Fostering community interaction through the Trivandrum City Police Portal

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ABSTRACT

The Trivandrum City Police Portal is an example of fostering government-community interaction in the area of law enforcement. The portal has been in operation since 2004 and has been widely used by the city's police force and citizens. The paper discusses the origins and motivation of the police portal project, the design of the system in terms of its functional interfaces, lessons learned in implementing and running the system for the last few years, some limitations of the current implementation and scope for further work.

Categories and Subject Descriptors

H.4.1 [**Information Systems Applications**]: Office Automation—*Workflow management*; H.4.m [**Information Systems Applications**]: Miscellaneous; J.1 [**Computer Applications**]: Administrative Data Processing—*Government*; K.4.3 [**Computers and Society**]: Organizational Impacts—*Automation, Computer supported collaborative work*

General Terms

Keywords

Portals, E-Governance, Police, Community interaction, ICT

1. INTRODUCTION

Over the last several years, e-governance has received wide attention in India, specially in the context of the larger goal of application of information and communication technologies (ICT) to development and the challenges in applying them to promote national growth [5].

E-governance initiatives have been traditionally concerned with building software and web-based systems for archiving information records and providing service delivery. More recently, the emphasis of e-governance has extended beyond data archival and service delivery in the traditional sense. E-governance is being seen as important for fostering partnerships between the government, its citizenry and civil society organizations. In the area of ICT applications to police, the focus of is shifting from law enforcement [9] to building community partnerships [6].

It is in this context that we demonstrate the Community Interaction Portal of the Trivandrum City Police [3]. Trivandrum is a medium-sized town with a population of about 0.75 million. It is the capital of Kerala, India's southernmost state on its west coast known for its remarkably high standards in many social indicators, specially health, literacy and communal harmony. Much of this can be traced to Kerala's strong grassroots democracy movements and also progressive government initiatives. The portal, operational since 2004, was conceived with the goal of not merely bringing into e-mode yet another government service, but building a platform for strengthening community partnership and grassroot citizen participation. The portal won the silver prize in the 2005 All India Manthan Award in the e-governance category [7].

2. ORIGINS AND MOTIVATION

The Trivandrum city portal grew out of a strong tradition of citizen-police community interaction already existing in Trivandrum and other towns of Kerala, most of which have a strong network of residents associations. These associations hold monthly meetings with the police and present grievances about local crime, traffic, public nuisances, and other issues. The Trivandrum city CATCH programme (Citizens Action against Thieves, Cheats and Hooligans), was launched jointly at the initiative of the Trivandrum city police commissioner and the residents associations. Inputs from citizens and residents associations and their participation in this program helped frame the requirements for the police portal project. The main issues that the portal hoped to address were:

Automating office procedures and records.

Bureaucracy and paper work occupy a significant part of the time of the police officers and police stations in the city. A system was needed to handle workflows and communication between the police stations and convert into digital form a large number of police records.

Building a web interface for citizen service delivery.

Many of the activities of the city's police department revolve around addressing citizen complaints, processing applications of various kinds (foreign registration, etc.) A web front-end would make the service delivery more efficient and transparent.

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Building an interface with the community.

The police need the cooperation of citizens as much as the city needs the police. Citizens help by calling the police stations to report accidents, crimes, anti-social activities. Several of these activities could now have a web presence and strengthen the ties of the police with the resident communities and also provide a platform for discussions amongst residents.

3. CAPABILITIES

The Trivandrum Police portal is a web-enabled interface to a complex, distributed and collaborative back office workflow process of the city's police department. The system is designed to have several interfaces and functional components: an information interface for common queries, a citizen grievance interface, interface for managing citizen discussion groups and interaction, back office interface for internal workflow management system, and a document repository and knowledge management component. The various interfaces and their functions are described in detail below. The details are important because they provide an estimate of the versatility and complexity of the system:

3.1 Information interface

Facility for general information: The interface for general information is used by the police for their own tasks, like making announcements of events, notifying meeting schedules, publishing guidelines for traffic management under different conditions. The other side of the interface includes a facility for citizens to interact with the police. Here are the features in detail:

1. **Message Board:** A message board where the commissioner posts his views for the public to read.

2. **Today in City:** Used by citizens to learn about major events happening in the city on a particular day.

3. **Online Services:** With this feature the citizen gets useful services like online status tracking of his/her passport and of any general request made to the Trivandrum city police.

4. **Citizens Page:** A place where any citizen can register himself as a blood/eye donor and also get information about other donors in case of emergencies.

5. **News Bulletin:** The public uses this to get the news, press releases and events that may be related to the police department or information of general nature. This interface also features a photo gallery where the police department can showcase the photographs of any major events.

6. **Helping the Police:** By using this facility a citizen can view and post information on missing persons, or unclaimed vehicles or property.

