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The Need for E-Court Implementation in Pakistan (An Analysis of the Current State of Justice Delivery and The Role of Technology)

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Abstract

Pakistan's justice system has long struggled to deliver timely and efficient justice to its citizens. The growing backlog of cases has led to significant delays, eroding public trust and making it harder for people to access justice. As these challenges deepen, it has become evident that traditional court processes can no longer meet the needs of a modern, fast-paced society. In this context, the use of technology presents a promising opportunity to reform the justice system and make it more accessible and efficient. This paper explores the urgent need to introduce e-courts in Pakistan. The system that uses digital tools to transform how justice is delivered. It begins by examining the current challenges of the judiciary, such as case delays, inefficiencies, and lack of transparency. It then highlights how e-courts can help overcome these issues by digitizing records, reducing paperwork, and enabling remote hearings. With e-courts, litigants and lawyers can gain quicker access to information, ensuring greater accountability and transparency. Using a doctrinal research approach, this paper analyzes existing laws, judicial practices, and technological readiness to assess Pakistan's capacity for e-court adoption. A comparative study with the United States shows that the success of e-courts depends not only on technology but also on strong legal frameworks, institutional support, and digital inclusion. The paper concludes that implementing e-courts is essential for building a faster and transparent justice system in Pakistan.

Keywords: E-Courts, E-Courts Implementation, Judicial Staff, Justice Delivery

Introduction

Pakistan's justice system is struggling with a number of problems. Courts are burdened with an excessive caseload. Courts take years to decide the cases in Pakistan. Citizens of Pakistan often feel that the justice system is expensive, slow and unfair due to unnecessary delay. These challenges have violated public trust. The World Justice Project's Rule of Law Index 2024 ranked Pakistan 129th out of 142 countries while showing serious weaknesses in access to justice and legal accountability. At the end of 2023, more than 2.25 million cases were pending in the courts, with district courts carrying most of this burden. To resolve these issues, temporary and small reforms are not sufficient. What Pakistan needs is a transformation of the traditional court system into a digitalized system. In such circumstances; the effective solution is to introduce a stable, digitalized upgraded e court system in Pakistan to ensure the fair delivery of justice [1]. E-courts do not only deal with the efficiency of work but it represents the concept of delivery of justice in a digitalized and accessible manner. With the help of technology, courts can reduce case delays, cut costs for litigants, and even lower their environmental impact by reducing paper use and unnecessary travel. The COVID-19 pandemic proved this point that courts worldwide had to shift suddenly to virtual hearings, showing the

urgency of building strong technological systems. International experience provides useful lessons. India, through its e-Courts Mission Mode Project, has computerized more than 18,000 courts and launched a National Judicial Data Grid to give the public easy access to case information. The United Arab Emirates (UAE) has gone even furthermore, today 94% of its cases are conducted online, improving case resolution times by 18% and making justice quicker and more accessible. These examples show that with the right investment and planning, technology can reshape how courts function [2]. Pakistan has begun moving toward e-court adoption but remains in its early stages. Key initiatives include the Islamabad High Court's online case tracking system and the Lahore High Court's collaboration with the Punjab Information Technology Board (PITB) to introduce e-filing, online cause lists, and a mobile app offering real-time updates. However, transitioning from these limited steps to a fully functional national e-court system presents significant challenges, such as the digital divide between urban and rural areas, inadequate infrastructure, and the need for training judges, lawyers, and court staff. Despite ongoing reforms, Pakistan's justice system remains slow, expensive, and often inaccessible, particularly for people in remote areas. Implementing e-courts could transform access to justice by enabling individuals to file cases, submit evidence, and attend hearings remotely, reducing travel, cost, and delay. Technology can streamline court procedures, increase efficiency, and ensure transparency through online access to case information, orders, and judgments, thereby curbing corruption and rebuilding public trust. Given Pakistan's large backlog of pending cases, e-courts could help courts process more cases efficiently. Learning from international models, Pakistan can adopt best practices to modernize its justice system. Studying the need for e-court implementation is therefore essential to identify challenges, assess feasibility in terms of infrastructure and human resources, and pave the way for a more transparent, accessible, and efficient system of justice delivery [3].

