Lawyers' Work Management Through Digitization

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Abstract: With the technical renaissance, every single process has become automated by shifting from the manual ways into the digitization. This research emphasizes the digitization of business processes within a law chamber. The main issue that leads to propose an automated system for lawyers is the bulk of unorganized workloads and file cabinets. The system is to be developed with functionalities such as; maintain separate client folders depending on each clients' case category. Furthermore, the system is to embed the system with the functionalities of time reminders and alerts, chatbots, saved templates, and e-versions of the reference books. The aforesaid all the capabilities are to be maintained in cloud storage enabling always-on access through the application. But, organizing the workloads and file cabinets is not sufficient to optimize efficiency and effectiveness. It is useful to provide search queries to past similar cases and their results that have been handled. This research is to emphasize that the digitalization of the work at a lawyer's chamber will reduce the number of physical interactions and also will optimize the efficiency and effectiveness of the manual process of working patterns.

Keywords: Digitization, Lawyers, Case Files, Lawyers' chamber, Automation, Attorney, Advocate

Introduction

The lawyers pay an important role in the Sri Lankan government sector in balancing the truth and justice to assure the social equilibrium. Whenever any citizen in the world is faced with an injustice, that person has the responsibility to question his or her rights against the misbehavior or the illegal act of the other party. So, lawyers, without any colour, race, or nationality discrimination they try their optimum to do justice for them. Though they use all their efforts to win the justice from there part there is no digitalized proper way of managing their work stuff, for lawyers to work effortlessly. It is that they must waste a lot of their time and effort to file a case by filling all the accurate documents into separate files. Whenever any client intervened with a case, the respective lawyer has to open a file for that case and have to collect and then file all the information; documents; shreds of evidence; proceedings all these things manually. Moreover, if any change occurred in those documents the lawyer must find the files one by one through the file rack, to take the correct file out of from the rack, and to do each update manually. Furthermore, if a lawyer is handling many cases of a single client then the lawyer must maintain several files. So, this management of multiple files for a single client makes the lawyer's work complex and more tiresome. If the client requested an update the lawyers must go through all the files of the respective client to find which file is that the update should be done, by reading the case details. In addition to that, the manual management of the lawyer's business process retains them in the traditional era and makes everyone busy updating and keep reminding or noting down the file numbers; next court dates; status, etc.

So, this research aims to emphasize a file management system for lawyers to manage their client's works by storing their files in cloud storage enabling access to their files at

any time at any place when they are in need very simply and easily. Through this system, the clients can maintain separate files for each client and even store multiple cases of the same client.

A.Objective

The objective of developing this system is to embed the process of digitalization into the field of lawyers, to help lawyers to optimize their work efficiency by saving time and eliminating the extra efforts to do the same thing for times.

The new system will replace their manual work with technology upgrading their quality of work. Along with that, this system will automate the processes more efficiently and effectively than the traditional filling methods.

In this paper, section one, section two, section three, section four, section five, section six and section seven are comprised of Introduction, Literature review, Methodology, Evaluation, Conclusion, Acknowledgement, References respectively.

Literature Review

Though the Sri Lankan lawyers have not yet stepped into the means of using applications or any other software to manage their paperwork more efficiently using a file management system, in the technical renaissance, some foreign lawyers have touched the step of digitalization. There are many systems in the application in foreign law firms. Namely, those systems are "Cilo", "MyCase", "Filevine", "E-File Cabinet", "CaseFox", "App4Legal", "Best Case", "Pro Law", etc.("Best Legal Case Management Software | 2020 Reviews of the Most Popular Tools & Systems," n.d.) But these software applications are not much applicable for the Sri Lankan context lawyers. Mainly because their functional requirements have targeted on billing and invoicing, expense tracking and time tracking. But for a Sri Lankan

lawyer and a client, the fee for the lawyer depend upon the lawyer's practiced patterns and the relationships they have in between the client and the lawyer. But with the proposed system the major functionality is targeted on document and case file management as in a Sri Lankan law firm the burning problem is the inefficiency and the ineffectiveness with the bulks of files loaded in narrow office rooms.

