COMPUTERISATION OF LAND RECORDS IN PAKISTAN
A Comparative Analysis of Two Projects from a Human Security Perspective

by

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executive summary

One of the important dimensions of human security is related to "asset security" backed by the legal, social and institutional support. In Pakistan, one of the most important assets in both rural and urban settings is land. The prevalent system of land record management is an archaic paper based system whose complexity and the control of state functionaries over its access has given rise to rampant rent seeking and deprivation of the weaker sections of the society.

A few efforts have been made in Pakistan to computerise the land record with a view to make it simplified, keep it updated and to inculcate an element of transparency in land market to foster a conducive environment for safer and more efficient investment in land. This paper seeks to compare the approach adopted by two projects involved in computerisation of land records. The first project, named as Participatory Information System (PIS) was initiated in the Balochistan province and aimed at demonstrating a technologically superior option for land record management with the hope that it will be adopted by the relevant stakeholders. The PIS worked through specially hired staff from the market with a casual interaction with the revenue officials who are managing the paper-based land records at the moment. The second project (Land Record Management Information System Project- LRMISP) in Punjab province adopted a gradual transformation approach wherein the old paper-based system would be replaced with a computerised system with online access to the system outputs. The LRMISP has also initiated a "Business Process Re-engineering" exercise to redesign the institutional infrastructure to minimize the internal resistance as well as to capacitate the staff and procedures to operate the computerised system to its full potential.

It is argued that the second project has a better potential for enhancing the "asset security" of land owners because it recognises the socio-political dynamics of land record management, takes cognisance of various beneficiaries of the opacity prevailing this record and proposes ways to redress them. The techno-centricity and cautious approach towards issues like corruption and public sector inefficiency limited the scope of the impact for PIS.

It is surmised that the lack of a holistic approach towards the introduction of ICT will severely limit its chances of success. A careful diagnosis of social, technical, economic and political facets of a problem will help place the ICT related resources to their most strategic use.

1. Background

Pakistan inherited the whole of public sector management infrastructure from the British colonial role and adopted it with very little modification at the time of its independence, in 1947. Understandably, the colonial system was mainly governed by a "control" imperative rather than an "empowerment" imperative. There was quite a stringent upwards accountability system, where a civil servant would be accountable to his/her superior officer, but there was no system for downwards accountability towards the citizens[2].

Despite various experiments with the political systems of the country, including four rounds of military dictatorship, intermittent glimpses of elected governments and quasi-elected systems with elected representatives working under military rulers, the bureaucratic structures remained centralised and unaccountable to the citizens in a meaningful manner[3]. The failure of the country in democratizing the society is largely a result of –as well as a reason for- increasing perils to human security, in terms of security for the person, security of assets, security of cultural heritage etc., as manifested in a number of events of political violence during the country's history[4].

The public access to information has been established globally as a strong determinant of people's empowerment, leading to better chances for human security to prevail[5]. One of the key factors in an overall human security framework is the asset security, backed by legal instruments to ensure it. The legal instruments however can only be invoked effectively if the asset holders have complete information about their assets, the nature of the tenure that they have, an understanding and the means to exercise the legal rights to asset security, and the socio-legal structures to enable them to defend their entitlements[6]. The state structures in Pakistan, as mentioned above have not been able to play a facilitatory role to enable the citizens to access information which is theoretically in public domain, but is practically controlled by various actors in the power structure to pursue their personal or institutional vested interests.

The Government of Pakistan embarked upon a number of initiatives around the turn of the century to introduce computerisation in the official business. The most significant initiative in this regard was the establishment of National Database and Registration Authority (NADRA)[7] that has been mandated to gather and

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[2] Kibria, G (1997)
[3] Zaidi, S.A. (2005)
[4] Hussain, S.I (2002)
[5] Sen, A (1997)
[6] Lukes, S (1994)
[7] www.nadra.gov.pk

computerise all the demographic data about citizens and to provide a number of services to the people, using the ICT based solutions. The NADRA has been successful in issuing more than 50 million Computerised National Identity Cards to Pakistani adults. It is also operating electronic utility bill payment kiosks, computerised driving license facilities and computerised birth certificates in some locations. It is also providing technical support to the Ministry of Interior on operating Machine Readable Passport service.