Evaluating the present state of justice delivery in Pakistan and Its key challenges

Scholars have consistently highlighted that Pakistan's judiciary suffers from severe delays and limited access to justice. For example, Ali and Hassan (2022) document that nearly two million cases were pending across Pakistani courts, posing serious challenges to judicial effectiveness and legitimacy. Imran, Idrees and Saeed (2024) further emphasize that structural causes such as outdated procedural rules, heavy reliance on paper-based systems, and insufficient judicial capacity contribute to prolonged adjudication timelines. In response, policy-analysts and legal scholars propose that Information and Communication Technologies (ICT) encompassed under the term "e-courts" or judicial automation can provide solutions for increasing transparency, speeding case processing, lowering litigant costs, and improving record-keeping. Zafar, Anjum and Barkat (2024) outline how e-court systems are becoming a necessity in Pakistan's context of delayed justice [4, 5].

Origins and policy development of E-Court initiatives in Pakistan

The idea of integrating ICT into court operations is not confined to Pakistan; neighboring South Asian jurisdictions had begun adopting such reforms earlier, and international organizations have promoted "mission-mode" e-court projects. In Pakistan, momentum grew during the 2010s, when the Law & Justice Commission of Pakistan and various provincial IT committees started producing guidance on court automation and capacity-building. For instance, Raza (2024) analyses how Pakistan's legal and policy-making institutions have begun introducing video links, remote hearings, and case-management portals. Meanwhile, Kalanauri (2021) reviews the introduction of e-filing systems and virtual courts in Pakistan during the COVID-19 pandemic [6, 7].

Main components of Pakistan's E-Court initiatives

The multimodal e-court approach in Pakistan covers several distinct elements:

- Video-link / remote hearings: enabling registries, branches and district benches to connect virtually and reducing the need for physical attendance. Kalanauri (2021) describes how virtual hearings and videoconferencing became essential during the pandemic in Pakistan.
- Case management systems (CMS): digital registers of cases, calendaring tools and online portals that permit status checks. Kassar, Kausar & Laghari (2024) analyse how implementing CMS and e-filing reduces delays in Pakistan's judiciary.
- Electronic filing and document management: e-filing, digital storage of documents, and transcription/recording initiatives. Zafar, Anjum & Barkat (2024) argue for full-fledged virtual court systems at all levels in Pakistan.
- SMS/notification systems: alerts and updates to litigants, lawyers and court staff about hearing dates or case status changes. Raza (2024) cites digital courtroom and e-filing technologies as key methods to improve access to justice in Pakistan.

How Technology can improve access to justice and judicial efficiency

The literature identifies several potential gains from e-court adoption: faster access and reduced delays, enhanced transparency and public access, and increased administrative efficiency. For instance, Raza (2024) argues that e-filing, case-management and online dispute resolution present significant opportunities to modernize the Pakistani justice system. Zafar, Anjum & Barkat (2024) suggest that virtual courts reduce travel costs, save time and help litigants and witnesses participate remotely. These benefits when effectively implemented, can lead to lower litigation costs, fewer adjournments and stronger public trust in judicial institutions [8].

Constraints, Practical problems and critical findings

Notwithstanding the promise, scholars report multiple constraints limiting the impact of e-courts in Pakistan:

- Infrastructure & digital divide: Kalanauri (2021) notes that during virtual hearings Pakistan's courts faced challenges due to connectivity issues, power outages and inadequate hardware infrastructure [9] .
- Human capacity & change management: Shafiq, Salman Shafiq & Sarwar (2022) observe that Pakistani courts lag behind other jurisdictions in deploying ICT and that staff training, procedural adaptation and cultural resistance remain major obstacles [10].
- Legal and procedural gaps: Zafar, Anjum & Barkat (2024) argue that without uniform procedural rules covering remote hearings, evidence-management and transcript integrity, e-courts may not fulfil their potential.

- Pendency and scale: The sheer volume of pending cases is well documented (e.g., Ali & Hassan 2022; Imran et al. 2024) and suggests that technology alone cannot resolve structural issues like judge shortages or procedural complexity [11].

