ENABLING E-GOVERNANCE THROUGH CITIZEN RELATIONSHIP MANAGEMENT-CONCEPT, MODEL AND APPLICATIONS

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With the advent of the Internet and telecommunication technologies, business organizations have jumped into the e-business bandwagon that has led to better customer service through implementing Customer Relationship Management tools. The same trend has now caught on with the governments through e-Government initiatives. This paper presents a conceptual model of Citizen Relationship Management (CzRM). The proposed model of CzRM combines a set of functionalities and tools that enable government to become citizen centric. It requires the creation of integrated Citizen Information System (CIS) to provide personalized service and setting up of Citizen Interface Centers (CIC) which can provide many services from a single point of contact. The model is also being related with some of the existing e-Governance applications in India. A number of research ideas in the area of CzRM have also been proposed in the paper.

INTRODUCTION

A citizen can be defined as a consumer of public goods and services (Nowlan, 2001). The broad exposure the public has had to private sector products and services in the new economy has caused its expectations of government products and services to rise. With new found ability to do business online (as opposed to in line i.e. waiting in queues), the public has come to expect a much greater level of convenience, availability, and reliability of government products and services. When people see efficient systems in the business world, they tend to expect the same from the government departments also. Governments around the world are looking at how to provide e-access to their "citizens" across a wide range of services. They have come to recognize the need to provide better, more efficient public services in a more timely and cost-effective way . They recognize the need to improve their relationship with the citizens, and to put the citizens' needs at the center of all government thinking, providing one-to-one services for citizens; services that cut across departmental

hierarchies and which the citizen can access 24 hours a day, seven days a week through a single point of contact (Munson et al. 2001).

e-Government refers to intensive utilization of information and communication technologies (ICT) for the purpose of forming public intent and rendering services at the political and the administrative level. The Gartner report, 2000 defines e-Government as, "The continuous optimization of service delivery, constituency participation, and governance by transforming internal and external relationships through technology, the internet, and new media."

e-Government is expected to change the way in which national and local governments deal with citizens and organizations. There is a healthy competition among governments to get e-enabled. The following is the vision developed by the Canadian Government: "By the year 2004, our goal is to be known around the world as the government most connected to its citizens, with Canadians able to access all Government information and services on-line at the time and place of their choosing" (Atlantic Canada Opportunities Agency, 2004). Similarly, by 2005 the UK government expects all public sector organizations to provide their services electronically (Wray, 2001). According to National e-Governance initiative 2002, India plans to provide IT for all by 2008, and policies have been provided for setting the base for a rapid spread of IT awareness among the citizens, propagation of IT literacy, networked government, IT-led economic development, rural penetration of IT applications, training citizens in the use of day-to-day IT services like tele-banking, tele-medicine, tele-education, tele-documents transfer, tele-library, tele-info-centres and electronic commerce. It is expected that in a few years time, the governments around the world will become the fore runners in using information technology and the Internet.

While electronic information today is abundant on the Web, electronic services in a city/local government perspective have not yet taken off in many cases. The local government environment is more complicated, as it involves a wider variety of services, which are sometimes complex. However the citizens expect the governments to provide: (a) more efficient administration, (b) better services; access, speed, completeness and (c) increased participation in democratic processes. The citizen is no longer interested as to which public official is responsible for which public service.

People feel the need for an easily accessible public structure that responds to their interests. Public structures through collaboration between different levels of government and private sectors are actually developing the IT network to provide assistance and coordination which is necessary to enable the individual and the entire community to access the information and services they require. There has been a paradigm shift towards approaching e-government development model. Gartner's model of e-government identifies four phases- presence, interaction, transaction, and transformation (Gartner, 2001). European Commission (Europa, 2001) has proposed a four-stage methodology for assessing the level of availability and sophistication of e-government services, which included information, interaction, two-way interaction and transaction. While e-Government is concerned with the use of IT for efficient functioning of government departments, attempts are on to morph the customer relationship management concepts for creating effective service for the citizens of a country within the traditional philosophy and terminology of government. This has given birth to a new field of knowledge called Citizen Relationship Management.

