DPRC WORKING PAPER

Computerization of the Lahore High Court: A Case Study of IT in the Judicial System

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Development Policy Research Centre
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The Development Policy Research Centre (DPRC) is a knowledge centre structured around core socioeconomic development themes with the objective of carrying out cutting edge multi-disciplinary research. The centre combines the disciplines of social sciences and law to strengthen evidence-based policymaking.

This report was submitted to the IT Committee of the Lahore High Court, and Law and Justice Commission of Pakistan.

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List of Abbreviations

A/V: Audio-visual
BPR: Business Process Re-engineering
CNIC: Computerized National Identity Card
IT: Information Technology
IVR: Interactive Voice Response
LHC: Lahore High Court
LJCP: Law and Justice Commission of Pakistan
LUMS: Lahore University of Management Sciences
MIT: Member, Inspection Team
NACM: National Association for Court Management
NADRA: National Database and Registration Authority
NJC: National Judicial Conference
NJP: National Judicial Policy
NTN: National Tax Number
PC: Personal Computer
RFID: Radio-frequency Identification

1 Introduction

The purpose of this brief report is to summarize the findings of an investigation into the current state of technology use at the Lahore High Court and suggest improvements in the existing systems to facilitate better management of court time and resources as well as improve the access to justice. The introduction of Information Technology (IT) at the Lahore High Court (LHC) dates back to 1991 when the then Chief Justice inaugurated the IT department at LHC. However, as shown in the next section, the IT system that was introduced has made little impact on the routine functions of the Court.

In his introductory remarks to the National Judicial Policy-making Committee in April 2009, the Chief Justice of Pakistan observed: "the restoration of 3 November (2007) judiciary has ushered in a new era: an era of hope that political dispensation in the country and governance shall be in accordance with the constitutional principles. We must strive to meet… [these] expectations… Let us infuse confidence in the minds of our people that the system of administration of justice is capable of meeting the challenges of time and emerging realities." The National Judicial Policy (NJP) 2009 outlined a bold program to improve judicial services at the grassroots level by minimizing corruption and delays in the judicial system. One of the measures proposed in the NJP 2009 for achieving these objectives is to use the latest computing and networking technologies "to check and monitor the case flow and measure the qualitative and quantitative output of judicial officers." [1]

More recently, the declaration issued at the end of National Judicial Conference (NJC) 2010 has re-emphasized the need for increased use of information technology to facilitate court functions. The Conference declaration went a step further and recommended the establishment of a model E-Court "in each High Court and District court" to automate court proceedings and records for "increased transparency" and "expeditious disposal of cases".[2]

This report presents the findings from ongoing research collaboration between the Law and Justice Commission of Pakistan (LJCP) and Lahore University of Managements Sciences (LUMS) on the potential role of IT in improving judicial services. The current phase of investigation was formally initiated by LJCP vide letter No. F.14/222/2010/LJC-AI dated January 22, 2010. A team comprising of faculty members from LUMS and their research assistants visited different departments of the Lahore High Court over a period of two months from March 8, 2010 to May 25, 2010. During these visits, the team members got a chance to observe the court systems firsthand as well as to meet with relevant judicial, administrative and IT staff to understand the actual and potential role of IT in court operations. A complete list of team members as well as the list of people interviewed for this report is provided at the end of this report in Appendix 1 and 2.

The report is organized as follows. We first present the findings regarding the existing workflow and IT setup at the Lahore High Court followed by a case for automation and the features that may be desired in a functional E-Court with reference to the experience in other countries such as India, UK and USA. The latter half of this report also allows us the opportunity to highlight some of the major challenges expected in making this transition besides putting together a bibliography for further reference.

[1] National Judicial Policy 2009, p. 36. Available at: http://www.sindhhighcourt.gov.pk/njp2009/njp2009.pdf

[2] A more detailed set of recommendations on different areas of automation were compiled by the Working Group on Information Technology at the National Judicial Conference 2010. These detailed recommendations are available at http://ljcp.gov.pk/Menu%20Items/NJC-2010/PDFs/Final%20Recommendations.pdf (p. 8).

2 Case Workflow and IT Systems at LHC: A Review

Figure 1 contains a schematic representation of the typical case workflow in the Lahore High Court. The blue boxes indicate different offices within the High Court and the arrows indicate the flow of information between them at each step of the process. The role of each office is briefly explained alongside the box and key stakeholders are highlighted in bold. Once the case has been assigned to a particular court, the case flow becomes cyclical and the remaining steps are repeated in the same order at each date of hearing until the final judgment or dismissal, at which point the file is sent to the archival section of the Record Room for storage.

It is worth pointing out that the workflow diagram has been simplified to represent the most significant components in an otherwise complex system operating under detailed rules and procedures of doing business. For instance, there are several stops made by a case file within the Judicial Branch as it travels from one desk to another and acted upon by relevant clerks before being sent to the Record Room for shelving till the next hearing.[3,4] In addition, the diagram does not include the role of other administrative offices such as the Finance Branch, which becomes relevant for the collection of court fees and fines etc., but otherwise remains peripheral to the regular flow. Finally, the exact sequence followed by a given case may vary depending on the case type, with the so-called 'motion' cases following a slightly different path.

Here we would like to highlight the extent of IT use in the typical case workflow. The IT department at the LHC does have a database of pending cases.[5] Every time a case is filed in the Urgent Cell, its particulars are entered into the computer which assigns a unique reference number to that case. Similarly, every time a case gets closed, that information is updated in the database. But no record is maintained between these two points in the case lifecycle even though each case file contains order sheets documenting (in hard copy) the court orders at each hearing. At the time of writing, this limited database entry along with a court website containing the updated weekly cause lists and use of computers to print the cause lists for distribution, were the only three areas where IT was being actively applied in the day-to-day functioning of the Lahore High Court.