When considering each software that has mentioned above, each has its unique features. Sometimes one or multiple applications have been adopted with the common unique features. When considering the applications, "Clio", "MyCase", "Filevine", "e-FileCabinet", "CaseFox", "App4Legal", "Best Case", "Pro Law", they possess common features such as document management, time tracking, online payments, invoicing and billing, tracking of expenses in parallel to the time usage, integration of Dropbox, Microsoft office excel plugin, auditing, etc. and it has reviewed in the following, "Filevine - ABA Legal Technology Buyers Guide," n.d., "Clio vs eFileCabinet Comparison | GetApp®," n.d., "App4Legal vs Best Case vs CaseFox vs ProLaw - 2020 Feature and Pricing Comparison," n.d.. But in addition to the above-mentioned features, except billing, invoicing, time and expense tracking, the proposed system is to be built with more other features such as chatbot, saved templates, Microsoft Word plugin, alert system, a link connecting the advocate and the lawyer, calendar reminders, cloud access and access to e-reference books.

Other than the above reviews and comparisons on the systems on usage many other technical experts have proposed to develop an information system for law firms. In the paper of T. du Plessis and A.S.A. du Toit has emphasized the above statement clearly, "Several studies have shown that in the most recent years' advances in the ICTs are

transforming the methods that lawyers use to access, retrieve and process information to deliver legal services to clients"(Du Plessis & Du Toit, 2005). Moreover, that paper points up that the lawyers need organized access to the information generated concerning their clients while they are active in handling the case. Not only that, but the organized arrangement of the previous notes and case information should also be easily accessible at any time since those can be useful in other cases(Du Plessis & Du Toit, 2005). According to the search results, some web applications have provided the service of file management for the lawyers and the most commonly used, popular software for managing lawyer's work are; "MyCase", "Clio", "eFileCabinet", "File vine", "Actionstep" etc.("Clio - ABA Legal Technology Buyers Guide," n.d.). According to the research ideas by "West" and "Thomson", the document management systems allow lawyers to reuse some of their products. Also, it has said that DMS (Data Management Systems) is a better way to optimize work efficiency and effectiveness (Knowledge-management systems for law firms, 2003). Not only that, but the authors, Taylor and Aschner have also emphasized that "a file management system should be more functional rather than being organizational" (Aschner, 1986). Alok Mishra, Deepti Mishra (Mishra & Mishra, 2011) further emphasized that the digitalization of the work at legal firms makes it more cost-effective, time-saving and especially adds competitive advantage among the busy and unorganized work patterns of others. In the paper, "Method and systems for performing legal services over the internet" (Classification, 2002) described a system where all the documents related to each client is stored in a cloud, where that lawyer and the related client can access their documents, review and update easily and efficiently at any time from any place they are. So, with these features nowadays Sri Lankan lawyers have played more attention

to change into the new technology. It is that according to the "Van Ooarscot" and "Irene", the clerks and the judges who have practiced their work to be carried out with the paperwork manually have confronted with the digitalization of courts' work. So, according to that paper, to satisfy the users of the system, the system should provide fair functionalities that will support the lawyers to improve their quality of work while optimizing time management than before(Van Oorschot, 2014). In the context of this file management, "Aschner" in 1989 has supposed a file management system with an approach to develop a generic file classification that covers broad subject areas and differentiates between file classifications based primarily on retention requirements. Also, they have emphasized that it will enable the users to add subject details to individual file folder labels to meet local retrieval requirements and will save money and easier to master than detailed schemes(Aschner, 1986). Beyond the above mentioned main objectives of file management, the lawyers face a lot of challenges during their period of working as an attorney. The lawyers have to face situations like re-filing the cases they have handled many months or years ago. Sometimes it may be not a case of much longer, but the details may be missing or unavailable or difficult to find due to the huge bulks of file cabinets placed in the chamber. Therefore, the proper storing and permanent security for the case files are important as those points may be wanted in future cases as pieces of evidence. The "Evans, Nina Price, James" in their paper they have highlighted the need for new technology to be applied in the law firms. According to them, there is more pressure in law firms and the proliferation of legal information assets. Actually, "information overload and merely identifying and managing these assets becomes a challenge to legal firms (Evans & Price, 2017). Advances in technology are provoking law firms to embrace information

