Modernization of Indian Judiciary with a Goal to Reduce Backlog of Court Cases

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Abstract

This paper enumerates the efforts made by the Supreme Court of India and proposes a road map of how the existing Information and Communication Technology (ICT) can help Indian judiciary to evolve as more technology driven with increased transparency. The main drive behind the efforts made by the Supreme Court and the funds released by the Government of India is to enhance the rate of justice and reduce the piling up of huge number of cases in the courts in India. Various steps have been taken to utilize the power of the Internet to ease the life of the litigant, that is targeted to help the poor. The e-Courts project has led to the development of National Judicial Data Grid, scanning, digitization and digital preservation of case records, enabling video-conferencing for courts and jails, etc.

This paper also provides insights in the potential of ICT to be able to go far beyond than what is proposed in the e-Courts project. The e-Courts project has mainly provided a platform for the consolidation of the ICT infrastructure in the courts. In order to be able to use all this computing machinery efficiently, more services, beyond as envisaged in the e-Courts project have to be developed.

I. Introduction

"Justice delayed is justice denied." said the British prime minister William E. Gladstone. This statement is very much true for Indian Judiciary. Almost 27 million cases are pending in Indian courts, of which roughly 9% are lying for more than ten years [1] [2]. There is a very famous saying in India that the litigant dies but the case remains alive. There is no reason to take proud in such reputation and hence the Indian Judiciary has started, on the initiatives of the Hon'ble Supreme Court of India, various projects to take help of the Information and Communications Technologies (ICT) in the judicial sector to speedup the disposal of cases. As evident, it is important, to understand the potential reasons for the delay before

seeking any solutions on the problem. Research needs to be conducted to find the current efficiency compared to some optimal benchmark. As of now, no such benchmark exists.

One of the reasons for pendency in Indian courts is high citizens to judge ratio. According to a study, there is one judge per 73,000 citizens [3]. The same study also reveals that in most of the High Courts of India, on an average a judge spends around 2.5 minutes to hear a case and about 6 minutes to decide a case. This clearly implies that human capacity is a bottleneck in the battle against slow justice as the judges are outnumbered by the number of cases that they have to handle. This puts a pressure on judges and is known to be one of the primary reasons for mental stress of judges [4]. Indian judiciary is known to work hard and clear lots of cases per year but the sheer number is beyond the human capacity of judges. The judges are not super-humans and thus apart from appointing additional judges, more scientific ways of fast justice for common human of India are to be sought so that the cases can be decided in a timely manner.

The Hon'ble Supreme Court of India, through its e-Committee [5], has taken e-Courts initiative in 2005 to implement Information and Communications Technologies (ICT) to speedup the process of deciding cases as well as to provide a more transparent and easy access to justice [6]. The term e-Courts have been coined for the courts that are equipped with modern ICT devices. For example, the judges are provided with LCD touch screen machines to write the cases and comment upon them. There are screens and projectors available connected through the local area network (LAN) where it is possible for a lawyer to present the case using a laptop. There are electronic boards available in the court premises as well as online to display the queue of case numbers pending to be heard in the courts. The delay in reaching summons is one of the big reasons for judicial delay. Summons are being sent using SMS as well. Overall, many mechanisms for direct access of information to the litigant are being deployed. There are also provisions for video conferencing between jails and the courts as well as between courts and courts. Apart from creating a physical ICT infrastructure for the courts, many litigant centered services like e-filing of cases, bringing reforms by training judicial officers, digitization of legal tools, statute laws and case laws, digital archives of cases, etc. are also being carried out.

Appreciating the steps taken by the Hon'ble Supreme Court of India, the then President of India, Dr. Abdul Kalam Azad had delivered an influential speech, revealing the potential of e-Judiciary, at the event of launching of computerization of courts by the Supreme Court [7]. e-Committee was created as the

apex body to implement the project at the national level.

While much work has been done in last ten years since this initiative, a lot remains to be done as far as the applications of computer science are concerned [8]. e-Courts should lead to e-Judiciary by judiciously interconnecting various organs of the society, government, institutions and citizens providing seamless flow of information between the above mentioned organs of democracy. The Hon'ble Supreme Court has already laid down a solid foundation that allows a greater potential for computer scientist to be exploited.