Hence, most of the nuts-and-bolts activities related to the administration of justice, such as, courtroom proceedings, issuance of notices or summons, fixation of cases etc., are unaffected by the latest technology and continue in the forms of old. By and large, the processes related to case management are still being done manually. A case file which goes from desk to desk inside the Judicial Branch is tracked through entries in multiple book-keeping (or '*Dak*') registers that are stacking up and occupy a lot of storage space. Such paper-based systems are notoriously hard to monitor and increase the opportunities for corruption by members of the lower staff. Similarly, no IT applications are involved at all when it comes to either the scheduling of court hearing for cases, recording the court proceedings or storing case records electronically for generating authentic copies. In the absence of robust software development activity, the role of the IT department staff has been reduced to entering data and typing cause list information passed on by the judicial branches.

[3]A Notice Clerk, for example, is responsible for issuing notices as per the orders passed by the court whereas a Cause Registration/Fixation Clerk maintains a calendar and assigns a date for next hearing in those situations where the next hearing was not scheduled by the presiding judge. This latter action would take place after the completion of all other orders just before the file is sent to the record room. It usually involves noting down the case in the clerk's diary against a specific date, which will be communicated later to the Computer Section for inclusion in the cause list to be printed for that date.

[4]The Judicial Branch itself has four sections dealing with four distinct categories of litigation: civil, criminal, writ and commercial. Appendix 3 provides some detail on the inner workings of the Judicial Branch.

[5]A database is an organized collection of records stored in a computer.

Figure 1: Case Workflow at LHC

A new case is filed in the Urgent Cell of the Lahore High Court

Urgent Cell

1. Urgent Cell checks case documents and enters some particulars into a computer database

2. Addl Registrar (Judicial) then assigns the new case to a judge and sends the file for hearing to his/her court

Court Room

The Judge reviews the case, records his orders and sends the file to the Judicial Branch for completion and/or fixation of the next date for hearing

Judicial Branch

1. Judicial Branch (J.B.) completes the judge's orders by issuing notices & summons, getting case record, or comments from govt. agencies etc.

2. After completion, the case file is sent to the record room for temporary storage

3. For most cases, the Judicial Branch also fixes the date of next hearing

4. Sends weekly cause lists to the IT section for printing and distribution

Record Room

1. Record rooms in J.B. maintain files for cases that are pending before different judges

2. The Record-keeper locates the case files for next day's hearing and sends them to the court

IT Department

1. The Computer Section in the IT Department receives handwritten lists of cases to be heard by different judges in the coming week

2. It types and prints multiple copies of the weekly cause list and distributes it to lawyers, judges etc.

N.B. Solid arrows denote the movement of the original case file from one location to another whereas the hollow arrow indicates exchange of information without the file. The case file is eventually sent for storage in the record room archives after the final judgment/dismissal.

For the few IT applications that were being used at the time of this investigation, the LUMS team evaluated their technical robustness and found some serious limitations. The key findings from this technical evaluation are listed below:

- The website for the Lahore High Court, its external interface with the world at large, was being hosted by an external contractor in such a way that the IT department had little control over it apart from uploading the weekly cause lists. Thus, when a computer virus made the LHC website unavailable for several months, nothing could be done to rectify the situation other than to try and locate the contractor.
- The technology behind the website is not current. The worldwide web has transformed significantly over the last decade and the LHC is in urgent need of a newer, secure and state-of-the-art website.
- The software being used to maintain the court database is outdated. The license for the underlying database management system, Oracle, was purchased 10 or so years ago and has not been updated since. This outdated software has provided certain minimum functionality so far due to the fact that the current setup is largely confined to the IT branch and a couple of other installations. Unless patched regularly, Oracle is vulnerable to security threats both from within and outside the system just like any other computer program. The fact that it has not been updated makes the current database unsuitable for expansion or scaling-up as that is going to significantly increase the exposure to malware, threats, and security breaches.
- The database schema was originally designed around 15 years ago. Since then, a lot of user-defined requirements have changed. The IT staff has been incorporating these changes in an ad-hoc fashion without changing the core schema/design of the database. As a result, the current database format is inconsistent.
- Even with occasional updates in the database schema, its current form is grossly inadequate for the kind of applications envisaged. The database does not store information on key variables needed for the functioning of the E-Court, such as, complete history of a case, time spent in different stages, calendar of judges and lawyers, antecedents of litigants or their representatives such as the CNIC or NTN numbers, contact information of opposing parties, identifying information of the staff handling the case etc.
- In addition, the database is not currently set to generate any audit or forensics log files. Various developer level interfaces have been exposed to the staff members involved in entering the data (e.g., in the Urgent Cell). Similarly, any misuse or abuse of the system or escalation of privileges is not being logged by the system. Due to the critical nature of the data, such standard access control procedures need to be incorporated in the database design.
- The IT department does not have any protection against hackers from outside or within the LHC. There is no intrusion detection or prevention system in place and there are no firewalls. The system is very vulnerable to attacks. Moreover, the IT staff seemed unaware of security related issues and were often not qualified enough to deal with those problems.
- Overall, it seems that the existing database has been designed under the assumption of benevolence or naïveté on the part of its users. While this might be a workable assumption given its limited exposure at present, it does make the system vulnerable to all sorts of mistakes and opportunistic behavior.