The objectives of the paper are:
(i)   To revisit the emerging concept of CzRM
(ii) To propose a CzRM model to enable effective e-governance implementation and
(iii) To relate and validate the proposed model through some of the leading e-governance applications in India.

CUSTOMER RELATIONSHIP MANAGEMENT

In order to introduce the concept and applications of CzRM, it is necessary to understand the fundamental concept of Customer Relationship Management (CRM). The idea behind customer relationship management is not new. CRM is an enterprise approach to understanding and influencing customer behavior through meaningful communications in order to improve customer acquisition, customer loyalty, and customer profitability (Evans, 1994). Most definitions talk about attracting, servicing and retaining customer. CRM initiatives start with a business philosophy that aligns company activities around customer needs. Today it is widely acknowledged that the manner in which you treat your customers goes a long way in determining

your future profitability, and companies are making bigger and bigger investments to do just that. Customers are savvier about the service they should be getting and are voting with their wallets based on the experience they receive. CRM requires a customer-centric business vision and culture to support effective marketing, sales, and service processes (Swift, 2001). Hence, CRM is a business strategy to select and manage the most valuable customer relationships.

There are four applications that support customer relationship lifecycle (Galbreath,1999). They are: (I) *Marketing:* Targeting prospects and acquiring new customers through data mining, campaign management, and lead distribution. The emphasis here is on long-term relationship value, not short- term business benefits. (II) *Sales:* Closing business with effective selling processes using proposal generators, configurators, knowledge management tools, contact managers, and forecasting aids. (III) *e-Commerce:* In the Internet age, selling processes should transfer seamlessly into purchasing transactions, done quickly, conveniently, and at the lowest cost. All customers should see one face with the company, no matter which touch point they choose to use. (IV) *Service:* Handling post-sales service and support issues with call center applications or Web-based customer self-service options.

CRM applications collect data from variety of sources on aspects such as responses to campaigns, shipping and fulfillment dates, sales and purchase data, accounting information, web registration data, service and support records, demographic data and web sales data. The data is analyzed using advanced models and decision makers are provided with decision support for evolving strategies. Some of the key benefits that CRM solutions' offer are: provide better customer service, make call centers more efficient, cross sell products more effectively, help sales staff close deals faster and simplify marketing and sales processes. CRM applications can enable effective customer relationship management, provided an enterprise has the right leadership, strategy, and culture to adapt. Successful CRM initiatives start with a business philosophy that aligns company activities around customer needs and CRM technology is used as a critical enabling tool of the processes required to turn strategy into business results.

THE EMERGING CONCEPT OF CzRM

e-Governance in many countries today is aimed at achieving efficiency in creating and delivering services to citizens. This necessarily aims at reduction in cost of delivery, improving ease of delivery and many other internal benefits, ultimately with less commitment or obligation to citizen. Although applications are more inward looking in terms of benefits to government and do not consider the service expectations of citizens. In this phase, typically the government websites is used to provide basic information only. Increasing technological sophistication, coupled with demand for quality services has forced the governments to get more citizen–centric. It is at this stage the governments typically use multi channels to deliver their services and develop networking capabilities with different departments to provide seamless service to their citizens. In the emerging e-Governance scenario, citizens should be treated as customers of business organizations, where serving citizens is the sole purpose of governments. Citizen Relationship Management (CzRM) is a division of customer relationship management that focuses specifically on how governmental bodies relate to their constituents (Xavier, 2002; Jha & Bokad, 2003). Governmental agencies, in their arrangement find that citizens expect the same level of service given at the civilian business level**.**

