

Examining the Key Drivers of Successful e-Courts Project Implementation at District Judiciaries of Assam

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Abstract— The implementation of Electronic Court (e-Court) systems has gained significant attention in the judicial domain, offering numerous advantages in terms of efficiency and effectiveness. The objective of this study is to analyze and uncover the key determinants contributing to the effective implementation of the e-Courts project at District Judiciaries of Assam, India. A qualitative case study approach was employed incorporating an extensive literature review and structured interviews. The recorded data was analyzed using NVivo 14 software to identify the Critical Success Factors (CSFs) associated with the implementation of the e-Courts project. The study revealed 20 CSFs that significantly contribute to the efficient and effective implementation of the e-Courts project in District Judiciaries of Assam. These factors encompass various aspects such as technology, infrastructure, stakeholder engagement, training and capacity building, policy and legal framework, organizational support and change management. The outcome of this study holds great value for the successful implementation of e-Courts project not only in the District Judiciaries of Assam but also in the High Courts and other District Judiciaries across India. By recognizing and incorporating these CSFs, stakeholders can ensure the efficient utilization of the e-Courts technology and its seamless integration into the judicial system. Ultimately, this research aims to contribute to the enhancement of the effectiveness of the judicial system in India.

Index Terms- Assam, Data analysis, District Judiciaries, e-Courts, Gauhati High Court, NVivo14 software, Technology.

I.INTRODUCTION

In the contemporary age of globalization, characterized by swift advancements in technology that are reshaping numerous sectors, the judicial system is also actively adopting Information and Communication Technologies (ICT) to modernize and enhance the efficiency of its operations. Courts are no

longer untouched by the potential benefits of IT tools such as video conferencing, e-mail, and digitalization of records, as they strive to keep pace with the demands of the digital age [1]. The Indian Government's focus on establishing a "Green Court" reflects its commitment to leverage technology for a more eco-friendly and efficient judicial process [2]. However, despite these endeavors, the Indian Courts continue to face an enormous backlog of cases, with more than 50 million cases pending as of December 2022 [3]. The prolonged delay in resolving cases has led to a grim estimate that it may take approximately 466 years to clear the current backlog at the existing rate of hearings.

To address this challenge and usher in a transformative change, the concept of paperless Courts with digitalized case files and digital signatures has gained prominence.

Recognizing the potential of technology to revolutionize the justice delivery system, the Indian Government approved the e-Courts Mission Mode Project (MMP) in 2011. The e-Courts MMP aimed at digitalizing the operations of the Supreme Court, High Courts, and District and Subordinate Courts across the nation, alongside upgrading the IT infrastructure. E-Courts project is a promising solution adopted by the Indian Government to address the pertinent issues faced by the judicial system[4].

This research paper endeavors to explore and identify the critical success factors that play a pivotal role in ensuring the effective and efficient implementation of e-Courts project in the District Judiciaries of Assam. To achieve this, a comprehensive case study of the District Judiciaries of Assam has been undertaken, involving an extensive literature review and structured interviews. Utilizing the powerful NVivo 14 software, the study identified and validated 20 success factors that are crucial to the successful implementation of the

e-Courts project. These factors encompass various aspects including awareness, stakeholder engagement, training and capacity building, connectivity, e-filing, computerization, information, infrastructure, policy and legal framework, portal, organizational support, survey, vendors, funds, change management, district, data, delivery, Judges and Officers.

By shedding light on these success factors, this research aims to contribute to the understanding of e-Courts project implementation and offer valuable insights to guide future initiatives in enhancing the efficiency and efficacy of the Indian judicial system. The identified success factors can serve as a foundation for informed decision-making and strategic planning to propel the evolution of e-Courts system and transform the landscape of justice delivery in India.

II.LITERATURE REVIEW

The effective management of record keeping within public agencies is crucial for efficient operations and transparency. In recent years, the concept of e-Court or e-judiciary has gained significant attention as a means to enhance record management and facilitate judicial interaction with the public. This literature analysis aims to explore the existing research on e-Courts, focusing on the guidelines, technical challenges, and implementation strategies involved. Additionally, it seeks to assess the feasibility of replicating e-Courts system in District Judiciaries across India, with a specific reference to the District Judiciaries of Assam under jurisdiction of Gauhati High Court.