Before concluding this section, we would like to submit that, while the above might raise questions regarding the technical expertise of the IT staff, we were not tasked to evaluate the individual members of the IT team nor do we think that the current state of affairs can be attributed solely to their collective expertise. In our view, it can be more accurately traced to a lack of leadership or strategic planning for IT efforts in the past. We return to this important point towards the end of this report.

3 Model E-Court: Vision for the Future

This section is divided into two parts. First, we outline the benefits expected from the use of information technology in light of management theory as well as the experience of other countries. Second, we provide a list of possible IT solutions for the E-Court to be established at the Lahore High Court as envisioned in the National Judicial Conference declaration.

3.1 Benefits of Automation

Given the existing workflow at the Lahore High Court, we have already alluded to several practical advantages to IT in our context. The main obstacle to an efficient and transparent handling of cases lies in the fact that the case file, with all the original documents, physically travels from one office to another. This creates a couple of problems. Firstly, the fact that there are several handlers of a file within the judicial branch effectively means that the responsibility for ensuring the integrity of its contents is diffuse and a quick and honest completion less likely. Secondly, cumbersome logbook registers need to be maintained to manually log the file movement. In a fully automated High Court system, computers will eliminate the need to send the actual file to the judicial branch as the access to the order sheet as well as case documents can be made available through the case tracking software. Thus the file will be sent directly from the court to the record room before being called back for the next hearing.

In addition, the case tracking software could be designed to facilitate monitoring of individual court staff, such as the process servers or clerks in the judicial branch, by their supervising officials. This would help reduce corruption, another fundamental objective of NJP 2009, by improving the overall transparency within the judicial system. If, in future, the system is scaled up to cover district courts, it will greatly facilitate the work of the inspecting (MIT) Judges by eliminating the need to solicit monthly pendency reports from the District and Sessions Judges as the same information would be available from a computer in the Judge's chamber.

Moreover, the computerized system could be designed to build an effective mechanism to reward performance. Let us suppose that we suspect the process serving agency is performing below par. The case tracking software could be designed to store data on process servers, and the amount of time it took to serve the process in a given case, for each case in the Lahore High Court. This would help to objectively identify the top (and bottom) performers in each organizational role and therefore implement a mechanism, such as performance bonuses, to align individual incentives with broad policy objectives.

Another problem in the existing system, one that may be addressed independently of automation, relates to the organization of the Judicial Branch by function. A given sub-office within the Branch may have up to 10 personnel designated by their function, viz. notice clerk, record clerk, cause registration clerk etc. It needs to be investigated further whether this form of organization runs the risk of being over-specialized. It clearly seemed, in some instances, that the tasks to be performed were sufficiently general to reap benefits from pooling together these human resources, as shown by standard results from Queuing Theory. For instance, it has been shown that having *multiple* 'servers' (in this case, clerks) organized to serve a *single* 'queue' (in this case, say, civil lawsuits requiring completion) can reduce 'wait' (or completion) times and improve the quality of service.[6]

The most immediate implication of the above, with respect to establishing the E-Court, is that it does not require the duplication of the entire organizational structure of the existing Judicial Branch. Instead, the E-Court could just function with a staff of few dedicated 'servers'. The long term implication of this might be a move towards an organizational model where each staff member takes responsibility for completing *all* orders in a given file with the help of his supervising official. This model is commonly implemented in several request-tracking systems, such as customer helpdesks etc., and a software application could be developed to ensure smooth functioning and monitoring of the workflow.

Another area that requires much improvement is the

[6] The same principle explains why, for instance, airports and post offices all over the world prefer serving single long queues instead of multiple queues of customers.

fixation of cases. At present, the fixation of cases is done according to a set of criteria laid out by the Chief Justice of the Lahore High Court which include giving preference to older cases. However, the actual date of hearing is set without consultation with either of the two parties or even, in case of fixation by office, the presiding officer. Therefore, it is common to find that the same lawyer has been slotted to appear before different courts at the same. He has to perforce miss some of those hearings leading to unnecessary adjournments. While an IT application can be designed to automatically minimize clashes for (local) hearings at the Lahore High Court, it leaves open the possibility that the scheduled date might still clash with a lawyer's appearance before the Supreme Court or some other bench. Hence, it seems that an adequate global solution is not possible unless the rules of business are radically altered as done in UK under the new case management system recommended by Lord Woolf's report (see below).

3.2 The Case for IT: International Comparison

In India, the need for improved use of court resources has led to calls for the introduction of courses in "court management" at the judicial training institutes (Lahoti, 2003). The argument is that the optimal use of court time and effective service delivery could greatly benefit from a general management training for the court administrators. This underlying principle is, however, already firmly established in more developed countries such as USA where the *National Association for Court Management* (NACM) was founded in 1985 and caters to "court management professionals… from all levels and types of court".[7]

If court administration is viewed as the application of best management practices to judicial services, the rationale for using IT to provide adequate information support systems follows naturally. In fact, Information Technology Management is listed by NACM as one of the ten core competencies that court leaders should seek to acquire.[8] Besides facilitating communication within and outside the judicial setup, one area where IT promises significant advantage lies in its use in case management as evidenced by the much-cited ruling of the Supreme Court of India in the Salem Advocate Bar Association, Tamil Nadu vs. Union of India (2005).

The ruling, which followed an earlier ruling that rejected the challenge made to the constitutional validity of the amendments to the Code of Civil Procedure through Amendment Acts of 1999 and 2002, contains a report by the Chairman of Law Commission of India (Justice M. Jagannadha Rao). The third part of the report, called Report 3, formulates the model case flow management rules. Clause (4) of the High Court rules involves the use of IT in monitoring case flow. It states: "[w]here computerization is available, data will be fed into the computer in such a manner that the court or judge or judges, referred to in Clause (2) above will be able to ascertain the position and stage of every case in every track from the computer screen."