Evaluations and empirical studies

Empirical work in Pakistan remains limited and largely descriptive or pilot-level. For example, Kassar, Kausar & Laghari (2024) provide a qualitative approach to CMS and administrative reforms in Pakistani courts [12]. Shafiq et al. (2022) compare Pakistan's ICT adoption in courts with other countries and find gaps in implementation. These studies emphasise the need for rigorous monitoring and evaluation across provinces and court levels to assess outcomes on disposal rates, access equity and institutional reform.

Human and Socio-Legal Perspectives

A body of socio-legal literature emphasizes that e-courts must attend to user experience: litigants, witnesses and lawyers often regard courts as social spaces where dignity, fairness and procedural interaction matter. Although specific user-centered studies in Pakistan are few, Zafar, Anjum & Barkat (2024) argue that adoption of e-courts should be accompanied by

human-centered design, training of court actors and attention to the needs of vulnerable groups. Without these considerations, technological reforms risk being purely technical fixes rather than democratic innovations in access to justice.

Gaps and agenda for future research

The literature highlights several research priorities:

- Rigorous impact evaluations that measure the effects of e-court components on disposal times, adjournments, litigant costs and user satisfaction (Raza 2024 & Kassar et al. 2024).
- Equity audits to assess who benefits and who is excluded (urban vs rural; wealthy vs poor).
- Cost-effectiveness analyses comparing ICT investments with alternative reforms (e.g., more judges, ADR expansion).
- Participatory, user-centred research to involve litigants, lawyers, judges and staff in designing accessible Court-ICT systems.

Implementation of E-Court System in Pakistan

The adaptation of the E-courts system in Pakistan is a relatively recent development. Phenomenon. The contribution of technology in pleadings or other court procedure is limited in Pakistan, to an extent all the High Courts in Pakistan have introduced a case flow management system. In addition, recently the Peshawar High Court, Mingora Bench (Darul Qaza) has introduced a facility of online pleadings for the attorneys coming from far off districts [13]. On the level of subordinate courts, the use of technology is very minimal, even the basic things of record keeping are often manual. The COVID-19 pandemic acutely demonstrated the necessity for e-court systems. On 26th of February 2020, the very first case of COVID 19 was reported in Pakistan. Since then, the country has been under various lockdowns as the entire globe is trying to come out of the surge of the global pandemic. In the lockdowns every office, educational institutions, and other amenities of life remained closed. These exceptional circumstances of the pandemic did not spare the legal system. Most of the courts in Pakistan had almost no technological infrastructure to allow them to expedite justice virtually. Courts were either closed or operating partially and most of the hearings were called off. For instance, the Sindh High Court notified, in view of the coronavirus pandemic in the country and the likelihood of its spread in overcrowded places, ordered only cases of urgent nature to be heard and decided in the court and no adverse orders shall be passed in the absence of lawyers. The high court of Baluchistan also formed an opinion that cases of urgency matter will be heard, to follow precautionary measures physical movements restricted in the boundaries of High Court and the lower Courts, that the cases will be pleaded by the learned counsel or attorneys and parties may be called only when necessary, these orders were issued in respect of covid-19 to avoid the physical contact and to follow the precaution advised by Health advisory. Similarly, the Lahore High Court issued a strict advisory to all the district & sessions judges in Punjab to take extraordinary measures in the wake of the coronavirus outbreak and lockdown by the Punjab government. District & sessions judges in each district would nominate judges to perform duty of urgent nature for two weeks while female judges have been exempted from performing duty. Additional session's judges hear cases of urgent nature including post arrest bail petitions, habeas corpus petitions, and applications under Section 22- A & 22-B Cr. P. C. while magistrates and civil judges would only take up post arrest bail petitions, physical remand and issuance of interim injunctions on fresh matters. Further, a magistrate will visit jail to grant judicial remand in pending criminal cases. No case including pre-arrest bail shall be dismissed for non-prosecution and all the judges would ensure that they dispose of their business till 10:00 am and their staff members wear masks [14]. Female staff working in subordinate judiciary have also been exempted from performing duty except where a female is in charge of a branch. No person from the general public including a litigant, except in case of extreme need, would be allowed to enter court premises from the

main gate. District & sessions judges hold meetings with bar presidents and general secretaries to discuss and apprise them of these measures.