With a view to automate the government's internal communication process, Government of Pakistan established an e-Governance Directorate[8] in 2002 which is still in a nascent phase with a small number of projects.

It should be noted that most of the computerisation initiatives in Pakistan have been designed more for recording, controlling and accounting for information rather than sharing it with people to empower them, except for when it happens as a spill-over of the computerisation process.

2.   Information Management in Pakistan's Public Sector: The Case of Land Records

The information systems in Pakistan's public sector are predominantly paper based and an elaborate filing system is in place, as a remnant of the British colonial paraphernalia.   These files remain under the custody of state functionaries who exercise a fairly arbitrary control over them, deciding the extent and nature of public access to them. This gives rise to a lack of accountability as well as proliferation of rent seeking behaviour among the public sector functionaries.

Land enjoys a significant place among the assets owned by the people in both urban and rural contexts in Pakistan. There exists a complex and elaborate system of land records management, basically founded by Sher Shah Suri (1472-1545 AD) who ruled the Indian sub-continent between 1540 and 1545. This system was taken to scale by the following Mughal kings and the British colonial powers consolidated it during their rule between 1757 and 1947. This land record system, which is basically aimed at putting in place a mechanism of land revenue assessment and collection, is prevalent all over Pakistan. The following box illustrates some of its salient features:

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[8] http://pakistan.gov.pk/e-government-directorate/

Box 1: Land Record System in Pakistan
Our present land record system is not too far removed from the system in place during Akbar's time. There are approximately 190 million land records purportedly containing the details of approximately 50 million landowners in Pakistan. These records are all in manual form. In urban areas, if a property is situated in a housing society such as Defence Housing Authority Karachi or Model Town Lahore, then the land records pertaining to that property will be in the custody of that society. However, in other cases, authority and maintenance of land records falls under the general purview of the Board of Revenue (BOR). The most junior official in the BOR is the Patwari (village accountant) who is generally a Grade-5 officer. Inexplicably, the original land records of a particular area are in the custody of the Patwaris, who are also the sole custodians of the records of government lands. There are nearly 14,000 Patwaris in Pakistan, each of whom is assigned responsibility over the original records of a particular area or between 2 to 8 revenue estates. A revenue estate may be a single large village or two to three small villages. A Patwari is required to keep the original land records with him at all times and has the authority to make changes relating to ownership, use and taxation in the original record.

Land records are not simply static details of who owns what. The Patwari has 17 massive registers in his possession kept in a cloth bag called a Basta. One register, for instance, contains details of present landowning; in another, the Patwari records sale and transfer of land. But there is also a register containing details of crops grown on lands and a register of tenancies. There is also the infamous Lal Kitaab or 'Red Book' in which the Patwari records unusual happenings on a particular property or area, such as an outbreak of bird flu, disease or death of cows etc. There is also a register containing the family tree of the landowner in order to ascertain who the property will pass to in the event of his death. All these registers are cross-linked and are quite scientific in theory. In practice, however, the system is a mess.

Source: Blue Chip Magazine, Islamabad, August 2004, Vol 1, Issue 3

The rapid access and transparency of the land records is a must to give an impetus to investments in land in terms of agricultural production, residential development etc., as it will facilitate the process of transactions, credit, transfer and mortgage. It will also provide a chance to the smallholders to turn their fixed assets in the form of land, into dynamic assets to be integrated in the market.

## 3.	Issues in the Land Record Management System

Pakistan's land record system is antiquated and raises several concerns including:

Obsolete and opaque system of land revenue records

Cumbersome processes and dependence on the *Patwaris* coupled with vulnerable practices leading to illegal annotations. Land records do not provide either conclusive proof of ownership nor are they linked to spatial data to perfectly identify the plot.

Irresponsive and inaccessible revenue machinery

A number of officials intervene in a single transaction[9] and yet – or because of that, the backlog and delays are large. Also, by law, land records must travel with Patwaris, thus making the records inaccessible to others in the meantime.

Disputes over rights and delays in courts

The inaccuracy and complex nature of the current system exacerbates land-related disputes. Lack of credible information generates considerable delays in resolving pending cases in courts.