Other services include a public information service, a section for citizen queries, a section on public resources (like hospitals, police stations, emergency numbers), traffic announcements, and foreigners page. Lack of space limits us from further description of these capabilities.

Figure 1: Trivandrum City Police Portal's desktop for internal workflow management

3.2 Citizen grievance interface

Citizens grievances area: This is used by citizens to enter complaints and suggestions online through a web-enabled interface. The grievances are routed to the concerned police official automatically for appropriate action. These include:

1. **Online complaint registration:** Citizens can register complaints online addressed to any officer in the Trivandrum city police.

2. **Suggestion box:** The general public can send their suggestions with regard to traffic, services of the police department and related issues. Advanced workflow with scheduling allows for vectoring the complaints to different officials depending on the type of the query. The recipient official is also equipped with support to redirect and send copies of the received complaints to other officers within the department.

3.3 Citizen interaction area

Citizens free message board area: This feature allows for open and asynchronous interaction among citizens and the police to discuss any specific issue or topics. It is heavily used by the citizens and helps the Trivandrum city police to participate in those discussions.

3.4 Back office interface

Web-enabled back office support for logging: To ensure timely response to queries and complaints, there are suitable alert mechanisms for logging requests and reminding the official concerned with alerts to superiors in case any complaint has not been attended to in reasonable time.

1. **Alert mechanism and personal reminder:** An alert is generated by the system if a police official fails to respond to a complaint, request, or information he has received. An officer can also set a reminder.

2. **Internal correspondence facility:** This is a feature that facilitates faster interdepartmental messaging. This feature can be used to send memos, letters, or messages to any number of officials at the click of a button. With added features of reminders and alerts this module can track whether the recipient has read the message or not. This mechanism is useful for sending instructions to any number of police stations instantly. The automation of this feature was appreciated by the police because it saved significantly the cost of transport and stationery charges associated with sending the same instructions through the earlier manual mechanism.

3. **Extension of the Crime Stopper system:** The features here include handling of online complaints received through the portal, with adequate facilities for senior police officials to delegate tasks to lower levels and follow up with the developments.

4. **Statistics:** This features gives a pictorial view of the complaint handling in the various police stations. This helps the top officials in the department in decision-making and also in performance analysis of the various stations and officials.

3.5 Knowledge management and training

1. **Document repositories, e-learning and knowledge capturing:** The portal supports digital online library services with controlled access. It is also used by the police in conducting their in-house training. Scenario and incident based knowledge capture and reuse facility helps planning, analysing and guiding future special arrangements and events and logistic planning under different conditions.

2. **Personal online e-office:** Every official with permission to use the internal services of the portal is supported to have several personal utilities and productivity tools like email client, alert window, address directory, and online links to news.

3. **Groupware and collaboration tools:** This supports permitted group sharing and exchange of documents, group message boards, and search within a group's document space. Various groups based on hierarchy levels can be formed and they in turn can share documents and discuss various issues internally away from any interference from outside or unauthorized party.

4. **Access to residents association databases:** The system has a login facility for each residents association of the city. These have been grouped in such a manner that all office bearers of a residents association of an area can communicate with the police officers of that area.

5. **Internet usage orientation and IT training facility:** IIITM-K has conducted several training sessions for various levels of police officials. The training sessions included basics of internet, office tools and hands on training on the police portal. Furthermore, IIITM-K has helped the police department in setting up of a training server at the commissioner's office so that more officials can be trained.

4. IMPLEMENTATION ARCHITECTURE

The portal implementation is based on a generic architecture of the Trans-E platform designed and built by TeN, a startup company spawned at IIITM-K. Trans-E is a J2EE compliant architecture based on the Model-View-Controller design (Java Server Pages with a backend MySql Database). The system runs on a server hosted at Kerala Government's data centre, and runs over DOCSIS internet available from Asianet Dataline, a local internet company.

5. IMPACT AND LESSONS

A formal impact study is yet to be undertaken. However, a measure of the success of the portal can be gauged by some empirical observations. There have been hundreds of active threads on the public discussion boards of the portal. Although from the public point of view, more citizen services should be added (specially GIS based information), the portal has been acknowledged both by the media and the citizens as an important step towards bringing the citizens and the police of Trivandrum closer. For example, each police station circle now holds its own citizen meetings, leading to further decentralization and locality-based interaction. The portal is then used to share information across the circles.

Some lessons that we hope are useful in the wider context of e-governance projects are listed below:

Involve community in requirements gathering.

The success of the police portal is in part because of its focus on directly involving the community in finding out the requirements for building the right kind of e-governance system. This aspect of e-governance has often received less attention in the past, but there is an increasing awareness of the importance of involving the community to help the police help citizens [6].