A hybrid model for electronic record management, emphasizing the need for a guideline or framework to effectively manage recordkeeping in public organizations was proposed [5]. Such guidelines provide a structured approach to implementing e-Courts systems and can serve as a foundation for successful integration.

The implementation of e-Courts initiatives based on the concept of sustainability and reducing paper-based procedures is being observed worldwide. One such example is Malaysia, where a fully functional e-Court system was introduced in 2011. This system incorporates various technological components such as Video Conferencing System (VCS), Case Management System (CMS), Community and Advocate Portal System (CAPS), Court Recording and

Transcription System (CRTS), and e-Filing [6]. These technologies aim to streamline court processes, enhance accessibility, and improve efficiency while reducing the reliance on traditional paper-based methods.

Similarly, the United Kingdom Government has focused on modernizing its courts and judicial procedures to enhance the speed, cost-effectiveness, and quality of service in the judicial system. This modernization effort involves leveraging the potential of Information and Communication Technologies (ICT) [7]. By incorporating ICT solutions, the UK Government aims to improve the overall efficiency of the judicial process, optimize resource utilization, and enhance the delivery of justice.

These examples demonstrate the global trend of adopting e-Courts initiatives to leverage technology for more efficient and sustainable Court operations. One of the primary challenges in implementing the e-Courts systems lies in establishing seamless integration with existing systems to gather the necessary data. The role of developing technologies in enabling Judges and Courts to interact with the public via social media and other digital communication platforms was highlighted [8]. This integration allows for more efficient and transparent communication between the Judiciary and the public, but it requires careful planning and technical expertise to ensure compatibility and data integrity.

The planning and design of e-Court in India began in 2003, with the computerization of all courts initiated in 1990 [9]. The Indian Government's implementation plan for e-Courts project, as outlined in the National e-Governance Plan (NEGP) as a Mission Mode Project, consists of three phases over a five-year period. Phase I involves hardware and software installation, training, staffing, and connectivity. Phase II focuses on infrastructure upgrades such as power backup, video conferencing, and Wi-Fi enabled courts, while Phase III involves Government process re-engineering, project management, and centralized facilities. It underscores the technical challenges involved in integrating e-Courts systems with existing infrastructure and the potential benefits of leveraging developing technologies for judicial interaction. The phased approach to e-Courts implementation, as outlined in the NeGP, provides a structured roadmap for successful adoption.

This research paper endeavors to bridge the existing gap in the literature by conducting an in-depth analysis of the e-Courts project in the District Judiciaries of Assam. By examining the successful implementation and challenges faced by the District Judiciaries under jurisdiction of Gauhati High Court, valuable insights can be gained to assess the potential for wider adoption of e-Court systems in the District Judiciaries throughout the country.

III. RESEARCH METHODOLOGY

This research paper adopts a systematic approach to examine the implementation of the e-Courts project at the District Judiciaries of Assam. The approach involves a comprehensive literature review and a well-organized interview process carried out at the District Judiciaries of Assam, gathering valuable insights and feedback from the participants.

The initial phase commenced with an in-depth literature review aimed at acquiring a comprehension of the prevailing knowledge and research concerning the implementation of e-Courts project. This literature review helped in identifying the key concepts, theories, and critical success factors associated with e-Courts implementation. Various scholarly sources, research papers, books, and reports were consulted to ensure a robust theoretical foundation for the study.

Following the completion of the literature review, a methodical interview was conducted at the District Judiciaries of Assam to gather valuable insights from key stakeholders involved in the implementation of the e-Courts project. The interviews focused on capturing the respondents' perspectives and comments regarding the crucial factors necessary for the successful and efficient implementation of the e-Courts project at the District Judiciaries of Assam. Moreover, participants were also asked about the challenges and obstacles they encountered during the implementation process.

To facilitate systematic and organized analysis of the collected data, NVivo 14 software was utilized. NVivo, developed by QSR International, is a qualitative data analysis (QDA) computer application software. This software aids in organizing, coding, and analyzing qualitative data, ensuring a meticulous and steadfast qualitative research analysis. By utilizing NVivo, the manual tasks involved in qualitative research were significantly reduced, resulting in

enhanced convenience, efficiency, and effectiveness of the analysis process.