Similarly, the Peshawar High Court also notified that the work of the courts will be limited during the pandemic. Henceforth, the use of technology was dearly required during the pandemic. The pendency of cases will be higher even after the courts resume their normal routine work, which can only be reduced through increasing the number of judges and the use of technology in the judicial process. "Electronic communication is no substitute for the ability of face-to-face conversations to foster important process values of resolving the matter. Notwithstanding the advantages discussed above, online dispute resolving also has several disadvantages when compared with traditional methods. As Joel Eisen observes, the practice of dispute resolving cannot easily be reproduced in the online environment because "cyberspace is not a 'mirror image' of the physical world." As it is the most efficient and easier mode to overcome the litigation problem. But there is also a major flaw in this system and that is the connectivity issue. There is major connectivity with the internet issues in some parts of the state and to a particular population [15]. So, the procedure of recording a personal statement, or an advocate presenting his arguments may in some cases remain challenging. This issue cannot be ignored, as there are many stakeholders involved in a judicial process. If there are hurdles in the main procedures, like recording a witness statement, then the system will be rendered useless [16].

Implementation of E-courts by Legal Professionals

In Pakistan's perspective one of the most important issues which we cannot overlook is the hurdles created by legal professionals. We have seen in past that when Model Courts were established even at that time lawyers went for strikes to end the system, [17]. The reason behind this is Pakistan's legal system whereby the lawyers have developed practices for their own gains to delay the cases. Limited Range of Disputes and Confidentiality Concerns Few drawbacks are particular to the mode of online dispute resolution chosen. For example, a fully automated online system programmed for online dispute resolution can be used to resolve specific types of disputes and can only deal where the amount of settlement is only an unresolved issue. Dispute resolution is most effective when parties are physically present before the court as Joel Eisen argues "the great paradox of the online system is that it imposes an electronic distance on the parties, while physical way is usually an oral form of dispute resolution designed to involve participants in direct interpersonal contact." This is based on an informal in person discussion between the parties, creating an environment in which the litigants trust the court to adjudicate their dispute is deemed essential. The traditional court system creates a physical record whereas the online system creates an electronic record which enables parties to get easy access to communications without knowledge of other parties which may infringe the right of other parties [18].

Statutory Amendments

In Pakistan, operationalization of e-courts requires extensive amendments in the existing legal frameworks through statutes. Its existing procedural codes were written in an analogue age and do not mandate digitized judicial processes. As it was mentioned in the above section about COVID-19 reactions, the reason courts had temporary advisories is that there is no permanent statutory scheme of virtual proceedings. A complete-fledged e-court system requires substantial statutory amendments. This extends but is not limited to changes in the Code of Civil Procedure, 1908, to include the meaning of e-filing, e-hearing, and e-records, and amendments to the Qanoon-e-Shahadat Order, 1984, regarding the admissibility and authentication of digital evidence. The needed amendments are a revision of sections 25, 128, 142, and 143 of the Civil Procedure Code in relation to court procedures and communications and various orders such as Order III (Recognized Agents and Pleaders), Order IV (Filing of Suit), and Order IX (Appearance of Parties) to suit digital processes. Moreover, the Supreme

Court Rules, 1980 and corresponding rules of individual High Courts necessitate revision in order to institutionalize e-filing, virtual hearings, and digital case management. The absence of these legal reforms means that work of e-court projects may be exposed to legal loopholes, which may make the digital proceedings susceptible to legal challenges of validity and legitimacy [19].

Methodology

Research Design and Approach

This study employs a doctrinal legal research methodology to investigate the imperative for e-court implementation within Pakistan's justice system. Doctrinal research, defined as "a systematic and analytical study of legal principles, doctrines, and precedents" (Hutchinson & Duncan, 2012), is particularly suited for this inquiry as it facilitates a comprehensive analysis of the existing legal architecture and scholarly discourse surrounding judicial reform.
The research process was executed in a structured, multi-stage manner:

Identification of Primary Sources: The foundational step involved a detailed examination of primary legal materials governing court procedures in Pakistan. This included, but was not limited to, the Code of Civil Procedure, 1908, the Criminal Procedure Code, 1898, and the Qanoon-e-Shahadat Order, 1984, to identify statutory gaps and requirements for digital integration.