Tenure insecurity

Outdated records and lack of updated geographical data coupled with engineered *fards* (quasi- title deeds) are some of the roots for such insecurity. The expansion of the Patwari's jurisdiction due to increasing subdivision of holdings and population growth make the Revenue Record unmanageable. The records of rights in rural areas are to be updated every four years. They were originally established based on detailed field survey and included a map of each village showing the position and boundary of each parcel. This graphic information was intended to be updated every 25-35 years. This has not been the case and also, given the rates of transactions in some areas, this pace would certainly not be enough.

Multiple institutions and dispersed responsibilities:

At present, a number of different entities are responsible for recording and updating land rights in urban and rural settings. The system of recording land rights differ under the Land Revenue Act and the Registration Act. Thus separate records are kept and different rules followed. For instance, registration of a subdivision in rural areas is voluntary and can be done verbally whereas in urban properties, it is mandatory and should be done in writing at land registries. In addition, any search by a buyer in the Revenue Record and the Registrar's Office will not automatically provide the needed information on actual transactions.

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[9] Each mutation in land rights is initiated only by the Patwari It is expected to be revised and verified by the "Gardawar" and the Revenue Officer approves or rejects it after visiting the place in common assembly. On the other hand, mutations could also be registered in the Records of Deeds through a more expensive procedure that includes the payment of stamp duty and registration fees.

4.   Issues in Access to Land Record

The most commonly needed land-related document is a quasi-title deed, denoted as the *fard*. The main purposes of this document include the following:

- As a guarantee for furnishing bails in court cases;
- As a proof of permanent residence to obtain domicile certificate;
- As an attachment to application for an "Agricultural Passbook" for obtaining loans from financial institutions;
- For keeping in record a proof of changed ownership of land as a result of inheritance, and,
- For affecting mutation of land under sale, purchase, mortgage, lease or as a gift.

A social assessment study[10] revealed that the landholders need to access the land record, especially the *fard* between 2 to 10 times a year. As is reflected in all the project documents, the Patwari is the sole authority issuing the *fard*. Though the official fee for obtaining an updated and attested copy of *fard* is very small, incidence of rent seeking by Patwari, for issuing this document, is ubiquitous.

Depending upon the level of desperation of the landholder, and his/her position of power, the amount of rent sought may vary between Rs. 200 for a routine copy, to Rs. 20,000 if needed for releasing a dear one on bail from police custody. The graft sought may also rise in proportion to the amount of cash involved in the transaction, especially in the case of a mutation.

The source of this rent seeking practice is mainly based upon two factors viz., the Elusiveness of Patwari and Ignorance of People.

Despite clear injunctions in the laws and a distinctly defined supervision and control mechanism in secondary legislation, a break down of accountability mechanism in public sector in general in Pakistan has transformed the role of Patwari into a powerful stakeholder despite being a lowly state functionary in theory. According to the responses of stakeholders, the Patwari is entrusted with a host of official and "para-official" duties by the establishment that take up more than 80% of his time. Patwari is the focal person for all sorts of activities, such as preparation of voters' lists, immunization campaigns, electoral rallies of the ruling parties, lining of water courses, or official and demi-official tours of the dignitaries to the area. This not only keeps him over burdened but also provides him with an excuse to play hard-to-get. The general callousness of public sector functionaries has resulted in decline of supervisory visits by higher level revenue officials, making Patwari the virtual authority on land related matters.

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[10] Qazi, M.U. (2005)

The revenue department staff in general and Patwari in particular are not provided with any facilities or remuneration to match both their power over people and their workload. The Patwari has to raise funds "privately", not only to discharge his official and para-official duties but also to make both ends meet.

Secondly, the complex system of maintenance of records, the culture of secrecy surrounding all the governmental documents, cumbersome business process, hard-to-decipher language of revenue records and general apathy towards the rights of the citizens has added to the mystification of land records, creating a fear in the minds of the people about the potential manipulation of these records.

In usual practice, the Patwari's office is seldom in a passable shape and the Patwari is almost never present there. The landholders have to search for him all over the area, often for various days, before even being able to grease his palm for any official business.

As is evident from the above paragraph, getting hold of Patwari and making him discharge his official duties is a cumbersome and costly affair. It is hard enough for the middle income male sections of the community, let alone the poor, the marginalised and the female members of the community.