The collected data, comprising both primary (interview transcripts) and secondary sources (literature review findings), was imported into the NVivo software for the coding process. The software facilitated the categorization of data based on the generated themes from the collected information. It also assisted in establishing relationships among various themes emerged from the interviews, enabling cause-and-effect analysis.

The interview questions focused on identifying the key success factors for the effective and efficient implementation of the e-Courts project. The respondents were asked about their experiences, insights, and recommendations regarding the implementation process. The data analysis, conducted using NVivo and the coded data, ultimately led to the identification of 20 success factors for e-Courts project implementation at District Judiciaries of Assam and the Gauhati High Court.

It is important to note that while the study primarily focuses on District Judiciaries of Assam, the findings and results can be applicable to High Courts and other District Courts across the Country. The identified success factors have broader implications for the implementation of e-Courts project in the Indian judicial system.

IV. CASE STUDY- DISTRICT JUDICIARIES OF ASSAM

Gauhati High Court, located in Assam, India, was established in 1948 after the formation of the state of Assam. It serves as the highest judicial authority in the State and comprises a total of 30 judges presently. Recognizing the need for modernization and efficiency in the judicial system, Gauhati High Court embarked on the journey of implementing the e-Courts project.

In 2010, the District Judiciaries of Assam initiated the e-Courts project, embracing technology to streamline its operations and enhance accessibility to justice. A key component of this initiative is the well-equipped server rooms, equipped with robust internet connectivity. This infrastructure enables seamless communication and information exchange within the court and with external stakeholders.

The District Court of Assam serves as an essential judicial institution comprising a total of 34 district courts across the state. Its primary objective is to administer justice at the grassroots level and resolve a wide range of legal disputes. As of the latest statistics, the court faces a significant caseload, with a total of 101,174 civil pending cases and 366,700 criminal pending cases, making the total pending cases amount to 467,874 [3].

Among these cases, the Dima Hasao District Judiciary has the lowest number of pending cases, standing at 664. Conversely, the Kamrup Metro District Judiciary bears the highest burden with 116,719 pending cases. Despite the challenges posed by the substantial caseload, the District Court of Assam is dedicated to ensuring fair and timely justice delivery to its citizens [3].

The District Court of Assam remains committed to upholding the principles of justice and safeguarding the rights of its citizens. Through diligent efforts and dedication, the court continues to play a pivotal role in maintaining law and order and promoting a just and equitable society in the state of Assam.

Overall, Gauhati High Court's journey towards e-Courts project implementation in the District Judiciaries of Assam serves as a model for other judicial institutions, emphasizing the significance of leveraging technology to enhance efficiency, transparency, and effectiveness in the legal system.

V. CODING ANALYSIS

The coding analysis for this research paper was conducted using NVivo 14, with data sourced from two primary sources: audio recordings of interviews and relevant literature on the e-Courts system. The analysis involved creating nodes and extracting themes from both the transcript data and literature review.

Nodes were created to categorize and organize the data. Similar nodes were grouped together under one theme, while different nodes were placed in separate themes. This process helped in organizing and structuring the data for analysis.

The data was then analyzed, and word count and frequency of occurrence were exported. Query tools were used to adjust findings to exact or similar matches, and the word display was adjusted to 500 for each of the 20 identified Critical Success Factors

(CSFs). Table 1 presents the maximum occurring words during the interviews and literature review, along with their weighted percentages. Terms such as internet connection, training, e-Filing, court and electronics were found to be commonly and frequently used. In contrast, terms like survey, vendors, feedback, power and note were used less frequently by the judicial members. This indicates that internet connection, computer, training, and software are major concerns for the adoption of e-Courts project at the District Judiciaries of Assam.

Table 1: Word Count and Frequency

Word	Length	Count	Weighted Percentage (%)
Connectivity	6	408	1.39
Training	8	299	1.02
e-Filing	9	294	1.00
Court	5	273	2.30
Electronics	7	218	0.74
Gauhati	8	212	0.72
Computerization	15	205	0.70
System	6	199	0.68
Cis	3	197	0.67
Lawyers	7	192	0.65
National	8	189	0.64
Information	11	180	0.61
Service	7	177	0.60
Portal	8	162	0.55
Judges	8	156	0.53
Average	7	152	0.52
District	8	133	0.45
Application	11	122	0.42
Data	4	122	0.42
Delivery	8	118	0.40
Source	6	104	0.35
Infrastructure	14	100	0.34
Time	4	95	0.32
Number	6	94	0.32
Officers	6	88	0.30
Awareness	9	80	0.27
Satisfaction	12	74	0.25
Work	4	72	0.25
Finance	8	71	0.24
Activities	10	69	0.24
Complexes	9	66	0.23
Preparation	11	65	0.22
Process	7	65	0.22
Survey	6	62	0.21
Vendors	3	59	0.20
Feedback	5	54	0.18
Power	8	50	0.17
Note	11	48	0.16