Governments' view of the citizen has historically developed in a fragmented manner and information concerning any individual is scattered across different departmental databases. So employees can't access the information in a timely and usable form. In these days of one-stop shopping and rising service expectations, many governments are trying to improve their relationship with citizens by developing direct or one-to-one contacts with them. Providing a single source to answer all queries in one visit or one call, requires new computer applications, and integration between existing applications and legacy systems. Through CzRM, public administrations have a golden opportunity to access and manipulate data to gain an accurate picture of citizen behaviour and requirements. CzRM is not about getting more information out of people, it is about making better use of the considerable amounts of information that government already collects (Smith, 2003). It is a method for public authorities to use to re-orient their service operations around citizens rather than around self-serving administrative processes. To summarize, most governments start off with

automation for cost minimization, effective governance and efficient administration. In this phase, typically the government website is used to provide basic information only. Increasing technology sophistication, coupled with demand for quality services will force the governments to get more customer-centric as shown in figure - 1. It is at this stage, that the governments will typically use multi channels to deliver their services and develop networking capabilities with different departments to provide seamless service to their citizens.
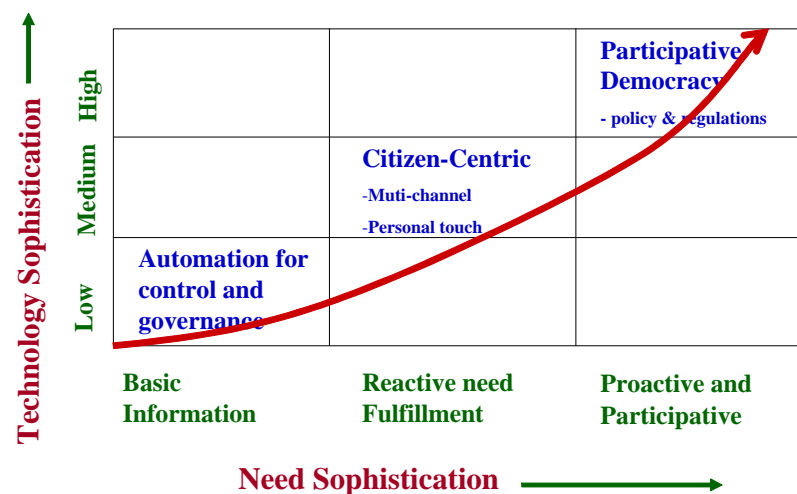

Figure 1: Evolution of Government Services

CzRM is about becoming "citizen-centric" (Nowlan, 2001; Hunter & Shine, 2001). It is a strategic opportunity to harness processes and technology to:

● Provide service excellence by increasing the efficiency of service and information delivery to citizens
● provide (where legally possible) a government-wide view of each citizen
● build and strengthen the links and cooperation between government, its citizens and stakeholders
● realize operational and financial efficiencies
● assist in community building and outreach
● build an environment which encourages innovation

Contrary to popular belief, it is not just a technological solution to citizen service activities. The core of the new e-Government paradigm is the transformation of customer relationships and the processes and mediums that support them. An effective CzRM strategy raises citizens above traditional departmental and bureaucratic lines and makes them the center of service activities. Through CzRM, public administrations have a golden opportunity to access and manipulate data to gain an accurate picture of citizen behaviour and requirements. Hence CzRM is a cross-functional, multi-application undertaking based on integration of specific public sector components such as electronic processing of records with full-text search, document imaging and archive interfaces, and workflow. Solutions can analyze and identify patterns in vast amounts of stored information, and help predict future needs and provide direct, one-to-one public services. Rather than employing compartmentalized, program-driven budgeting and customer service methods, a successful CzRM strategy transforms disparate government budgets and processes into an integrated, citizen-centric service culture—one that aims to *maximize lifetime relationship value.*

A CONCEPTUAL MODEL FOR CzRM

A conceptual model, as shown in figure -2, is proposed for CzRM as an enabler to proactive and participative approach to deliver services to citizens effectively. The model consists of four fundamental entities of e-Government systems, with which CzRM has to be integrated.