Use local talent to build low-cost solutions.

The project was completed with a relatively modest budget of Rupees 30 Lakhs (about USD 60,000), which included server hardware, printers, a laptop, software development and maintenance, and training. The software was developed by a startup incubated at IIITM-K, and customized and further feature-enhanced through various student projects and Masters theses research work. This encourages us to believe that it is possible to build workable, low-cost solutions for e-governance and communities using programming talent available from local colleges instead of relying on large, expensive vendors and consultants.

Provide complete solutions.

The police department insisted on a complete solution in which IIITM-K was responsible for the supply of hardware, network connectivity, software maintenance and training in addition to the development of the software. These additional responsibilities consumed a majority of the time and effort once the development was completed. The lesson here is that if educational institutes take up implementation projects, they must factor in the effort to provide complete solutions, not just the software implementation.

6. RELATED INITIATIVES

The Trivandrum city police portal was one of the early initiatives in India to use ICT to foster community inter-

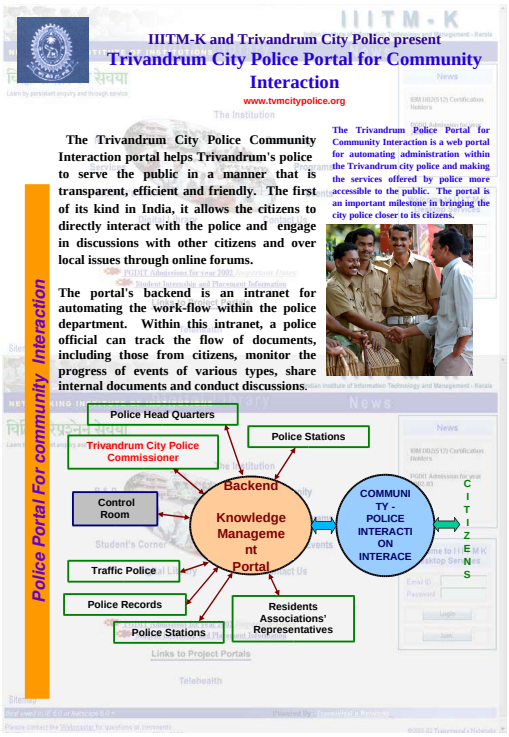

Figure 2: Brochure with block diagram of information system architecture

action with the police. Similar initiatives have since been launched in other states of India like Andhra Pradesh (*e-cops*), Rajasthan and Delhi. Significantly, none of these support the community participation model that the Trivandrum portal does. Police departments of several other major metropolises of India also now have a web presence, as do those of many other countries across the world. A few such efforts, by the Polish and the Italian police have been documented for case study [4, 8].

The police portal is one of the several portals developed at IIITM-K to usher in issue-oriented, community-centred e-governance. Other projects in this vein are Education Grid, a project to connected colleges and universities in Kerala to share academic and computing resources across a state-wide area network [1], and KISSAN, a community portal linking farmers, agriculture officers, agriculture universities and the Government through a multi-modal approach [2].

7. CONCLUSIONS AND FUTURE WORK

The Trivandrum police portal demonstrates the success of e-governance approaches that focus on citizen communities working directly with departments of the government. Efforts like the police portal help the government in realizing the important objectives of e-governance – accessibility, transparency and accountability in the delivery of public services – through active citizen participation. There is much in the police portal design and implementation that can be generalized for use in administrative workflows in governance and citizen interaction. Negotiations are under way to scale the police portal to the entire state of Kerala. There is also a plan to develop a suite of e-governance portals for the Government of Kerala under its Modernising Government Programme.

We consider our current implementation as a prototype, albeit one whose success has surpassed our expectations. But several issues need to be addressed. The most serious limitation of the portal is its inability to handle Malayalam, the vernacular of Kerala. Since a majority of the police and the citizens have difficulty with English, this limits the widespread use of the system in the long run. The development of a suite of e-governance portals will also require a more abstract design and a re-engineering of the implementation. A redesign using advanced and current Web 2.0 interfaces and enterprise technologies is needed. An open source implementation will help easier replication across the country. Despite its success, however, the project's future viability depends on the commitment of the Government of Kerala in funding it in a sustainable manner.

8. ACKNOWLEDGEMENTS

The portal was conceived by the second author along with the then city police commissioner Rajan Singh in 2002. It was built on the Trans-E server designed by TeN, a startup incubated at IIITM-K. InApp Solutions partly developed the web user interfaces. Several IIITM-K engineers and students worked on the project over the two years of its implementation. Figi Periera led the software development, T D Saji the liaising with the police department's Satheesh Chand. The implementation effort was supervised by the first author. The implementation is currently being maintained by Mohd. Merajuddin.

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