4.   Introduction of Information and Communication Technology (ICT) in Land Records Management

The 'information revolution' is introducing revolutionary concepts in the field of dissemination and processing of information. The inception of computers in organisations has the potential to create a tremendous impact on the social environment, as the processing and communication of data can now be carried out in an unprecedentedly quick and efficient manner[11]. ICTs have provided the society with a great potential to facilitate public access to data that is theoretically in the public domain yet has hitherto been under the sole custody of state functionaries leading to rent seeking practices at a massive scale. The paper looks at two pilot initiatives to identify their approach towards public facilitation for access to this data.

In its efforts to capitalise on the potential offered by ICT, at least two projects have been piloted in two provinces of Pakistan for computerisation of land records to facilitate citizens' access to it and, by implication, increase the perception of tenure security. The two projects are Land Record Management Information System (LRMIS) in the Punjab province, and Participatory Information System (PIS) in the Balochistan province of Pakistan. These projects claim to facilitate public access to -and make transparent- the land records in two pilot sites in the two provinces.

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[11] Negroponte (1995)

The two projects will be analysed in terms of their planning process, objectives, design, institutional mechanism and political economy. In both projects, the stakeholders are not only the land owners and tenants but also the other market and state actors who are likely to be affected from the increased efficiency and transparency of land records management systems.

The following narrative provides a brief description of both these projects in terms of their approach towards facilitating citizens' access to land records.

4.1   Participatory Information System (PIS) Balochistan

The Support to Devolution Reforms in Balochistan Project (SDRB, formerly known as Balochistan Trial District Management Project), funded by UNDP, aimed to support decentralisation in Balochistan Province. The project was housed in the provincial Planning and Development Department, that has the mandate to oversee the development planning. As a part of this project, a Participatory Information System (PIS) was created, consisting of a management information system with a geographic information system interface. The project was piloted in Loralai and Jhal Magsi districts of the province.

The PIS brought together data on distribution of public services with village- and household-level data. This data, once processed and output, could be used by local government decision makers to help plan, implement, manage and monitor public sector development activities at district level. The data collected from communities included gender, educational level, occupation, vaccination, and access to schools, water, and health facilities. The GIS interface was used to present data not only to government officials, but also to communities with the intention of making them aware of community strengths, weaknesses and development potentials and priorities. The GIS itself also held data layers on water courses, roads, settlements, forests, cultivation, power and communications infrastructure.

As a part of the PIS, land records for some parts of the districts were also computerised and access was provided to the people through the project offices. The project was based on the premise that a mere demonstration of a more transparent and accessible system will "convert" the decision makers to the idea of computerisation and will thus bring about an internal change towards better asset security and restoration of citizens' confidence in the government's machinery.

The documentary output produced by the PIS regarding the land tenure had no legal value and had no official use. The system was operated by project staff, hired from the market by UNDP. The revenue department functionaries such as Patwaris were also involved in its operation, but their involvement remained intermittent and lukewarm because of the absence of any official or procedural compulsion upon them to participate in it.

The SDRB project is in a dormant phase these days, awaiting funds for its extension.

4.2 Land Record Management Information System Programme (LRMISP), Punjab

The LRMIS program aims at establishing an improved land records service delivery system in order to reduce litigation and bring about long-lasting tenure security. The pilot phase covering one revenue unit (Qanoongoi circle) in Lahore district was funded by the provincial government and the World Bank has shown interest in replicating it to other parts of the province. The programme consisted of two main thematic components viz., *Institutional Development* – including policy and legal frameworks, changed management, infrastructure and operations and maintenance, and human resources development; and *Service Delivery* - covering business process reengineering, land records management information system (data validation and entry, automation, software-hardware-connectivity, deed interface, information maintenance, and spatial data capabilities), community service centres (kiosks), public awareness, and quality assurance. The project is housed within the Board of Revenue that has the mandate of managing all the rural and part of urban land in the province.

A number of previous attempts had been made in the Punjab province since 1980s to computerise the land records, but they all failed because of a number of technological and political reasons, some akin to the ones described under the previous section on SDRB. LRMIS was marketed relatively better by the project managers, and was accepted by the political leadership as well as donor agencies. For the political leadership, it was a good opportunity to please their electorate by easing the process of accessing the records. The donor agencies, primarily the World Bank, found it useful to reduce the formal and informal transaction costs in land market, making the land assets more efficiently integrated into the market.