The first entity is the 'government', which may include central, state and district administrations. The existing legal and regulatory framework together with objectives and role of governments are part of this entity. Accordingly reliable data and document management systems support effective functioning of the government. An integral part of this entity is the profile of classes of citizens for whom the services are planned and delivered. While doing so, it is necessary that a database of all citizens is maintained with updated information. The second entity is the 'service delivering agencies'. This includes both government and private providers of variety of services such as transport, health, education, grants and benefits, etc. These service providers have to interact for accessing information relating to different classes of citizens. For example, an organization which provides healthcare services interacts with government in many ways, which include new service schemes and subsidies, regulation on import of medicine

and equipment. These healthcare service providers today interact on-line with insurance service providers who are again regulated by governmental systems. The third entity, 'banks and payment gateways' relate to the monetary systems involving treasuries, banks and other apex bodies, which are regulating the system. Transactions involving exchange of money between citizen and service providers need to be linked with monetary systems, which include banks and payment gateways. Today rail travel reservation, payments of bills, etc involving financial transactions, is carried out through web based applications. If capabilities are built into Information Kiosks for transacting and carrying financial information, higher level of e-Governance is next to reality. However, integrating various services delivery components through a single interface point is the challenge for the service providers. The fourth entity of basic e-Government system relates to the 'technology providers' who are carrying the services and information across the system. Such technology providers may range from a large Internet backbone providers to information kiosks that are located in remote locations. Increasing private participation has brought in advanced, user-friendly and affordable options both to the primary service providers and citizens. Payment instructions by citizen through any type of interface are being carried out on-line by the banks and payment gateways. Similarly, financial transactions between services providers and government are also being implemented.

While effort of various governments are on to establish interaction among these entities under the e-Governance initiatives, traditional thinking of reactive service to citizens and underlying functional (departmental) orientation have pursuaded them to achieve digital democracy in which governments will be for the people and by the people. This further limits the scope for exploiting ICT for advancements in this area. e-Governance efforts without end-to-end process reengineering with citizen centric strategies lead to automating inefficiencies that exist in governmental systems. CzRM is a vital feature to be integrated with a basic e-Government system that will enable migratation into the next stage of evolution. CzRM includes four main functionalities, namely **Identify, Design, Serve and Protect,** which are very similar to CRM functionalities namely Marketing, Sales, Delivery and Service. The importance of these four functionalities under CzRM is described in the following sections.

Identify

The first functionality of CzRM is *Identify,* which involves identification of citizens with various service requirements. This is similar to establishing product-market relationship in businesses. This essentially means that each citizen should uniquely be identified with his / her basic details. This information is often locked away in disparate, inaccessible systems across different departments. Each department has its own services to offer and accordingly data is collected for the specified purpose only -just one citizen could account for terabytes of data.

To perform a simple task, a government employee may need to access data from a citizen's file, manipulate the data on an in-house application, transmit it via a third party's private network and execute a transaction. Open system technologies make it easier to manage and access information. If the government can put together all the information about a citizen from different sources, they can develop a 360⁰ view of each citizen. Any system developed either for first level e-Governance or advanced CzRM requires this fundamental approach to database building, which is called Citizen Information System (CIS) (Figure 2).
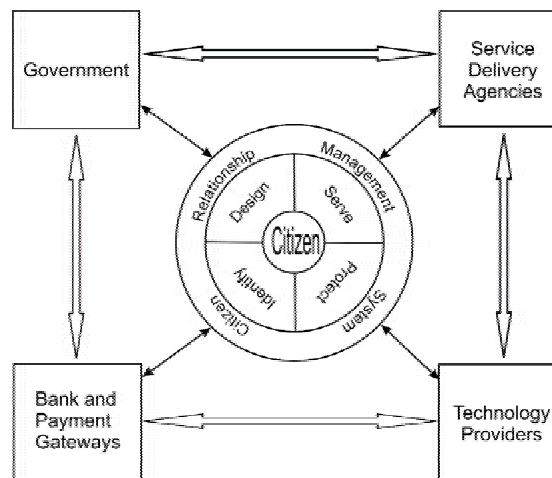