management systems and technologies, such that storage capacity in the cloud allows customer, case matters and other firm information to be stored centrally and accessed from work or home with significant cost savings, device mobility enables lawyers to access digital documents in court"(Evans & Price, 2017). In the paper, "legal Files management using big data" the authors, Aarthi, Siddharth, Athreya, & Balaji Aarthi, Siddharth, Athreya, & Balaji, (2018) have paid their attention to the above-mentioned issues and they have supposed the concept of big data mining with the use of the "Hadoop" approach. According to their ideas they point out that "The technical advantages of organizing such data can be helpful not only in certain high-profile cases where a particular order or organization must be present at the most basic level, to get information that may be the turning point that is needed to win a particular case but also assist as an alibi for any vocal statements given during a particular session and also Lawyers, as well as lawmakers, will be able to successfully get facts in the argument without any Data Unavailability" (Aarthi, Siddharth, Athreya, & Balaji, 2018). According to the (Aarthi et al., 2018) as the first step, the raw materials such as case details or files containing every aspect of a particular case are collected and organized in a structured way by dividing into groups, into subdivisions based on their case types and then those files have been analyzed using the Structured Query Language and using some basic Apache spark programming. Now after the analysis unprocessed data is then stored in a cluster. The processes of analyzing data are recorded step by step in a separate database called metadata. This data can be used for back trend analysis and also can be used as backup data in case of data loss. Along with the collection of the raw data, storing, organizing and updating the security of the data is also essential as each data is a "confidential set of information of one

another about their life matters". Furthermore, the tacit knowledge of lawyers should be recorded so it will ease the work of lawyers in reusing the points in the future precedents of the future cases or may need in their daily cause of work. It is that "Experienced lawyers create forms, which include comprehensive annotations and practical comments that serve as models for the type of documents that are required repeatedly in the firm's daily practice" (Du Plessis & Du Toit, 2005). So, it is clear that every document and form is an essential factor for a lawyer. Therefore, those data should be recorded methodically to reduce the stress with their busy working patterns. The above points thoroughly highlight the importance of having organized and easy access for the documents for lawyers. But the easy access should not create any security breaches and doubts about the confidentiality of the client's personal details and as well as of the case details. As emphasized in the paper by (Scheffer, 2017), "the file is not just a distracting medium, but a constitutive participant in legal discourse and it gives a voice to the client in the legal discourse". Therefore, the priority should be given to the security of the files as well. It is as mentioned by Du Plessis & Du Toit, that in the survey conducted in African law firms, "the main concerns lawyers might hold in terms of systems revealed a considerable concern regarding information security and confidentiality, computer viruses resulting in information corruption and content authenticity" (Du Plessis & Du Toit, 2005). The researchers, Zhang, Diao, & Wen, (2008) have stated means of embedding security for the legal files and have proposed a system based on document watermark, cryptology and access control. According to the theories that have been used by "Zhang", "The watermarks are embedded by the first author of the file. All the files cannot be read or write until they are embedded with the watermark. So, this will assure that only the

authorized users can read or write the files. And then secondly users are classed into different secure levels. Users with different security levels have different rights to operate files. As the third level of security, the symmetric key algorithm is used to encrypt the file that is embedded with the first watermark. This can prevent unauthorized users read the file. The public key algorithm is used to provide a pair of keys. The keys are used to encrypt or decrypt files. The Kang, Chen, & Zhan, (2012) has highlighted that file management as a key principle that leads towards a standard way of management. As stated in the paper, "system is a small database management one and help to achieve the following; Accurate and timely collect, process and store; help managers solve daily routines and relieve the work intensity; improve working efficiency and management levels, to create a principled, institutionalized, standardized and scientific management; enhance management capabilities; assist to draw up plans, allocate resources practically, and promote the quality and effectiveness at the best level; transfer from decentralized management to systematic one and integrated basic files". Here the (Kang et al., 2012) has implemented the system using technologies such as; Visual Studio 2005 development platform, C # Programming Language, Structured Query Language (SQL) Server 2005 database management system. Furthermore, the existing software vendors such as "MyCase", "Clio", "eFileCabinet" etc. provides many numbers of functionalities. As emphasized in the ("Filevine - ABA Legal Technology Buyers Guide," n.d.) the key features are; include bill and expense tracking, a settlement calculator, deadline management, record management and advanced reporting and more other common functionalities like; track important deadlines, manage cases and documents and bill and collect from clients; manage tasks for the day, week or month and track billable time directly; scheduling