A great leap in providing free access to the judicial information was provided by the implementation of the National Judicial Data Grid (NJDG) [2]. Anyone can view the status of the cases that are pending and information related to past hearings that have taken place. The National Judicial Data Grid (NJDG), an important outcome of the e-Court projects, has data of almost 25 million pending cases. This data can be studied in many ways to come up with the methods to increase the rate of disposing the cases in a timely manner. True, having just the data is not sufficient, it needs to be polished to reach a state such that it can be used to help the judges in the process of making judgments. The current state of art is a bit far from this ideal goal.

To aid to the efforts made by the Supreme Court for making the data publicly available, use of big data analytics have been suggested [9]. Machine learning and natural language processing can be used to find the similarity in the cases that are pending. This can help in a faster disposal of cases as similar cases can be heard at the same time. All the judgments that have been delivered by the Supreme Court and various High Courts are already online [10]. Once similarity between cases can be found, it becomes easier to decide them which will ultimately speedup the process.

The rest of the paper is organized as follows: Section II discusses similar approaches used for judiciary throughout the globe. Section III provides an overview of the e-Courts project of India, Section IV gives glimpse on the National Judicial Data Grid, Section V proposes new directions that can be taken to enhance the use of the platform created by the Supreme Court. Section VI concludes the paper.

II. Relevant Global Initiatives

Many studies have been conducted and initiatives taken throughout the world to use ICT in order to enhance the functioning of government bodies [11] [12]. e-Judiciary platform for a rural community in the Eastern Cape Province of South Africa is described in [13]. The initiatives in Europe can be found in [14] and role of ICT in Malaysian judicial system is discussed in [15]. All the above studies revolve

around the similar issues as we have discussed in this paper but the number of pending cases in India is a different problem not covered by any of the above studies. The sheer volume of cases is so much that it is almost impossible to cope without use of advanced technologies.

Open government initiatives by Kenya are discussed in [16]. ECLI project of the Europe [17] is comparable to the Indian projects that we are going to discuss in this paper. The greater issues with implementation of ECLI is that multiple governments have to collaborate to make it a reality. On the other hand, all of e-Courts project in India under one authority so it is relatively easier administratively.

III. The e-Court Project

As briefed before, the main objectives of the e-Courts project is to bring more transparency in judicial matters and to bring the judiciary closer to the common litigant of India. The common litigant of India should be able to access the judicial services without incurring the huge cost that they have to bear today, despite being poor. According to a survey [18], 90.1% of the litigants have annual income less than ₹300,000 (roughly US $4500). Thus, from the beginning, the e-Court project has concentrated on citizen centric services to reduce the inconvenience occurring to the common human of India due to judicial procedures. We enumerate some of the deliverables of the project. Many of them are also listed on the e-Court website [19].

1) Citizen Centric Service: This is the most important objective. The goal is to provide efficient and time-bound citizen centric service delivery. The citizens should be able to feel the part of the system. The information that they require and which concerns them should be available to them without any hassle, including timely justice. As elaborated on the website of a civil society organization that undertakes research and activities to promote accountability and better governance in India, Daksh [20], the ultimate goal should be to reduce pendency to a level that can be considered acceptable by the most important constituent of the litigation process: the litigant.
2) Decision Support Systems: To develop, install and implement decision support systems in courts, i.e., proper mechanisms need to be developed to use the ICT infrastructure in the court that support in dissemination of judicial decisions efficiently. For example, the judgments are to be uploaded to the cloud so that they can accessed publicly. In order to make sure this happens, a uniform case nomenclature must be designed and the judgments must be uploaded on time. This will not happen automatically. The system is supposed to aid in this process too.