The renewed emphasis on case flow management follows the report prepared in UK by Lord Woolf in 1995-96 which proposed radical changes in the way case management was being done in that country (Rao (2003) cites the Woolf report). The overall aim of Woolf Inquiry was "to improve access to justice by reducing the inequalities, cost, delay and complexity of civil litigation and to introduce greater certainty as to timescales and costs."[9] Both the interim and the final report of Lord Woolf included a chapter devoted to the potential application of IT to support his recommendations. In addition to specific ideas on court automation, these chapters provide a good overview of the IT applications deployed in the UK court systems.[10]

The Woolf report came to the conclusion that in order to achieve the above-mentioned reform objectives, "there is no alternative to a fundamental shift in the responsibility for the management of civil litigation in this country from litigants and their legal advisors to the courts."[11] Under

[7]The NACM website is located at: http://www.nacmnet.org/index.html
[8]See the discussion at NACM website for why IT is considered a core competency for court leaders, available at: http://www.nacmnet.org/CCCG/cccg_4_corecompetency_ITmgmt.html. Also view the knowledge, skills and abilities associated with this core competency at: http://www.nacmnet.org/CCCG/cccg_4_corecompetency_itmgmt_cg4.html
[9]Woolf Report (1995), chapter 5, para 1.
[10]Also see the Bowman Report (1997), Chapter 8, for IT applications in the UK Court of Appeals. For India, see the National Informatics Centre website at: http://www.indiancourts.nic.in/courts/itinjud.html
[11]See Woolf Interim Report (1995), chapter 5 para 2.

the new rules, since implemented, the schedule of hearings as well as the decision on whether to take the matter to trial is often decided in a pre-hearing case management conference between a procedural judge (representing the court) and the legal counsels for the two sides. This gives greater control to the court over case management and is likely to reduce missed hearings. However, see Peysner and Seneviratne (2005) for a review of the pros and cons of this system.

3.3 Potential IT Applications for the E-Court

We list below a set of potential IT applications for the model E-Court to be established at the Lahore High Court, roughly arranged in the order of importance. The priority in listing these applications comes from their expected impact on court performance.[12] In addition, it is our understanding that the primary objective in establishing a model E-Court is to create a live, functional template for potential scale-up to other courts in the country rather than showcase all possible IT applications that can conceivably be used in a courtroom setting.[13] The applications listed here are modular in the sense that each application could be thought of as a self-contained project to address a specific set of problems. The linkages across the different modules, where exist, have been highlighted.

1. **Computerized Case Tracking and Monitoring System:** This computer database containing individualized case history will greatly assist case workflow and case load management and will form a backbone for a lot of other court-oriented IT applications in the future. Besides improved support for monitoring, the system will help provide effective and speedy justice. At a minimum, the system should have the following capabilities:
   - Record every transaction on a case from start to finish
   - Store text or images of all case documents in the database for easy access
   - Allow judges to monitor pendency and number of cases at various stages
   - Generate automatic alerts for case events, such as date of next hearing or to flag unusual delay at any stage
   - Online availability of documents to authorized users, including the final judgment, for "copy" purposes
   - Indexing of cases by commonly searched classification keywords
   - A performance rating system for the different stakeholders
   - Connection with the NADRA database for ID verification (if possible)
   - Integration with the High Court Bar registry for lawyers' information

2. **Finance Management System:** Imposition of costs, where applicable and ensuring fine collection is mentioned as one of the areas for improvement in the NJC 2010 Recommendations to increase compliance with the judicial policy. This computerized financial system will keep track of the accounts receivable for individual cases and help manage court fees and fines. This system can be integrated nicely with # 1 above. As such, it will also help avoid any unnecessary adjournments due to non-payment of court fee by approving only those cases for fixation that have cleared all dues.

3. **Computer-aided Real-time Transcription:** This computer-aided transcription device converts the typist's shorthand into full text and should help reduce the time in which court reporting is done and the orders made available to public. It can also introduce considerable efficiency in the use of court time as the orders can be typed or dictated during the proceedings as well. For typing in English language as commonly done for judgments or order sheet entries at the Lahore High Court,

[12]Here we take the National Judicial Policy 2009 and the National Judicial Conference 2010 declaration as our guidelines regarding the desired parameters of court performance. However, we are not aware if there is any other policy document that outlines broad performance expectations from courts in Pakistan. A good example of such a document is the Trial Court Performance Standards for the US court system.

[13]For an example of an exhibition courtroom featuring latest technologies in the context of another judicial system, visit the "Courtroom of the Future" at: http://www.legaltechcenter.net/aspx/demos.aspx. Also see the following presentation located at the Court Technology Laboratory, National Center for State Courts (USA): http://ctl.ncsc.dni.us/presentations/Boyle-FuturE-Courthouses.pdf

such devices are already available on the market and their output can potentially be integrated with the case tracking system in #1.[14] It is unlikely that any such device is currently available for writing in Urdu language as is mostly done in the lower courts although it might be a good IT research project to develop one.