Figure 2: Citizen Information System

Once a relevant social security number or an identity code of an individual is punched into the computer, a government official should be able to get all relevant information about an individual including age, education,

occupation, property ownership, income, foreign travel, vehicle ownership, etc. This will help governments to plug revenue leakages, control crime rates and offer customized services to individuals. Governments can also commercially exploit the CIS by sharing them with private business houses. Further this will enable the governments to turn all raw data into knowledge and it is possible to provide intelligent service level analysis and targeted citizen servicing. Such an outcome of citizen profiles will provide a basis for government policies and long term goals for the services to be delivered during a planning period. This approach to service delivery will enhance the scope for proper delivery and improvements over successive implementations.

An application: *Removal of poverty always finds a place in government policies. Implementation of such policies involves complexity in designing and delivering services to the citizens, who mainly live in villages. Programmes such as education, awareness of opportunities, creating scope for earning, networking with neighboring markets and enabling commerce of products and services are specified by the government. The effective implementation of policies is dependent upon locating the target citizen groups. It is equally important that only deserving people are identified for benefits to be provided. Hence, identification of target citizen groups is the fundamental to the entire process of e-Governance implementation.*

Design

This functionality of CzRM relates to the service delivery agencies which may be owned by the government or by private or even by government-private partnerships. These agencies are responsible for designing appropriate schemes and approaches for different classes of citizens. This entity essentially includes data about the services/ schemes and configures services for distinct classes of citizens. These agencies are responsible for designing of mechanisms to ensure that only appropriate classes of citizens get serviced. This entire logical system should seamlessly be integrated with physical infrastructure and delivery mechanisms.

An application: *Election Commission (EC), is the designated body of the government to enable election of peoples' representatives. Here is a service provider who not only performs the fundamental task of conducting elections*

but could also lure the citizen to exercise his franchise. There is a decreasing trend in citizens participating in the election process in India. Apart from other reasons, the difficulties faced by them are very much a deterrent for excising their mandate. In an improved service to the citizen the election commission may use Information Kiosks (or any other web based citizen interface systems) through which a citizen can vote. The primary aspect of person identification may be ensured through advanced biometric controls besides citizenship cards. This arrangement will enable most of the people to participate in the election processes. Eventually a citizen may use Internet for this purpose. In the days to come on- line voting will be a reality and much of these applications will also offer large savings in government expenditure, which may be diverted for better services to the citizen.

Serve

This functionality of CzRM is the real enabler of e-Governance, which is supported by spectrum of ICT. Service deliverers use a combination of on-line and off-line technologies to create easy and versatile interface with citizens. A number of countries are attempting to set up citizen interface centers that will enable the general public to access the government services. Some of the interfaces include: telephone, email, Interactive Voice Response (IVR) and the World Wide Web. An important feature that can be added to this process is 'self service', where the citizen can configure the service initially while registering and get support through out his lifetime. Self service by the citizens help the governments achieves the dual purpose of reducing cost as well as improving service levels. Information Kiosks are located in remote locations that are connected via telephone lines or wireless medium. Such Kiosks are very popular interfaces in e-Governance systems. These technologies and tools together are called Citizen Interface Centers (CIC). Establishment of CICs, in terms of its locations and types of service that are delivered through, is determined by the overall architecture. However, these technologies are now managed by small entrepreneurs, who look at this as a business venture.

An application: *Constructing and owning a house/flat is a very common expectation of every citizen. Government is also promoting this cause with subsidies and schemes. A citizen has to approach various agencies for land registration, municipal approval, and environmental approval initially for*

a proposed project. During the course of construction, agencies such as electricity, water supply, sewage link, etc have to be approached for approval, which also involves payment of charges. A citizen today has to approach all these agencies and face hardships. A CzRM based solution may be evolved with only two processes, which cut across the traditional departments of government. The first process will take necessary information through appropriate citizen interface and process end – to – end requirements and issue initial approval. The second process will address all the issues relating to handling complaints/service requests immediately after construction and thereafter. A unified call centre will attend such requests and citizens will be enabled to transact with mutually agreed service level agreements.