3) Transparency of Information Access: One of the biggest challenges that the judiciary in India, or for that matter any where in the world, faces is to show it is transparent. As mentioned in the national policy itself [6] that those who are beneficiaries of the current non-transparent system may resist the changes. Automation of certain tasks, in particularly the data that is made available publicly is the key to provide transparency of information access to its stakeholders, including the litigant. This will ensure that no human, beneficiary or otherwise, is involved, achieving greater transparency.
4) Justice Delivery System: To enhance judicial productivity both qualitatively and quantitatively, to make the justice delivery system affordable, accessible, cost effective and transparent. As discussed before, a common litigant in India is very poor and generally cannot afford the expense of the justice delivery system. In order to have the fruitful impact of the e-Courts project, the whole system has to be made accessible and transparent to the general public. This will increase the confidence in the system.
5) Court Management and Case Management System: Due to sheer population, the Indian Judiciary faces lots of problems, including the management of cases and the courts themselves. It is envisaged to make policy for managing case loads in the e-Court project so that effective Court Management and Case Management can be administered. To this end, Case Information System (CIS) is being developed to manage the court cases centrally.
6) Interoperability and Compatibility: Indian Judiciary is in a process of making most of its organs modern. They are supposed to be more transparent, automated to some extent. All such softwares may be designed by different teams with different mindsets. It is crucial to provide interoperability and compatibility with National Case Management System; Inter-operable Criminal Justice System, National Legal Services Authority (NALSA) and other programmes to enhance the quantity and quality of Justice Delivery System.
7) Improving Legal Awareness: According to [18], more than 80% of the litigants have not gone to a university or a college. This amalgamates with the poverty and leads to a completely ignorant human being with respect to the rights they possess. One of the achievements of the e-Courts project will be to bring the judicial procedures closer to common man, directly accessible from reliable sources, rather than depending on the man-in-the-middle who may take their unfair advantage.

IV. National Judicial Data Grid

The National Judicial Data Grid (NJDG) is a monitoring tool that can be used to identify, manage and reduce the pendency of cases. It provides real time data for the number of pendencies. Figure 1 provides a snapshot of NJDG as on July 29, 2017. It can be seen that lots of information is already available to the litigants as well as to general public. One can see the cases disposed and filed in last month. It can be noted that separate statistics are shown for the cases that are more than ten years old. The disposed cases are also classified into civil and criminal cases. The registration status of the cases are shown as well as the pending cases are shown. The total pending cases, roughly 25 million, are classified in four categories listed below and Figure 1 shows an instance of the percentage of such cases on July 29, 2017.

1) Less than two years (46.10%)
2) Over two years (28.72%)
3) Over five years (16.13%)
4) Over ten years (9.05%)

Classification of pending cases by women and senior citizens are also available. Monitoring Alert (not visible in the figure shown here), is also shown in which the cases listed on the day of viewing and the total number of courts/judges are also shown.

In the top left, there is a provision for navigation by states and union territories. The portal then shows the corresponding data as described above for 32 states and union territories in India.

As shown in Figure 2, it is possible to see the pendency of cases at a lower granularity. In this case, the pendency for various districts in the state of Himachal Pradesh are shown, as on July 29, 2017. We have chosen Himachal Pradesh for this particular figure because it has lesser number of districts and can be easily seen in the picture.

NJDG will be required to improve over time. In order to really help deciding the pending cases, more classification than the current one is required. Various machine learning and clustering approaches can help in achieving this goal as discussed in the next section.

V. Improving the State of the Art

The previous sections have discussed the initiatives taken by the Supreme Court of India to bring judicial reforms. The central entity to such reforms has been the litigant. While the initiatives of the Supreme