The initiative started with the premise that it would have to take a transformational approach whereby it would gradually replace the manual system. The manually recorded data was entered into computers in close collaboration with the Patwaris who were officially assigned to the project by the Board of Revenue. The Patwaris' training in operating the system was an integral part of the project design. With a view to eliminate the requirement of physical presence of the Patwari to issue papers, the system design aimed at putting all the information on an intranet and putting only the read-only output on the internet for public access. This was done to safeguard the system against hacking. For affecting mutation or to alter the records, the Patwaris were required to provide a password as well as biometric identification (thumb impression) to open the database. The system would keep track of all the changes made in the records and take a photograph of the mutating parties as

well as the Patwari at the time of mutation. This feature was put in place to prevent fraudulent practices.

After data input and validation, the provincial government, through a legislation, granted legal status to the *fards* produced by the system and then abolished the practice of issuance of manual *fards* in the pilot area. Special kiosks were developed in the pilot area where one could get his/her *fard* issued within a day of applying for it. The official cost of getting the documents remained the same as the manual one but the aim was to minimise the trend of kickbacks taken by the revenue officials for issuance of these papers.

The project is being expanded to other parts of the province with financial and technical support of the World Bank and other provinces are also considering similar initiatives.

The project is semi-operational in the pilot Qanoongoi circle. Through an executive order, the provincial Board of Revenue has stopped the issuance of manually prepared *fard*. A legislative amendment however, is still awaited for the legal recognition of electronic signatures and the revenue officials still have to sign the *fard* manually. This has solved the citizens' problem partially as the time and effort required for getting the patwari to actually write the *fard* has been reduced but he still needs to be chased to get his signature. The project managers are in the process of taking the legislative process forward to affect a full transformation of the procedure.

5.   Comparative Analysis

Both the projects claim to facilitate public access to -and make transparent- the land records. The project in Balochistan has taken up a "demonstration" approach where an ICT based information system is developed in parallel to the existing manual system. The expectation seems to be that the ICT based system will demonstrate its superiority over the manual system and the stakeholders will adopt it. The project in Punjab is taking a "transformational" approach where the ICT based system seeks to displace the existing manual system by bringing about systemic changes that cover Business Process Re-engineering and capacity building of the existing functionaries.

The two approaches contrast in the sense that the former one ventures to steer clear of the corruption and power based local political economy that is a part and parcel of the manual system and expects to convert the stakeholders to the new system by a form of "preaching". On the other hand, the latter approach aims at grappling with the existing system to change its dynamics by bringing about structural and technological change.

While the PIS took land record computerisation as one small component of a larger decentralisation support project, the LRMISP is specifically aimed at improving the citizens' access to land records. In terms of system architecture, since the former initiative did not consider challenging the power structure in a major way, and its product had no legal status, the design was lax about introducing checks and balances to circumvent illegal alteration in the records. In any case, since the Patwaris were not

even supposed to operate the system and the data acquisition and output had to be performed by the project staff, the need for security checks was not felt.

LRMISP, on the other hand aimed at providing legally acceptable alternates to the existing manual records and expected the Patwaris to do that job. For this reason, the system architecture has some stringent security features such as restricted logins, tracking of alterations and keeping photographic records of the parties involved.

The LRMISP also recognised that a reformed political and managerial super-structure is a necessary condition for technological innovation. It also worked towards the "up-skilling" of existing staff to allay their fears regarding employment loss. In addition to this, the Business Process Re-engineering component of the project is formulating the recommendations for revising both the recruitment criteria, requisite qualification as well as the remuneration level of the *Patwari*.

Interestingly, both the projects have a strong public awareness component and the PIS invested considerably more resources in this than the LRMISP but ensuring the legal and market value of the *fards* issued by LRMISP has warranted its use by people more than what was the case with PIS. This is despite the fact the print outs from PIS were distributed free of charge while LRMISP charges a fee.