Fig 1: Hierarchy Chart of Nodes

Figure 1 illustrates the hierarchy chart of nodes, where larger square areas represent nodes with a higher number of coding, and smaller areas represent nodes with a smaller number of coding. This visual representation helps understand the distribution and importance of different codes.

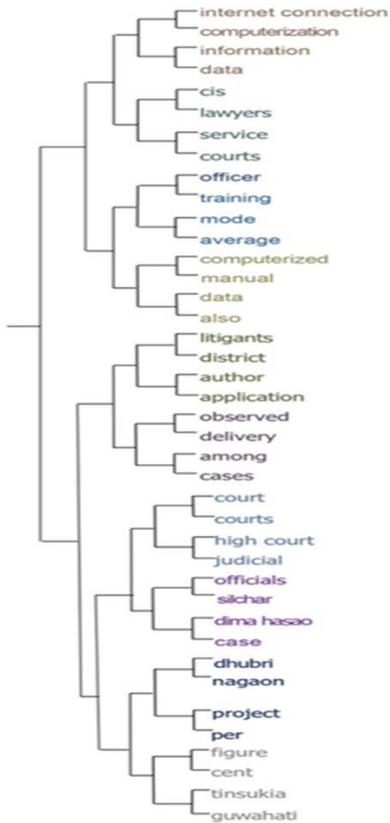


Fig 2: Cluster analysis of codes

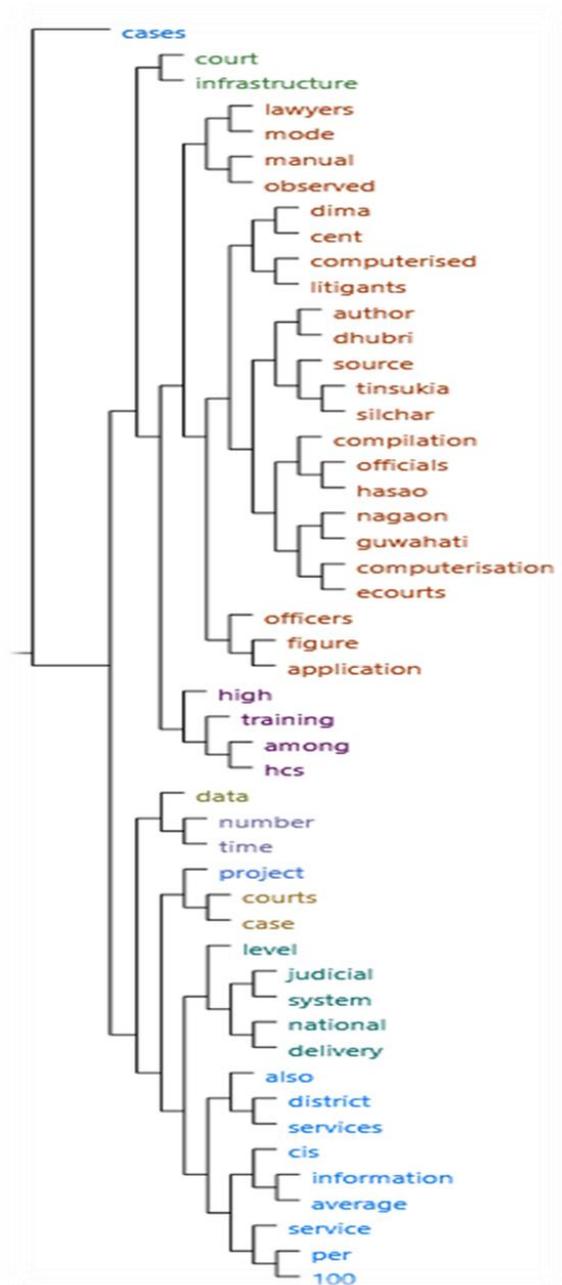


Fig 3: Nodes cluster Analysis

The cluster analysis of codes conducted for this research paper provided valuable insights into the relationships and patterns among different codes. Figure 2 illustrates the clustering of codes, highlighting the grouping or similarity of codes assigned by different nodes.