Analysis of Case Law: Pertinent jurisprudence from the Supreme Court of Pakistan and various High Courts was scrutinized to understand the judiciary's stance on procedural efficiency, delays, and the use of technology in court proceedings.
Systematic Review of Secondary Sources: An extensive review of secondary sources was conducted. This encompassed academic journals, books, policy reports from the Law and Justice Commission of Pakistan (LJCP), and international comparative studies on e-justice from jurisdictions such as the United States and India.
Synthesis and Construction of Argument: The data gleaned from the above sources were systematically synthesized to construct a coherent argument, identify thematic challenges, and propose a structured framework for e-court implementation in Pakistan.

Limitations of the Study and Avenues for Future Research

While this doctrinal approach provides a solid theoretical and legal foundation, it is imperative to acknowledge its inherent limitations. The primary constraint of this study is its reliance on documentary and secondary sources. Consequently, it does not incorporate empirical data gathered from fieldwork, such as surveys, interviews, or direct observations of court proceedings. As such, the findings offer a macro-level, policy-oriented perspective but lack the ground-level insights into the practical challenges, user experiences, and behavioral attitudes of key stakeholders, including judges, lawyers, court staff, and litigants. This gap presents a significant opportunity for future research. Subsequent studies employing qualitative methods such as structured interviews with judiciary members or quantitative surveys measuring the efficacy of existing e-court pilots would be invaluable. Such research would provide critical, data-driven evidence to complement the doctrinal analysis presented here and inform more nuanced, user-centric implementation strategies.

Comparison Analysis & Findings

Comparative Analysis on E-Court in U.S.A and Pakistan;
Before reforms, it is useful to understand what U.S. systems like the federal CM/ECF (Case Management / Electronic Case Filing) do. All federal courts allow e-filing of pleadings and motions via CM/ECF. Public access to case information and documents is provided through PACER. The system also provides alerts and email notifications to attorneys and parties when

filings occur, schedules update, or hearings are set. Furthermore, courts provide training and user support through manuals, help desks, and training sessions for attorneys and court staff on using e-filing. The U.S. is also continuously engaged in technology modernization, working on replacing aging systems like older versions of CM/ECF and PACER with more secure, user-friendly, and modern platforms. The modernization of Pakistan's justice system requires a comprehensive digital transformation, strategically tailored to its unique socio-legal context. While the foundational principles of e-justice are universal, their implementation must be adapted to local infrastructural realities and legal traditions. The proposed reforms, inspired by global best practices but customized for Pakistan, aim to address systemic inefficiencies, enhance transparency, and bridge the access-to-justice gap. A comparative analysis with the mature e-court system of the United States provides invaluable insights, highlighting both a potential roadmap and the critical divergences necessary for a successful Pakistani model. This comparison underscores that while technology provides the tools, success hinges on sustainable funding, robust legal frameworks, and an unwavering commitment to digital inclusion [20].

Proposed Reforms for Pakistan's E-Court System

The journey begins with establishing a Mandatory E-Filing System for legal practitioners in higher courts, drastically reducing the delays and physical burdens of paper-based filings. This must be supported by a unified, nationally integrated Case Management System (CMS) to provide real-time case tracking and efficient scheduling. A critical parallel initiative is the mass Digitization of Archives and new filings to create a reliable digital repository, preserving records and accelerating retrieval. To ensure these systems serve the public, a Public Access Portal for court dockets and non-confidential documents is essential, mirroring the function of systems like PACER but designed for local accessibility. Technology must be anchored in law. It is imperative to establish a Uniform Legal Framework by amending the Civil Procedure Code and Criminal Procedure Code to explicitly validate electronic filings, digital signatures, and virtual hearings, providing legal certainty. Simultaneously, a massive Training and Capacity Building mission for judges, court staff, and lawyers is non-negotiable to ensure adoption and mitigate resistance. This human-centric approach must be fortified with stringent Cybersecurity and Data Privacy protocols to protect the integrity and confidentiality of sensitive judicial data, thereby building essential trust in the new system. To prevent the exacerbation of existing inequalities, User Access & Inclusion Measures are paramount. This includes establishing public kiosks in court complexes, developing multilingual and mobile-friendly interfaces, and providing fee waivers for low-income litigants. The rollout itself must be strategic, following a Phased Pilot & Scaling approach, beginning with representative courts in diverse jurisdictions to test, learn, and refine the model before a national rollout. The entire endeavor depends on a dedicated, sustainable Budget & Resource Allocation for not only initial hardware and software but also for ongoing maintenance, connectivity, and technical support. Finally, establishing clear Monitoring & Performance Metrics (KPIs) for disposal time, backlog reduction, and user satisfaction will ensure accountability and enable data-driven course correction [21]