The following table gives a comparative snapshot of the two projects for various design components of an information system:

Table 1: Comparison of PIS and LRMISP

Project	Planning Process	Objectives	Design	Institutional Mechanism	Political Stance
PIS	Communities and line departments consulted but the potential "affectees" i.e., Patwaris not taken on board in a meaningful manner	Demonstration of a superior approach with a view to improving planning process in general	Stand alone system with printer and multi-media projector	Planning and Development Department, with no real district level counterpart	Assumed that the problem is technical and ignored the local political economy of information management.
LRMISP	Communities, legislators and officials consulted. Patwaris' involvement in the process ensured through administrative orders	Gradual transformation of the management system by eliminating the manual system with a view to improving public access to land records	Network of computers with printers and the output available on the internet	Board of Revenue, targeting the functionaries at all levels of hierarchy	Recognising that it is a systemic problem with strong vested interests attached to the existing system

6. Stakeholder Analysis

There are a number of stakeholders involved in the land management system. In addition to the primary stakeholders including the landowners, tenants and revenue officials a number of important secondary level stakeholders have the potential to be affect by or affect the introduction of e-governance in this particular area of public sector management. The following table gives a brief account of some of these stakeholders and their position vis-à-vis the usage of ICT in land record management, backed by legal authority:

Table 2: Stakeholder Analysis

Stakeholder	Existing Situation	Position in an e-governance scenario
Small landowner	Bearing large transaction costs due to cumbersome access and inability to understand it	Likely to benefit because of minimisation of barriers to access
Large landowner	Same as above	Same as above. Also, likely to benefit from a more efficient land market
Urban landowner	Relatively more secure tenure record	Likely to benefit from a more efficient land market because of a perception of increased tenure security
Tenants	Insecure tenure because of non-maintenance and updating of land records	Likely to remain the same as the tenancy entries in the record will still have to be verified by manual inspection by the Patwari
Females	Deprived of their rights of inheritance due to cultural taboos. Very difficult for women to gain access to the land records to press their claims	Marginally benefiting. Making access to land records easier for the ones who would dare disregard the cultural taboos.
Poor, powerless and destitute	Often fraudulently or forcibly deprived of their lands and fake transactions enacted through connivance of powerful people and revenue officials	Marginally benefiting. The system would not provide the social protection needed by many to fend for their rights
Revenue staff	Overworked, underpaid and mostly corrupt	Mixed impact. The workload will become lessened but the power to squeeze bribes will also be curtailed
Law officers	Large burden of litigations, over-burdening the bench	Likely to benefit. The increased access and clarity of records will ease the process of justice considerably
Elected representatives	Local government finding hard to carry out proper development planning or revenue assessment in the absence of clear record	Likely to benefit. The graphic interface of computerised land record facilitates development planning

These are the differential impacts on some stakeholders in the case of the adoption of ICT for land record management.

7. Challenges and Opportunities

An overview of both the cases described above points to the following challenges:

- The computerisation as a stand alone initiative is not going to provide even the perception of asset security;
- A procedural and systemic reform is necessary to facilitate the computerisation to take root;
- A computerisation process that does not warrant a practical involvement of the direct stakeholders of the previously existing manual system, is most likely to fail without alleviating any human suffering;
- The computerisation of record system involves large initial financial costs in terms of the procurement of hardware, software, human resources as well as training requirements.

Similarly, the spectre of an ICT based system offers some opportunities too:

- With expansion in communication infrastructure, increased awareness, and basic know-how of computers, more and more people can access computerised information;
- The high initial investments save a lot of second order costs if a sound investment is made at the early stage of the initiative;
- Advancement in the field of e-security is making more robust options available to ensure the accountability and transparency of the citizens' records management process

8. Conclusion

A number of conclusions can be drawn from the above narrative, which may be applicable to variety of contexts, especially the developing countries. These include:

- A political will behind the concept of empowering people through informing them is a necessary pre-condition for introducing ICT based public sector management systems
- A gradual but complete transformation of the procedures, protocols and environment of the related public sector department will be needed in parallel to automation exercise to ensure that the social change does not lag too far behind the technological change
- Capacity building and up-skilling of people from within the existing staff should be considered to ensure a minimisation of apprehensions, fears and frictions about technological change
- The human security does not automatically result from introduction of ICT in public sector but is a result of a multi-pronged approach covering social, organisational and legal reforms.

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