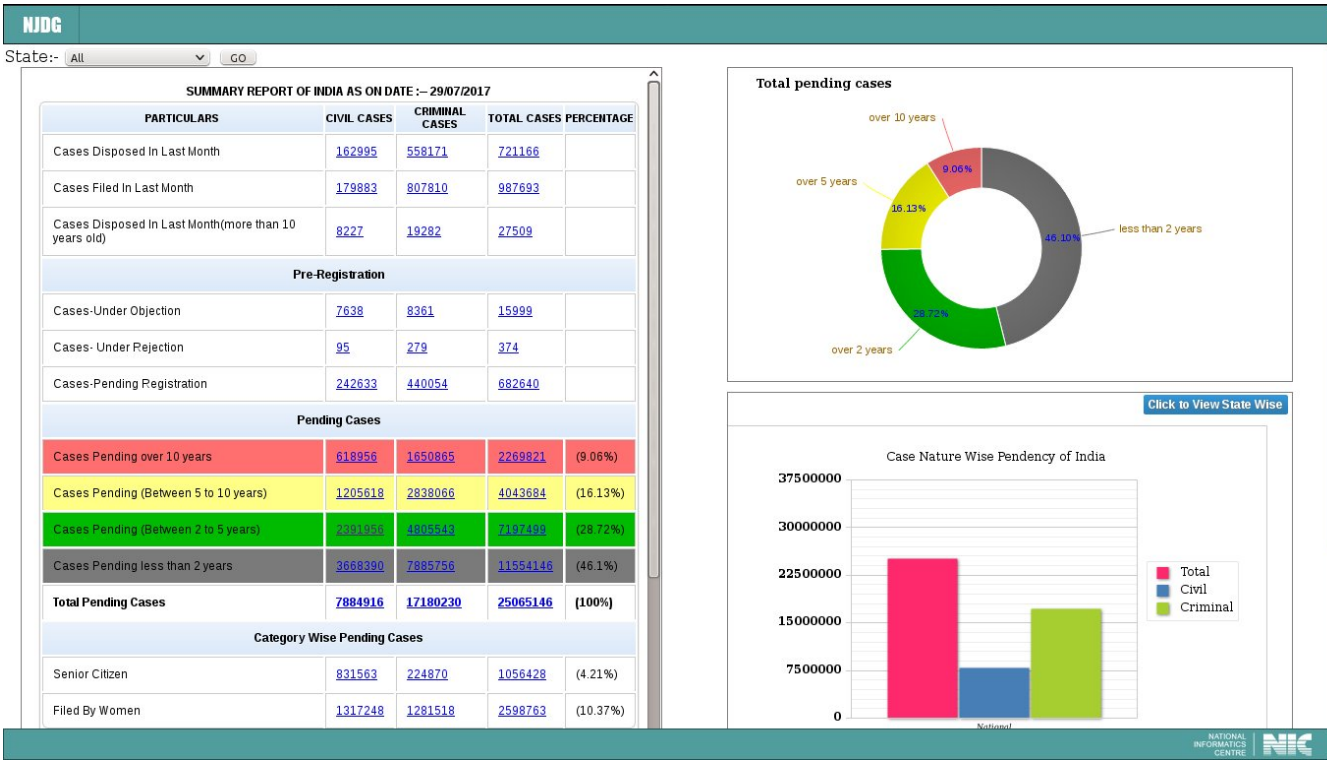

Fig. 1. A snapshot of the National Judicial Data Grid [2] as on July 29, 2017.

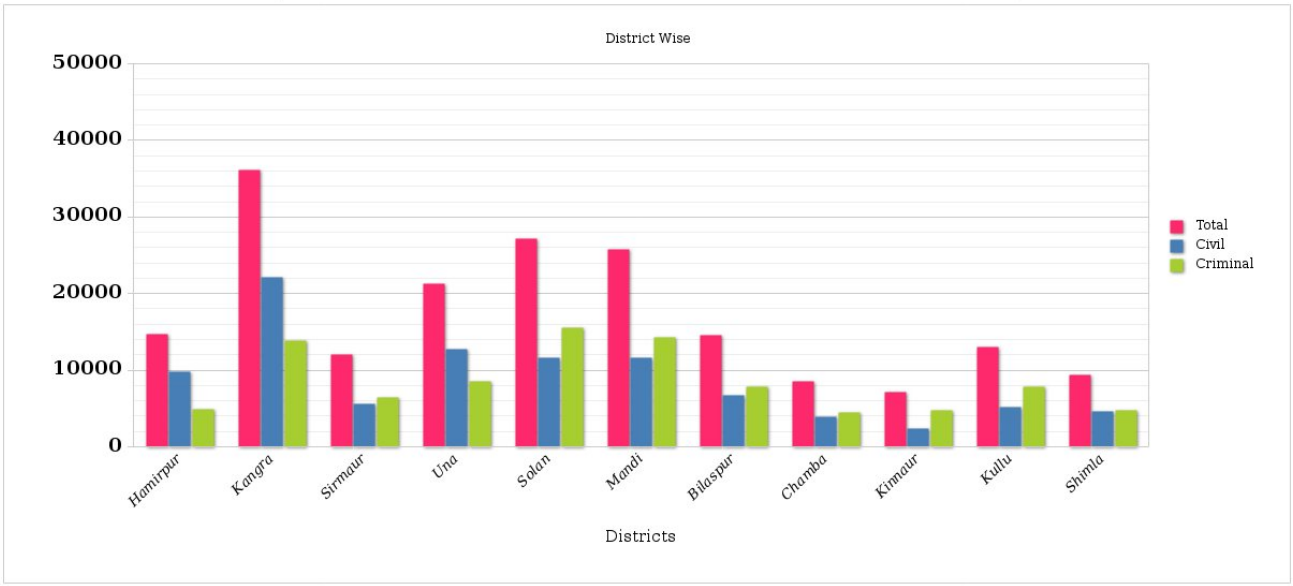

Fig. 2. A snapshot of the district-wise pending cases in the state of Himachal Pradesh as on July 29, 2017.