4. **Institutional Email and Networking Facilities:** In addition to the above computer applications, access to email and internet can significantly improve productivity of the judges and their research assistants by facilitating communication within the different court personnel and reducing access barriers to international judgments, law journals and databases etc. Such facilities can be set up with or without a large investment in the accompanying computer and networking hardware.[15]

5. **Legal Information Systems:** There are two aspects to the IT services that fall under this general rubric: making available earlier judgments on the internet to provide easy access to case law for judges and lawyers alike; making available procedural law in easy Q&A form (in English and Urdu) for the benefit of general public and to improve legal education and empowerment. Either or both of these initiatives could make use of the revolutionizing communication possibilities afforded by the internet to reap tremendous medium- to long-term benefits. Besides, it is possible to develop innovative solutions geared towards that segment of the larger public which does not have access to the internet.

6. **Interactive Voice Response (IVR) System for Public Queries Regarding Case Status:** This should allow interested litigants or their lawyers to make a telephone call and find out the status of their cases pending in the Lahore High Court by navigating through an automated voice response system.

7. **Digitization of the Record Room:** Record rooms are notorious for the difficulty in locating individual files. This is problematic and not just for the dispensation of justice. It severely constrains the scope of conducting empirical research into pressing issues of judicial or legal significance, such as identifying those areas of substantive law where potential lacunae are generating excessive litigation, which could then feed into the design of evidence-based policy. In this context, it is of utmost importance to initiate an effort to preserve and digitally archive record room holdings. While such a revamping of the record room is an independent multi-year project in its own right, a smaller sub-project concerns tagging of the pending case files using RFID technology or digital barcodes. The objective of this sub-project should be to ensure that a case file put into the record room is easy to locate as currently this information is held in the person of the Record- keeper with no institutional memory of the holdings. Moreover, digital tagging makes it harder to remove the material from the site.

8. **Digital Cataloguing System for the High Court Library:** Like the Record room renovation mentioned above, the High Court library needs to shift to a modern cataloguing system and hire research librarians to help the judges or their affiliates with legal research questions.

9. **A/V Equipment for Video- or Telephone Conferencing:** If required, the latest multimedia technologies allowing virtual communication could be utilized, say, for obtaining expert testimony or to link up with prisons in cases where

[14]See, for instance, http://www.ncdhh.ne.gov/brochures/cart_broch.pdf
[15]The magnitude of infrastructure costs depend on the type of services required. For instance, setting up a broadband internet facility at the Lahore High Court might require significant investment in the networking infrastructure. The exact determination of such costs will require taking inventory of the existing equipment at the Lahore High Court, which was beyond the scope of this report. However, it may be recommended that, in accordance with standard asset management practices, a complete inventory be taken along with tagging of the existing equipment before purchase of any additional hardware equipment.

security-related issues prevent travel. If video-conferencing facilities are unavailable, video recordings could be used as a substitute in some instances.

10. **E-filing of Cases:** This system envisions a futuristic interface where a lawyer/ or the litigating party can file a lawsuit without coming to the court. If developed, this system would be integrated with the case tracking system in # 1. For now, this has been considered a low-priority task as it requires substantial change in rules of business and is not likely to have an impact on any major segment of the stakeholder population given the level of computer literacy in general. However, its rationale will become stronger over time in some urban jurisdictions.

11. **Inter-linking of the Different Justice Sector Institutions:** The ultimate goal of developing an automated case management system (such as # 1) and other simultaneous e-governance initiatives by the Government should be to link up the different justice sector institutions like police, prisons, and courts to facilitate information exchange. However, since this requires successful deployment of compatible IT systems across multiple departments, this virtual information sharing is not a realistic goal in the short-term. See Appendix 4 for the model case workflow in a fully automated E-court that is linked up with other departments and services.

12. **Litigation Support Systems:** These are essentially online document storage and retrieval systems to assist the lawyers representing both parties in reviewing case material and share information related to the case. Lord Woolf (1995) mentions the use of litigation support systems in certain special courts' jurisdictions where lawyers from the opposing parties are encouraged "to agree on compatible systems and where possible to share the costs of setting up the systems (especially those of uploading the documents or information about them)." Its applicability in the current context seems limited.

4 Scope of Work

This section gives an overview of the tasks involved in a typical IT project and the roles and responsibilities of the implementing agencies. The discussion here is a bit generalized and is meant to be illustrative of the typical project cycle. The specifics might change depending on the work plan adopted by the IT Committee and we will make concrete recommendations on some of the critical planning and implementation issues in the next section.

A typical IT project involves the following stages:

1. Procurement, Installation and Commissioning of Hardware
   - System software and networking infrastructure
   - Procurement of PCs, desktops, servers, laptops
   - Deployment of the necessary hardware, networking and connectivity at all designated points at the centre.
   - Plan for implementation of system-level changes based on stakeholder requirements as and when necessary.
   - Networking hardware such as hubs, switches etc.

2. Development of Application Software
   - Systems requirement study and solution design
   - Software design, development, implementation, enhancement, training, documentation and maintenance
   - Data digitization and data migration for legacy data
   - Third-party performance audit of the application software

3. Application Integration with District Courts and the Supreme Court
   - Ensure interoperability and seamless data exchange by defining data exchange requirements, creating database schema and designing utilities for data exchange between lower courts and the High Court
   - Ensuring interoperability and data exchange between LHC and the Supreme Court.