purposes, etc. Further according to the proposed system by the Mishra, Alok, and Mishra, Deepti there are modules within a single system named as, File management; Asset management; Workflow and document management; Support services management, etc. Through all those modules though they have divided into differently named modules, they all function to ease the work of lawyers. According to their concept, that system consists of main functionalities such as; " printing of letters, notices and reports, automated creation and updating of case records, track the availability of documents, sending various alerts like email, a fax can be provided to the users with deadlines and schedules, etc." (Mishra & Mishra, 2011). So as mentioned above systems have been proposed to develop and some are to be developed with the functionalities that have been identified as the solutions for the existing business problems. As technology is ubiquitous people are more vigilant about every single new thing that comes into the trend. Due to that vigilance customers are more demanding for the quality, effectiveness, and efficiency for whatever the service or the business they engage in. As mentioned by (Evans & Price, 2017), "Clients are often ahead of lawyers in implementing new technologies, and they also have improved access to the legal information that is readily available on the Internet.

The review and comparison of the features of the similar applications existing are depicted in the following Table 1

Clients of law firms are therefore becoming increasingly sophisticated and demanding". So, it is clear that the time has arrived to shift from the traditional way of acting into the modern way technology.

Table 1. Review on similar application's features

Main Features	Similar Applications Clio, App4Legal, Best Case, CaseFox MyCase, Filevine, e-FileCabinet.	Proposed System
Document management	✔	✔
Time tracking	✔	✖
Contract & conflict management	✔	✖
Invoicing & billing expenses	✔	✖
Cloud access	✔	✔
Calendars and event notifications	✔	✔
Email management	✔	✔
Case notes and client managemnet	✔	✔
SMS alerts	✖	✔
Saved templates	✖	✔
E-versions of the reference books	✖	✔
Chatbot communication with paralegal	✖	✔

Methodology

The research was carried under two phases. Phase one was to analyze the "perception of the Sri Lankan lawyers regarding the development of a file management system and the current issues they undergo when maintaining bulks of files and the urging requirements". The second phase of the research was to analyze the systems that have implemented by early developers and the works of literature were reviewed.

In the development process of the system, the agile methodology is used as it is flexible and allows for changes and the following steps were followed.

A. Requirement Gathering

As the first step, the requirements for the system were gathered by interviewing a sample of lawyers. In addition to that, a google form was shared among the lawyers to measure the applicability of digitizing the lawyers' work under the Sri Lankan context.

B. Analysis

Secondly, the gathered information was analyzed to cross-check the lawyers' preferences about the automation of the manual process and their likelihood to shift into a digitalized system. As per the analysis results, as a whole, their main idea is that conventional file management makes them inefficient and more tiresome. Also, they point out that the manual method of file management wastes a lot of their time in searching for the files through each rack and then going through each page. Furthermore, it has analyzed that most of them are busy with the existing systems and it is not convenient for them. Also, an analysis of the literature was conducted to get knowledge about the existing systems.

The final overview according to the age groups of the Sri Lankan Lawyers' analysis results is shown in the following Figure 1.
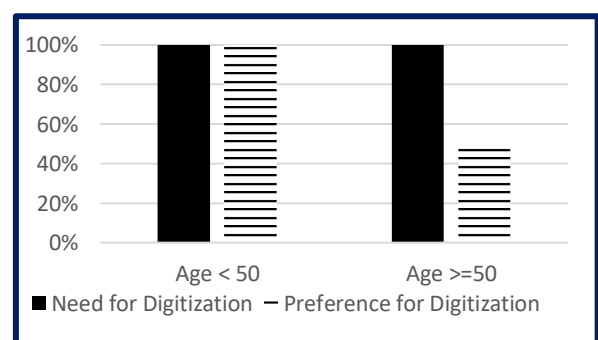