From Figure 2, it can be observed that codes related to internet connection, computerization, information, and data are grouped together or coded similarly by different nodes. This indicates a close association or

similarity in the concepts and themes represented by these codes. The proximity of these codes suggests their interrelatedness within the context of the e-Courts project implementation

Furthermore, Figure 3 presents a clustered analysis of nodes based on the content contained within each node. Nodes that are closer to each other, indicating they belong to the same parent category, tend to have a higher number of similar codes. For instance, nodes such as court and infrastructure exhibit mostly similar codes, reflecting a shared thematic focus or related concepts. Similarly, the computerised and litigants sections also display a similar clustering pattern, suggesting their thematic proximity.

This analysis provides an organized and visual representation of the relationships and patterns among the coded data. It helps in identifying the interconnections and commonalities between different codes and nodes, contributing to a deeper understanding of the research findings.

VI.RESULTS AND ANALYSIS

The results of the coding and data analysis reveal several key factors influencing the successful implementation of the e-Courts Project. The analysis indicates that internet connectivity, awareness of e-court initiatives among stakeholders, and training are the most important factors. These factors enable the members and litigants to use e-courts system conveniently.

From the transcripts of the respondents, it is evident that the infrastructure of e-courts system is a critical factor. Additionally, both the clients and judicial staff should possess proper computer knowledge for effective e-courts system usage. On the other hand, technology, connectivity, and infrastructure upgradation are identified as basic requirements for successful e-Courts project implementation. The absence of sufficient infrastructure, innovative technology, and infrastructure upgradation poses challenges to the accomplishment of e-Courts project. The research findings highlight that the state of Assam, faces challenges related to poor infrastructure in terms of internet connectivity, techno-legal expertise, and the absence of comprehensive policies and guidelines, which are crucial factors for establishing e-courts system. Respondents also emphasized the ongoing process of converting paper

documents to digital format for proper e-courts implementation. They acknowledged the increasing incidents of cybercrime and online threats, underscoring the importance of trust, security, and authentication measures. Furthermore, the analysis reveals that factors such as governmental/judicial will (leaders' motivation and support), project administration (proper management), and project monitoring (regular monitoring of the process) are essential for the establishment of the e-Courts system. The implementation of e-Courts project is expected to enhance personnel's responsibility and credibility, thereby promoting greater accountability among Staff and Judicial Officers, as mentioned by one of the respondents. The introduction of e-Courts project is likely to streamline processes, reduce manual errors, and establish a more transparent and efficient workflow, ultimately contributing to increased accountability and trust within the judicial system.

VII.CONCLUSION AND RECOMMENDATION

The Indian Government's focus on establishing "Green Court" initiatives demonstrates its commitment to adopting sustainable practices and leveraging technology for a more eco-friendly and efficient justice system. The e-Courts Mission Mode Project (MMP) approved by the government reflects the recognition of the transformative power of e-Courts in addressing the backlog of cases and improving overall judicial efficiency.

The research findings emphasize the significance of factors such as internet connectivity, awareness among stakeholders, training, infrastructure, technology, connectivity, and infrastructure up gradation for the successful implementation of e-Courts project. Challenges related to poor infrastructure, cyber threats, trust, security, and authentication must be addressed. Additionally, factors like leaders' motivation and support, project administration, and project monitoring play vital roles in the establishment of e-courts system.

In conclusion, based on the analysis of the literature, it becomes evident that e-Courts project hold great promise in improving the efficiency and accessibility of the judicial process. Through the strategic utilization of technology and effective resolution of the challenges identified, Courts have the opportunity

to expedite case resolution, alleviate administrative burdens, and enhance the overall access to justice.

This literature review sets the foundation for further research and exploration in the field of e-Courts system implementation. It provides a comprehensive understanding of the current state of e-Courts project and serves as a basis for future studies, policy development, and decision-making to enhance the effectiveness and efficiency of the judicial system.

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