. Henceforth it has been published as a joint publication of IFIP WG 9.4 and CEG, IIMA.

A legacy of 10 years of print circulation to its credit, this newsletter is now published on the web.

The next issue of the newsletter will be published in August 2005. For Archives, Subscription details and Guidelines for contributions, please visit the Newsletter website:

<http://www.iimahd.ernet.in/egov/ifip/wg.htm>