Figure 21. Results from the interviews and survey

Design

As the third step, the design of the system was sketched to match the client's requirements. As to implement the design of the system, use case diagrams and high-level architecture were sketched. The architecture

was designed to depict how clients interact with the servers and each client to collaborate online. According to the designed architecture, the clients and the lawyers can connect via a network, and lawyers can maintain their files using cloud access. The application was designed to give access from any device that works with any operating system. Some of the screenshots captured from the proposed system design are
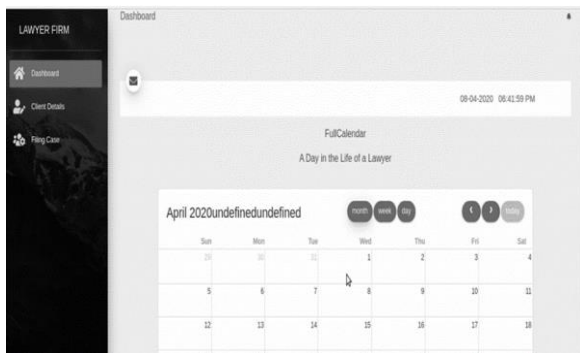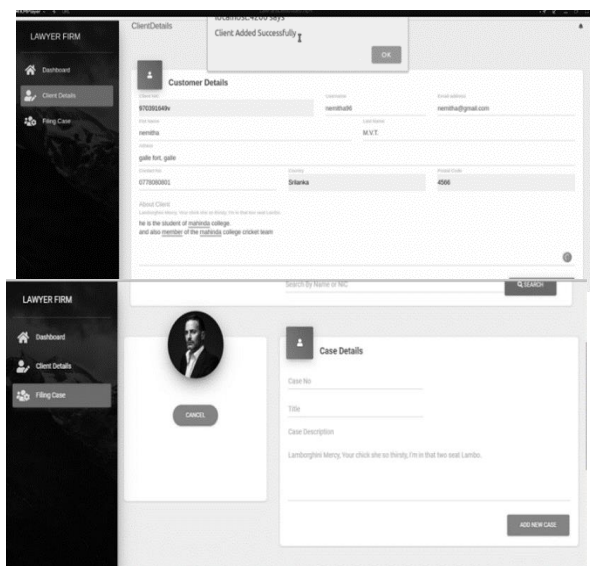

depicted below

Figure 2. Lawyer's Dashboard

Figure 3. Add Clients

Figure 4. Add Case

Evaluatıon

Many ideas have been proposed with different technologies to implement a secure file management system into the conventional way of managing legal filesThe proposed system under this research paper is to be developed with the functionalities; files, client and case management, Calendar management, SMS generation, email management, saved templates, and access to eversions of the reference books. . Furthermore, to enable the concept of "any time at any place" the cloud technology has been implemented with a mixture of service-oriented architecture for the business process. So, developing the system the cloud technologies such as "Software as a service" can be articulated.

Conclusıon

With the rapidly changing technology, every single process has transformed into digitization. But the file bulks of lawyers are still the same. In the Sri Lankan context though many industries, many departments have joined with the active process of shifting from manual paperwork to the digital era, still, the law chambers haven't raised their ideas to reengineer their work processes. As discussed in the above, the problem within the law firm is mainly the workload and lack of tidiness and organization of those work stuff and the lack of proper management systems to handle their clients' details. Therefore, this research is to digitalize the management of file work in an advanced method by allowing the work efficiency both for the lawyer and the client. The idea is focused on optimizing the file management and also time management through online collaborations.

So here, in this paper, its focus is on developing an application that better suits the working requirements of a Sri Lankan lawyer working under the Sri Lankan context.

A.Deliverables

The system provides the facility of file management for the lawyers. At first, each lawyer must create their personal accounts by registering with the application. Then the lawyers can create a separate folder for each of their clients and separate files depending

on the case of each client they are handling. The system is to develop with an alert system to remind the lawyer and the witness party about their next court day and then the system auto-generates a notification to the respective clients. The systems also have the feature of embedded templates and the e-versions of the reference books that lawyers
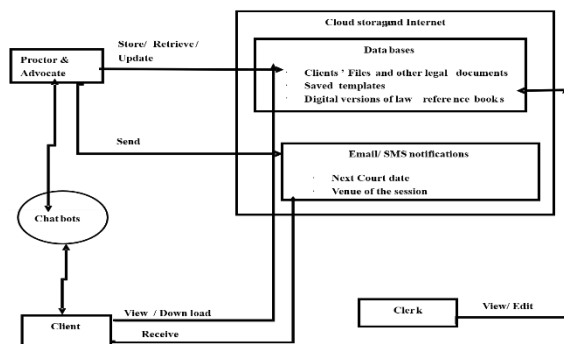
need while sketching the cases

Figure 5. Experimental Design

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