4. Capacity Building and Change Management
   - Design and execution of change management, training and communication strategy for successful implementation
   - Training on the application software and training on general computer skills
   - Design of change management strategy, communication strategy and content of training for the lower court staff

5. Operation and Maintenance
   - Operational support and maintenance of application software; problem identification and resolution
   - Software change and version control as per industry standards
   - IT infrastructure maintenance and operations; help desk support for the application to be provided
   - Ensure shelf life of hardware for minimum period
   - Ensure support for spares and services
   - System administration and database administration of the central application

5 Implementation Issues

The listing of IT applications in this report is intended to be exhaustive and the decision-making authorities might want to adopt a subset of these applications to be implemented over a one to five year horizon. However, the choice between alternative IT initiatives is not always easy. Nor is their practical effectiveness on ground always assured. Before concluding this report, we would be amiss to not mention the real difficulty in most complex projects involving organizational change: how best to manage the transition.[16]

As veterans of the e-governance initiatives in Pakistan often observe, *the chief culprit behind the difficulty in public sector IT initiatives is the failure to manage the transition rather than the capacity to develop the right tools*. Unlike a solution that merely does window-dressing by purchasing expensive new equipment, any IT project that addresses the core problems will inevitably require changes in the rules of business. Such Business Process Re-engineering (BPR) requires careful planning and frequently generates intense opposition by working against entrenched interests. In this context, the goal of establishing a model E-Court that may be scaled up to other courts is a step in the right direction as it focuses reform efforts while keeping them at a manageable scale. It is hoped that the formation of an IT Committee consisting of the honorable judges of the High Court will further help to streamline the process and help develop consensus on the overall strategic direction.

In our opinion, effective deployment of the IT solutions in the model E-Court will require the following: well-designed software, adequate infrastructure, BPR and human resource training. While setting up infrastructure or developing quality software is perhaps the easiest to manage by contracting out to high-quality firms, it is the latter two which require people to change old ways of doing things or master new knowledge and will need to be managed properly with other developments. *Given the importance of BPR and personnel training, we recommend that appropriate sub-committees may be formed to assess and supervise each of these areas for ensuring a smooth transition*.

Moreover, we would like to warn against the pitfall of making large-scale upfront purchases of expensive equipment in favor of initially focusing on the 'softer,' and perhaps less visible, aspects of the solution such as development of high quality IT applications and their effective deployment as well as human resource training. It is hoped that by managing the phased procurement of new hardware equipment, the fixed costs associated with establishing a functional E-Court will be rationalized, hence, delivering the maximum value for each investment.

The following specific recommendations may be offered in order to build political support for the IT reform and the associated BPR in the model E-Court:

<u>If it ain't broke, don't fix it:</u> One of the objectives in deploying any IT solution should be to create the "minimum necessary disruption" to the different stakeholders. Those areas where automation is not likely to yield much performance gains should be left untouched. Moreover, running the two systems in parallel initially with an early opt-in incentive for individual stakeholders (if possible), might also lower the costs of adjustment.

<u>Get the sequence right:</u> Broadly speaking, the IT reform initiatives should be implemented in such a way that those initiatives which deliver maximum benefit to the stakeholders are implemented first in order to build support for the ones likely to be more contentious or requiring greater procedural change.

<u>Invite independent impact evaluation:</u> One important element in the effort to build support will be the ability to credibly demonstrate the benefits of automation. Therefore, we recommend that the reform be approached in an open, objective manner where the IT Committee encourages independent third-party evaluation of the new E-Court processes to quantify the impact on court performance and access to justice etc.[17]

[16]For instance, see Heifetz and Linsky (2002) for a clear and concise account of the leadership risks involved in trying to steer an organization through difficult change and how to mitigate those risks.

[17]Such engagement should start at the outset as impact evaluations often require measuring and comparing the ex-ante outcomes with ex-post. Apart from building support, interim evaluations (of a qualitative nature) may be useful in their own right as they are often able to identify weaknesses or suggest new directions.

Finally, we strongly recommend that a qualified project management team be installed to provide tactical direction to the various IT initiatives and engage with the external contractors under the overall strategic vision of the IT Committee. Ideally, this team should be recruited specifically for the E-Court project. By working closely with the court staff and IT firms to ensure successful deployment of IT applications, as well as their integration into the court activity, this team will come to internalize the lessons learnt from this initiative. The knowledge thus gained should prove indispensable if the project is subsequently scaled up to other courts in the country. In fact, in the interests of scalability, it may be recommended that the establishment of the model E-court proceed simultaneously at the Lahore High Court and some selected district court.

6 Concluding Remarks

The National Judicial Policy 2009 aims to eliminate corruption and delays from the country's judicial system. The use of information technology in courts was recommended to help achieve these objectives and it was further recommended that a model E-Court be established at the High Court. The above policies are an encouraging sign for the future of the justice sector reform. But policy decisions become meaningful only when they get implemented and degenerate into action. Unless that happens, they can at best be termed as good intentions.

In this report, we have reviewed the legacy IT systems being used at the Lahore High Court and found them wanting for the objectives outlined in the judicial policy. In light of theory and international practice, we have argued that court automation can yield significant improvements in judicial services if properly implemented. Not only does it afford greater control and oversight over the court affairs by making them more transparent for the presiding officer as well as the monitoring judge, the proposed IT applications will also improve the experience of the general public by making the following information easily accessible: the schedule of hearings, case status, order copy and general guidelines in navigating the court systems etc.

But we have also argued that bringing about the required organizational change in order to benefit from various IT initiatives, especially as they are scaled up beyond the model court, is fraught with difficulty. Whenever the status quo is disrupted, and people within an organization are asked to make tough choices which involve changing their old accustomed ways of doing things, it is entirely human nature to resent that change as well as the agents of change. This is about more than just technology. That is why negotiating organizational change requires political acumen and sensitivity and is widely considered in the management literature as one of the sternest tests of leadership.