Protect

This functionality of CzRM enables the citizens to be in touch with the service providers once they sign in with a service provider. When a citizen is eligible to get a service from a provider, he/she should be protected against all aspects that relate to non-delivery or any other issues relating to the delivery. In case of some essential services such as security, water supply, banking, healthcare, transportation, it is imperative that 24/7 access for information and support is provided. To provide citizens with a comprehensive range of problem-focused information and services at their chosen point of access, changes need to be made to the structure of the administration. Citizen call centers with one telephone number service for accessing government services and addressing complaints should be set up. A citizen service representative in a call center, equipped with a web-enabled system, should field complaints, with a minimum of call transfers, from the citizen. The web should also be used directly in combination with internal citizen relationship management software systems, that links all elements of the government, in providing coherent and timely responses to concerns of citizens. This functionality is also dependent upon the technology providers and the primary service providers. In the digital democracy, where citizens are empowered to participate in the design and delivery of services, protecting their interest should be of major concern.

An application: Healthcare is one of the important services that is offered to citizens. Healthcare services are provided through various government and private agencies. Once a class of citizens is identified with a service provider, he/she should always be ensured proper delivery and support. As a citizen, one should be able to seek on-line medical advice and attention. Such a request may be attended by a 24/7 call centre, which has access to both data about individuals, medical history and access to other related infrastructure. With this, a citizen is protected against non-delivery of services, through deployment of technologies and he is always assured of service wherever he lives.

APPLICATIONS OF CzRM MODEL

Three e-Governance related applications have been successfully implementated in rural India. The three applications, namely, Gyandoot, TARAhaat and SARI are fairly spread across the country**.**

'Gyandoot (online) is recognized as a breakthrough in e-governance, demonstrating a paradigm shift which gives marginalized tribal citizens their first ever chance to access knowledge, with minimum investment. In awarding the Gyandoot project, The Stockholm Challenge IT Award 2000 in the Public Service and Democracy category, the jury described it as "a unique government-to-citizen Intranet project". The project was also awarded the CSI-TCS National Award for Best IT Usage for the year 2000. The Project identifies the concerns of the Villagers in the poverty-stricken, tribal dominated rural area of Madhya Pradesh.

TARAhaat (online) has been created by the Development Alternatives Group, the internationally known voluntary organizations concerned with development, environment, technology and governance. TARAhaat.com is the road that connects the Indian villager to the rest of the world. It is designed to be so simple that even a small child or an illiterate person can quickly learn to use it and get all the benefits it offers. It offers various services that each one of us needs for improving our life like news, health information, education, entertainment, government welfare schemes, bus and train information, commerce and governance.

SARI (Sustainable Access in Rural India, Online) seeks to show that viable markets exist for information and communication services in rural poor areas by inventing and deploying innovative technologies,

assessments, and business models. The ultimate goal is to link these activities to sustainable human development objectives through government –private partnership. It relates to the CzRM model in three functionalities. These three applications are presented in Table-1.

ISSUES IN IMPLEMENTING CzRM

CzRM in government is a largely uncharted territory. The primary reason for this slow adoption is perhaps due to the difficulty of making a business case for investment in a practice that is driven in the private sector by profit and customer retention. In addition, there are issues of culture, technology gaps and perhaps even a suspicion of the ultimate goals of CzRM. CzRM as a practical solution is nowhere near as warmly embraced in government as it is in the commercial world. These barriers include the challenge of making a business case for investment, securing leadership support, and overcoming the barriers inherent in traditional agency structures where information resides in data silos.