Comparative Analysis: U.S. vs. Pakistan E-Court Systems

The evolution of e-court systems represents a major shift toward digital justice, yet the contrast between the United States' mature model and Pakistan's emerging framework reveals a striking disparity in infrastructure, legal readiness, and institutional commitment. The United States has established a highly integrated and standardized system through PACER (Public Access to Court Electronic Records) and CM/ECF (Case Management/Electronic Case Files), which together ensure centralized management, accessibility, and uniform digital filing across all federal courts. By contrast, Pakistan's e-court initiatives remain fragmented and provincial in nature limited to isolated portals such as the Islamabad High Court's E-Court system without a cohesive national strategy or interoperability between judicial tiers and provinces. A critical point of divergence lies in the legal framework supporting these systems. The United States

operates under explicit federal and state-level procedural rules that not only authorize but also meticulously govern every stage of digital court operation from electronic filing to the admission of digital evidence. This legal clarity fosters confidence and consistency in the use of technology within the justice system. Pakistan, however, continues to rely on colonial-era procedural codes, namely the Civil Procedure Code (1908) and the Criminal Procedure Code (1898), which remain silent on digital processes. The absence of modern legislative amendments results in procedural ambiguities, leaving judges and lawyers uncertain about the legal validity of e-filings and digital documents. Public access also highlights the contrast between the two systems' developmental priorities. In the U.S., PACER offers comprehensive access to case records nationwide, but its fee-based structure has drawn criticism for limiting transparency by imposing financial barriers. Pakistan, on the other hand, grapples with a different challenge: the digital divide. The country's primary objective is not monetizing access but expanding it ensuring that digitization does not exclude rural or low-income citizens who lack stable internet or digital literacy. Thus, while the U.S. struggles with inclusivity due to cost, Pakistan struggles with inclusivity due to connectivity.

Implementation and infrastructure further expose the maturity gap. In the United States, e-filing is mandatory and universal, supported by near-complete internet coverage and reliable electricity. The system's functionality is ensured by decades of investment in technology and institutional training. Pakistan's implementation remains pilot-dependent, concentrated in urban centers like Islamabad and Lahore. Unstable electricity, weak internet coverage, and inadequate technical training hinder the system's nationwide rollout. The need for low-bandwidth or offline-compatible solutions underscores Pakistan's infrastructural limitations and the urgency of localized innovation. Finally, institutional leadership serves as a defining factor in the divergence of progress. The United States benefits from the Administrative Office of the U.S. Courts, a strong central authority responsible for standardizing and managing the system across all federal jurisdictions. This centralized oversight ensures efficiency, uniformity, and accountability. Pakistan lacks an equivalent national administrative mechanism; instead, judicial digitization is driven by isolated efforts of provincial high courts and the federal judiciary, often without long-term coordination or standardized protocols. In essence, the U.S. e-court system exemplifies what a mature, institutionalized, and legally grounded digital judiciary can achieve, while Pakistan's model reflects the struggles of an emerging system navigating infrastructural, legislative, and administrative constraints. Pakistan's gradual adoption, however, also represents an opportunity: by studying and adapting the lessons of the U.S. experience while tailoring reforms to its socio-economic realities. It can build a more inclusive and context-sensitive digital justice system in the years to come [22].

Technological Infrastructure and Process Automation

The cornerstone of judicial reform lies in digitizing core court processes. The mandatory implementation of an E-Filing System, initially for lawyers in higher courts, would drastically reduce the delays and costs associated with physical document handling. This must be coupled with a unified Case Management System (CMS) to provide real-time tracking of cases, thereby enhancing transparency and allowing for the identification of systemic bottlenecks. Following the model of the U.S. PACER (Public Access to Court Electronic Records) system, a public-facing portal for accessing dockets and non-sealed documents would be a transformative step toward accountability. To ensure these systems are effective, integrating automated notifications via SMS and widely-used platforms like WhatsApp is crucial to reduce adjournments caused by missed hearings, a significant benefit for litigants facing travel constraints [23, 24, 25].