We concluded this report with some specific recommendations on managing the transition. In particular, we recommend that the setting up of the model court(s) be done with an eye towards eventually scaling up the IT applications thus developed to the entire judicial system, including the lower courts. This might occasionally mean giving up on the most sophisticated solutions in favor of the ones that are more reliable for system-wide application. In addition, sufficient attention must be given to the business process re-engineering required for the alternative IT solutions, as well as the costs of human resource training, and the ones deemed less costly or controversial should be given priority over others. Moreover, an effort should be made to hire qualified professional(s), with relevant industry experience, to provide an intermediate layer of project management expertise. This project management team is expected to provide direction and support to the various initiatives and would be an invaluable resource for the eventual scale-up. Last but not the least, any strategic plans for court automation should build in impact evaluation along the way to consolidate the lessons learned and ensure progress in reaching the desired objectives.

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8 Appendix

8.1 Appendix 1: LUMS Team

1. Dr. Muhammad Fareed Zaffar, Assistant Professor of Computer Science, Lahore University of Management Sciences (LUMS)

2. Dr. Muhammad Farooq Naseer, Assistant Professor of Economics, Lahore University of Management Sciences (LUMS)

3. Mr. Salman Mahmood, Research Assistant to Dr. Fareed Zaffar

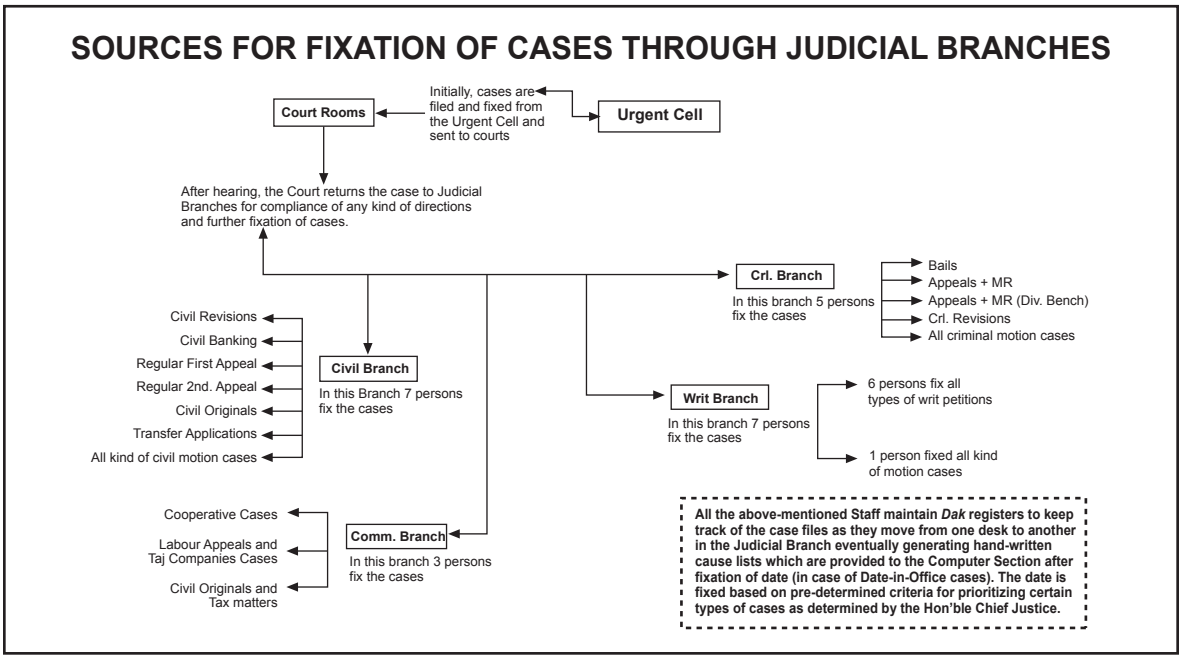
4. Mr. Dawood Tariq, Research Assistant to Dr. Fareed Zaffar

5. Mr. Azhar Zaheer, Research Assistant to Dr. Farooq Naseer

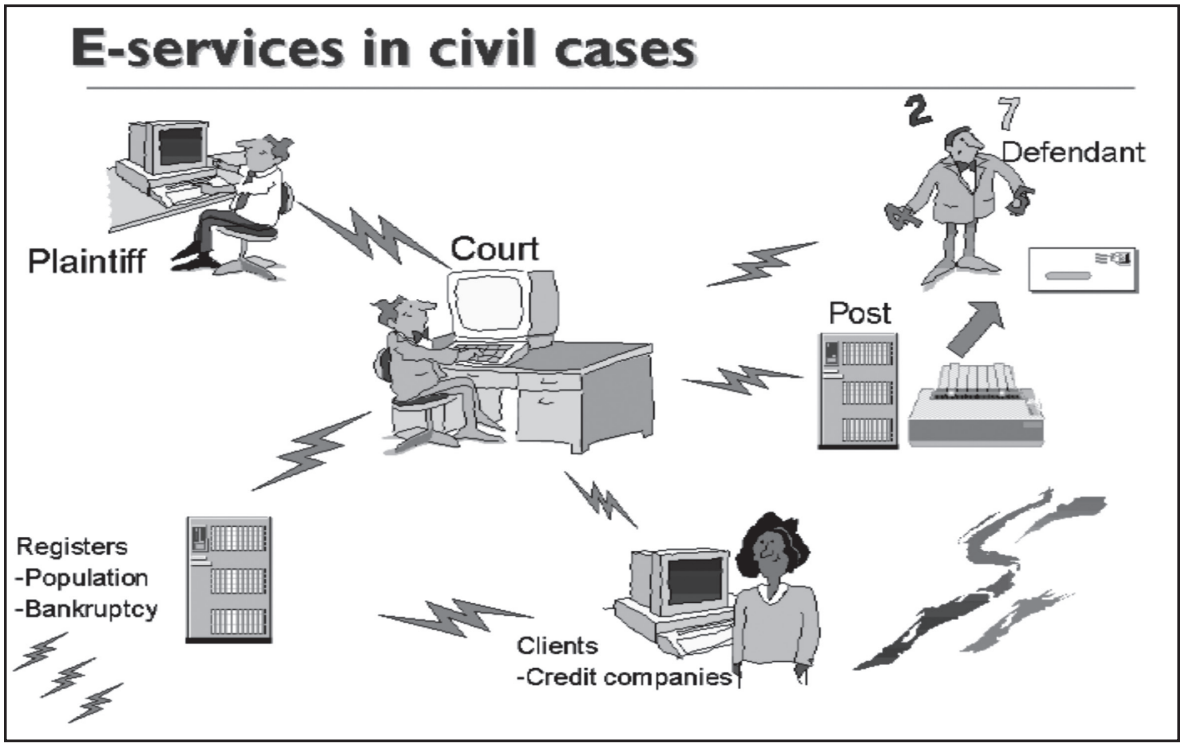
8.2 Appendix 2: List of People Interviewed