Though the technology required for CzRM is available with several vendors, implementation is fraught with several problems such as the change in the mind-set concerning the use of information about citizens. It is not just a technology initiative; rather a people oriented effort. Unless the government employees willingly adopt these new methods of working, it is not going to be easy to implement the CzRM programs. What is needed is a change in the mindset. Instead of looking at the traditional rule book, the government employees should learn to look at issues from the citizen's perspective.

Table 1: CzRM in select E-Governance Applications

Functionality / Application	IDENTIFY	DESIGN	SERVE	PROTECT
Gyandoot	Offering rural development schemes to poor/tribal village citizens	Market information of agricultural products Land Records – Encumbrance certificate On-line application – Caste Certificate On-line Public grievance redress information on government schemes	Installation of a low cost rural Intranet covering 30 village information kiosks in five blocks of the district which are connected to appropriate government departments Connectivity through local exchanges on optical fibre or UHF links Local rural youth act as entrepreneurs and run these kiosks	Off-line service on complaints and suggestions
TARAhaat	Information, products, and services to the underserved rural citizen	Telemedicine Commodity Trade Export marketing Agro-product procurement Market Information Information on government schemes Weather Employment Horoscope Land Records	Central core is built around B2C links on internet links TARAbazaar.com provides urban and overseas consumers with direct access to village craftspeople	Off-line service on complaints and suggestions
SARI	To foster economic development and improve health and learning to the rural citizens	Market information Government forms On-line applications IT training Telemedicine Farming advisory services	Kiosk are set up in each village with connections to schools, colleges, primary health centers Voice calls will be handed over at the local exchange Connections are provided along with handsets and PCs	Off-line service on complaints and suggestions

Source: Gyandoot: http://www1.worldbank.org/publicsector/egov/gyandootcs.htm, TARAhaat: TARAhaat.com, Sari: http://www.tenet.res.in/rural/sari.html.

The two other major areas that the governments will need to address are the Digital Divide and Privacy. Digital Divide refers to differences due to geography, race, economic status, gender, and physical ability to access information through the internet, and other information technologies and services and in the skills, knowledge, and abilities to use information, the internet and other technologies. Hence digital divide is a complex, multifaceted set of issues that encompass information and technology issues as well as social and economic issues. Consequently the world stands divided into people who do and people who don't have access to - and the capability to use - modern information technology, such as the telephone, television, or the Internet. Governments should be sensitive to those who do not have the access to and the capability to use IT. Currently many, countries are enacting privacy acts covering use of personal information in private sector and by web site operators.

SCOPE FOR RESEARCH

As CzRM is a relatively new area, it is replete with several research opportunities. The potential areas being Cost Benefit Analysis of investment in CzRM, development of citizen satisfaction index for city/state/national government services. Research may be directed towards bench mark studies and best survey practices. An in depth study of Government's attitude towards CzRM is also a good research proposition. Preparing a CzRM plan for a town / district/ state/ country, designing a citizen centric website, processing data mining applications in CzRM will be viable topics for research in technical area. Studies of the impact of digital divide and privacy issues in CzRM will improve the successful implementation and evaluation of efforts in this area.

CONCLUSION

CzRM is a cross-functional, multi-application undertaking. Integrated solutions have been developed with specific public sector components such as electronic processing of records with full-text search, document imaging and archive interfaces, and workflow. Solutions can analyze and identify patterns in vast amounts of stored information, and help predict future needs and provide direct, one-to-one public services. With the rising

expectations of the citizens day by day, it is going to be impossible for governments to meet them by increasing the size of their work force. They should attempt a three pronged strategy covering (a) deployment of modern technology (b) introduction of efficient systems and procedures and (c) training of employees to change their mindset. All government departments should adapt a citizen-centric approach to deliver efficient service to the citizens. Those governments that are proactive in implementing Citizen Relationship Management tools by creating integrated Citizen Interface Centre (CIS) and Citizen Information System (CIC) to provide personalized service to individual citizens will be amply rewarded in the form of reduced costs, improved efficiency and eventually attract more votes.

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