Legal Framework and Capacity Building

Technology alone is insufficient without a supportive legal and human ecosystem. Reforms must be underpinned by amendments to the Civil Procedure Code (CPC) and Criminal

Procedure Code (CrPC) to explicitly validate electronic signatures, e-filed documents, and virtual hearings. This provides the legal clarity necessary to prevent procedural challenges. Concurrently, a massive, structured Training and Capacity Building program for judges, court staff, and lawyers is imperative to ensure adoption and mitigate resistance. This must be supported by robust Cybersecurity and Data Privacy protocols, including data encryption and secure authentication, to protect the integrity of sensitive court records and build public trust [26].

Inclusion, Phasing, and Sustainability

To prevent the creation of a "digital divide," reforms must be designed with Inclusion at their core. This involves establishing public access kiosks in court complexes, developing multilingual and mobile-friendly interfaces, and providing fee waivers for low-income litigants. The implementation strategy should be phased, beginning with pilot projects in a mix of urban and rural courts to test, learn, and refine the system before a national rollout. Finally, the success of this transformation hinges on a dedicated Budget and Resource Allocation for not only initial hardware and software but, critically, for ongoing maintenance, connectivity, and technical support, ensuring the sustainability of the reforms beyond the pilot phase [27].

Analysis and Lessons for Pakistan:

The U.S. system demonstrates the transformative efficiency of a fully integrated, nationwide digital infrastructure. However, Pakistan cannot simply replicate this model. The key lesson is the necessity of a strong, centralized policy driver akin to the U.S. Administrative Office of the Courts which in Pakistan's case would be a strengthened NJPMC. Pakistan must also learn from the U.S.'s accessibility challenges; its system should be designed from the outset to be low-cost or free for the public and accessible through low-bandwidth solutions to bridge its own digital divide. While the U.S. system is a benchmark for technical integration, Pakistan's reform model must prioritize inclusivity and phased, sustainable growth over rapid, wholesale transformation [28].

Lessons & Considerations from U.S. Implementations (Potential Challenges)

When emulating U.S. or other advanced jurisdictions, consider the lessons. Aging legacy systems can pose technical debt, for example, replacing or modernizing CM/ECF is a multi-year project in the U.S. Cybersecurity lapses are a serious concern, as U.S. systems have recently faced cyberattacks on CM/ECF and PACER. The digital divide means not everyone has reliable internet, devices, or technical literacy, so systems need to be designed to accommodate those gaps. Resistance to change from the legal culture, procedural traditions, and concerns about fairness may slow adoption, which requires proactive stakeholder engagement. Finally, the cost of infrastructure and maintenance for hardware, power, secure servers, and backups must be continually maintained and funded [29, 30].

Summary of Findings

The Pakistani justice system is in a critical situation, characterized by an enormous case backlog of more than 2.2 million cases, deep inaccessibility by rural and low-income citizens, physical infrastructure breakdown, and a culture of delay that deprives Pakistani citizens of timely justice. These systemic ailments are serious, but the digitized way towards reform is getting up. The use of virtual hearings, the e-filing system of the Islamabad High Court, and e-legal databases by the Supreme Court are pioneer projects that have shown that technology can serve as an impetus. Nevertheless, the viability of a nationwide e-court system depends on a realistic approach that will deal with the digital divide by investing in infrastructure, developing technology structures integrating and bilingual technology, and focusing on the significant transformation of human capital to enable all stakeholders to be effective players in a modernized judicial process. The adoption of the e-court system into a fully operational system should be a systematic and comprehensive approach. Some of the recommendations include

the implementation of a national policy on digital justice that is spearheaded by the Supreme Court to provide uniformity and interoperability in all the courts. This should be done in stages whereby the pilot project in each province will be implemented as a lighthouse project to show success and gain confidence. This should be backed by a special E-Court Implementation Cell to oversee this constantly and a digital-first, not only digital mandate that keeps a balance between inclusiveness through hybrid courts. The success of the transformation will finally be determined by a massive, tiered judge, lawyers and court staff capacity-building mission, healthy cybersecurity measures to defend sensitive data, and the integration of e-court platforms and legal aid services to bridge, not to augment, the already existing justice gap [30].