1. Hon. Justice Syed Mansoor Ali Shah, Judge, Lahore High Court
2. Mr. Bahadur Ali Khan, Additional Registrar (Judicial), Lahore High Court
3. Mr. Abdul Nasir, Additional Registrar (IT), Lahore High Court
4. Ms. Saima Mushtaq, Deputy Registrar (IT-I), Lahore High Court
5. Mr. Muhammad Rafique, Deputy Registrar (IT-II), Lahore High Court
6. Mr. Iftikhar Ahmad, Assistant Registrar (IT), Lahore High Court
7. Mr. Mansoor-ul-Haq, Assistant Registrar (CRC), Lahore High Court
8. Mr. Yousaf Shaheen, Assistant Registrar (Criminal Branch), Lahore High Court
9. Mr. Haji Muhammad Idrees, Assistant Registrar (Urgent Cell), Lahore High Court
10. Mr. Shahid Shafi, Reader to the Hon. Justice Mansoor Ali Shah
11. Mr. Muhammad Sardar, Incharge Computer Section, IT Dept, Lahore High Court
12. Various other staff members in different sections of the Judicial Branch and the court of Justice Syed Mansoor Ali Shah

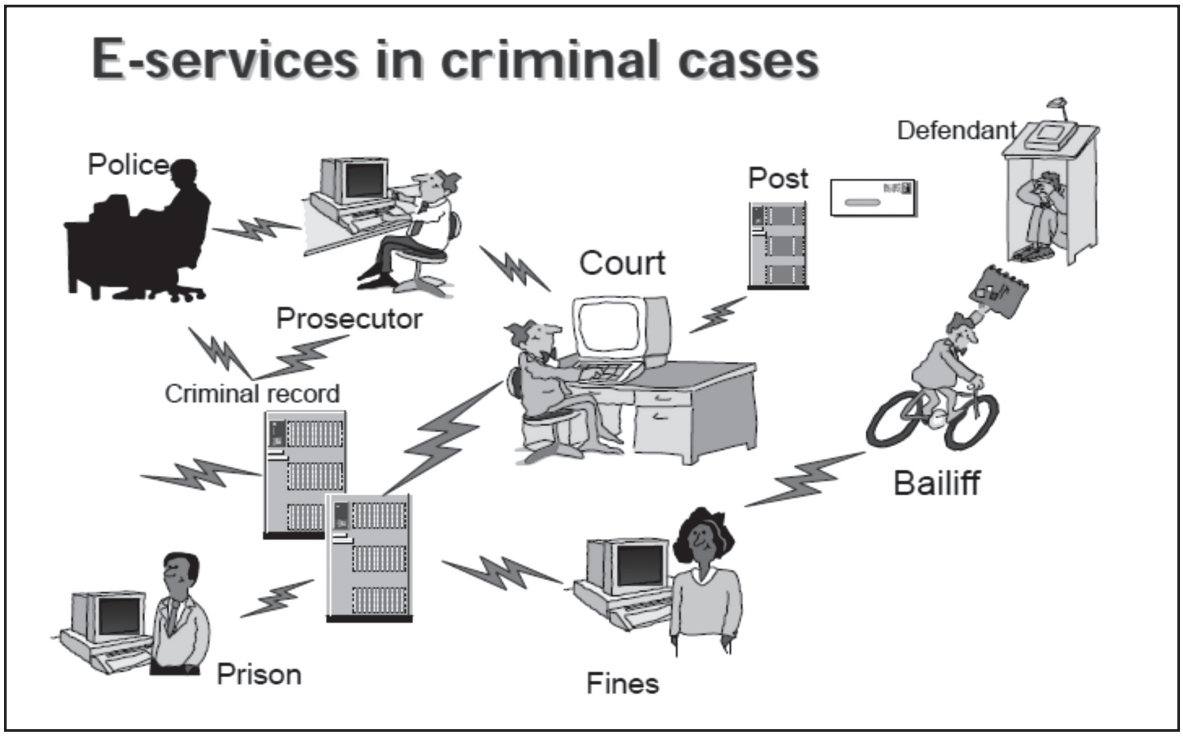
8.3 Appendix 3: Organization of the LHC Judicial Branch – Fixation of Cases



8.4 Appendix 4: Case Workflow in a fully Automated Civil and Criminal Court



Source: Kujanen, K. 2003. "E-services in Finland." A presentation made at the 8th Court Technology Conference, USA.



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