Court are extraordinary in their own respect, they may lead to underutilization if more research into the same is not done. To this end, in this section, we elaborate how computer science can help achieve the ultimate goals of the Supreme Court's initiatives.

Some of the areas where computer science can be of great help to the judiciary are enumerated.

1) Design of Efficient Algorithms: We already know from the studies conducted that a lot of time is wasted in proceedings and hearings that do not take place on the scheduled day. For example, as available on NJDG website roughly 541,000 cases were listed on 29th July in 18,152 courts. However, not all of them get a chance of hearing. If all the listed cases were heard, the pendency will reduce drastically. In fact, according to a study (though not representative and at a very small scale) conducted in [21], only 6 out of 50 listed cases were heard. This is due to the time spent in adjournments. Hence, a better scheduling of the cases is required so that the timely disposal of the cases can be maximized.
2) Refining and Polishing NJDG Data: National Judicial Data Grid is already a big leap in the presentation of data on the pending cases. However, it can be taken to the next level where it presents even more data. For example, the classification of cases, as of now, is very naive. Only two kinds of cases are listed in NJDG data, civil and criminal. The data can be classified in a much better manner to provide more insights on pendency. The cases can be classified based on relevance with the similar judgments as well as the similarity between the pending cases.
3) Visualization of Similar Cases: Creating a graphical user interface (GUI) which will help visualize the relationship between related cases will really be a crux of all the solutions listed above. If the related cases can be visualized then they can be scheduled together, saving a lot of time and effort of all the stakeholders.

Apart from the applications of traditional computer science like algorithms, there is a need of machine learning, in particular, natural language processing is likely to play a key role. For example, machine learning can be used to group cases that are similar in nature and can be disposed off by scheduling them together. This will not only save the time of a judge but it will also ease the process resulting in reduced stress on judges, making them more efficient.

While the classification of cases is already done, it is very naive. The courts have divided the types of cases but this is not sufficient. Even if 25 million cases are divided into 20-30 classes, it does not solve the problem. Mechanisms have to be designed to find the similarity such that solving one case should mean multiple of them are solved by citing the already decided cases, if available. Or mechanisms have to be designed to find the articles of different acts and the constitution itself to find relevant articles.

We acknowledge that finding whether a pending case is related to some existing judgment is going to be a non-trivial task. To this end, natural language processing is likely to play a big role but such kinds of works have already begun. For example, [22] studies applications of algorithms to law, [23] studies the readability of legislative sentences using machine learning. Such techniques can be enhanced and deployed to achieve our goals but exact details are left as future work.

VI. Conclusion

It is known that ICT can only assist and the true initiatives have to come from the judiciary [17] and also that achieving progress in India can be difficult unless judiciary is efficient [24]. On the initiatives of the Supreme Court of India, Government of India is investing huge amount of money modernization of the courts in India. Under the e-Courts project, the courts in India are to be equipped with the state of the art computing machinery. Hence, Indian Judiciary has already taken substantial steps on its part. There is still, however, a long way to go as millions of pending cases are to be disposed properly and timely without compromising on the quality of justice. The mechanisms have to be so designed such that not only the current backlog of cases reduces but also that no piling of the newly registered cases occur. e-Courts project and its subsidiary projects are a big leap in this direction and it is very much likely that they will start producing the fruitful results in near future. At the same time, the present implementation leaves a lot of room for the improvement. In order to improve upon the state of the art, relatively new computer science areas like machine learning, natural language processing, etc can be used to better utilize the ICT infrastructure procured by the courts.

VII. Disclaimer

The views contained in the paper are the reflections of the author's research. These views are neither representative of nor endorsed by the Department of Computer Science and Engineering or of LNMIIT Jaipur.

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