Conclusion

The analysis presented in this paper unequivocally demonstrates that the implementation of a robust e-court system is not merely a desirable upgrade but an urgent necessity for the revitalization of Pakistan's overburdened and delayed justice system. The doctrinal research methodology employed in this study, which involved a systematic analysis of primary legal sources, case law, and secondary literature, confirms that the current analogue-based procedures are a primary contributor to the crippling backlog of over 2.25 million cases and the erosion of public trust. The findings reveal that while Pakistan has initiated promising pilot projects such as the e-filing systems in the Islamabad and Lahore High Courts—these efforts remain fragmented, isolated, and lack the foundational support of a cohesive national strategy and a modernized legal framework. This study's findings are consistent with the broader literature on judicial reform in Pakistan, which identifies case backlog, procedural delays, and lack of transparency as endemic challenges [31]. However, this paper moves beyond merely diagnosing these problems by providing a structured, comparative framework for a solution. The comparative analysis with the mature e-court system of the United States yields a critical, twofold insight: successful digital transformation hinges not on the mere adoption of technology, but on the parallel development of robust legal frameworks and a steadfast commitment to digital inclusion. The U.S. model, with its centralized Case Management/Electronic Case Files (CM/ECF) system and legally embedded procedural rules, offers a template for efficiency and integration [32]. Yet, it also offers a cautionary tale; a system like PACER, while transparent, can create financial barriers to access. For Pakistan, this underscores the imperative to design a system that is not only efficient but also inherently accessible to its diverse, and often digitally marginalized, population.

The proposed reforms, therefore, must be holistic. As highlighted in the literature on socio-legal perspectives, technology imposed without regard for user experience risks exacerbating exclusion [33]. Consequently, any e-court implementation must be preceded and accompanied by comprehensive statutory amendments to the Civil Procedure Code, 1908, and the Qanoon-e-Shahadat Order, 1984, to legally sanctify electronic filings, digital evidence, and virtual hearings. Furthermore, as critically noted in analyses of past reform resistance, the human element is paramount [34]. A nationwide, tiered capacity-building mission for judges, lawyers, and court staff is essential to overcome institutional inertia and ensure effective adoption. In conclusion, the journey towards e-courts in Pakistan is a complex but indispensable one. It demands a shift from isolated, court-specific digitization projects to a nationally-driven, strategically phased, and sustainably funded transformation [35]. By learning from international best practices while meticulously adapting them to its unique socio-legal context, Pakistan can harness technology to bridge, rather than widen, the justice gap. The ultimate goal is clear: to transition from a culture of delay to a system that delivers timely, transparent, and accessible justice for all citizens.

Future Recommendations

To ensure the successful integration of e-courts within Pakistan's judicial landscape, a strategic and multi-faceted approach is imperative. First, the enactment of a comprehensive "E-Justice

Act" or substantial amendments to the Civil Procedure Code, 1908, and the Qanoon-e-Shahadat Order, 1984, is crucial to provide a solid legal foundation for digital filings, virtual hearings, and digital evidence. Second, implementation must be guided by a phased, pilot-based national strategy, overseen by a centralized E-Court Implementation Cell under the National Judicial Policy Making Committee (NJPMC) to ensure standardization and interoperability across provinces. Concurrently, a massive, tiered capacity-building mission targeting judges, lawyers, and court staff is essential to foster digital literacy and mitigate resistance. To prevent the exacerbation of existing inequalities, proactive digital inclusion measures—such as public access kiosks, multilingual interfaces, and fee waivers for low-income litigants—must be embedded in the system's design from the outset. Furthermore, robust cybersecurity protocols and a dedicated data privacy framework are non-negotiable to protect the integrity and confidentiality of sensitive judicial data. Finally, we recommend a pivot towards empirical research, mandating future studies to conduct rigorous impact evaluations and equity audits of pilot projects, which will provide the data-driven evidence necessary to guide the sustainable and equitable scaling of e-courts across Pakistan.

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