



Digital Transformation: A Case Study of a Legal Firm in Sri Lanka and Its Impact

Dulanjani Dissanayake, Kajini Pasadika Hapuarachchi Hapuarachchige, and Yogesh Jindal

University Canada West, Vancouver, Canada

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ABSTRACT

The legal industry is rapidly transforming, and Goldman Sachs experts estimate that 44% of legal work can be automated, highlighting the legal industry's pivotal role in technological advancement. Presently, there is a critical gap in the operational efficiency of law firms in Sri Lanka compared to those in developed countries. This study is with special reference to D.L&F. De. Saram company's manual practices, which hinder its operational effectiveness and adaptability in the contemporary legal landscape, where quick and secure access to information is pivotal. We have adopted TAM as the theoretical framework for this research. The proposed comprehensive digital transformation addresses this gap by implementing a cloud-based Customer Relationship Management (CRM) System, integration of Artificial Intelligence (AI) for data handling, Case Analysis and Management Software, Legal Research Software, and enhancement of cyber security measures. Furthermore, the article proposes using advanced video conferencing tools to enhance client communication. These changes aim to bring substantial value to the firm by streamlining and automating routine tasks and securing confidential client data. This transformation is expected to increase operational efficiency, reduce cost, improve client services, and enhance the satisfaction and retention of clients.

1. INTRODUCTION

The change towards a more digital world is not limited to just marketing approaches and functions in the contemporary fast-paced world. This paper aims to present the current state of knowledge regarding the shifts in the business and management context within the emerging digital world. The current use of technology has become the order of the day in most aspects of life and has greatly influenced our way of life (Colbert et al., 2016). Knowledge in managing these technologies is more vital today than ever before to avoid stumbling. Research carried out in the recent past has provided further insights into some of the facets of transformation. Based on the information gathered from the research on technology-based change, it was noticeable that technology alone cannot support organizations to remain competitive in the new economic environment.

As per a PricewaterhouseCoopers survey conducted in 2023, companies in Asia Pacific are still in the early stages of Legal technology adoption. General Counsels in Asia Pacific are most familiar with e-signature software (86%), document management systems (37%), and file instruction intake/triage tools (28%). Contract lifecycle management solutions, which have the highest potential for productivity uplift, are used by only 28%. Further, more than 80% of legal officers and general counsels rated their

understanding of legal AI and legal analytics below average (PricewaterhouseCoopers, 2023).

According to a report by the World Bank, Sri Lanka ranks 99th out of 190 countries in the ease of doing business index. It takes an average of 1,318 days to enforce a contract in Sri Lanka (Economy Two, 2021) as compared to Singapore, which has the shortest resolution time worldwide – 164 days for standardized commercial disputes; further, the World Bank report highlighted the new litigation system introduced in Singapore in 2014, which allows litigants to file cases online and keeps them informed about their cases, it also found a striking relationship between court automation and case management on the one hand and the time and cost for dispute resolution on the other hand (World Bank Group, 2019). Accordingly, there is a huge gap in the overall operational efficiency in terms of the utilization of digital technologies.

In the legal industry, digital transformation entails incorporating tools and technologies to streamline operations, improve client services, and boost overall efficiency. This shift involves leveraging cloud computing, Artificial Intelligence (AI), Blockchain, and data analytics to automate tasks, manage volumes of data effectively, and deliver more efficient and secure legal services (Davenport & Ronanki, 2018; Rule, 2020). Embracing a looking approach to integrating technology, legal firms can

effectively navigate the challenges of client expectations, gaining an edge in a dynamic market (Saraswat, 2024).

Digital transformation holds value for the industry by boosting efficiency, enhancing client interactions, fostering innovation, and fostering competitiveness. Digital tools streamline tasks like document review, legal research, and case management. It is common for AI-powered software to process documents quickly. Extract relevant details to save lawyers time and effort. Studies show that law firms incorporate AI for tasks requiring thinking, efficiency, and productivity (Huang & Rust, 2018). Additionally, digital transformation empowers law firms to offer client-focused services. Clients can access their case details through self-service platforms. Benefit from video consultations (Akhter, 2023). Innovation is encouraged by enabling firms to introduce services such as consultations, online dispute resolution mechanisms, and digital contracts facilitated by blockchain technology. These advancements not only meet clients' changing demands. Also, it creates new revenue opportunities (Casey & Niblett, 2017).

Moreover, law firms harness technology to enhance tailored services with the goal of surpassing client expectations and nurturing lawyer-client bonds. These firms gain an advantage by being more adaptable, responsive, and effective. Research indicates that firms that invest in technologies outperform their rivals regarding profitability (Saraswat, 2024).

This study delves into the effects of transformation on the sector, aiming to investigate how emerging technologies transform legal procedures and elevate service quality. Despite progress, there remains a gap in understanding the impact of digital transformation on legal processes and client engagements. This research aims to bridge this gap by examining trends, pinpointing challenges, and suggesting strategies for integration. The objective is to offer insights into how law firms can utilize tools to enhance efficiency, client contentment, and overall competitiveness.

Organizational culture encompasses shared values, beliefs, and attitudes that influence employee conduct within a law firm. Individuals typically adopt behaviors and beliefs from those they are surrounded by while growing up. Every person possesses a set of skills and preferences, but individuals within the same organization tend to share common behaviors and beliefs, shaping a distinct organizational culture (Aydin & Ceylan, 2009). A defined culture enhances communication among organization members and promotes effective collaboration (Deshpande & Webster, 1989). Culture is a phenomenon where people collaboratively shape and reshape their environments.

However, a legal firm lacking this culture may encounter significant obstacles in embracing digital transformation. Challenges such as resistance to change and limited digital literacy concerns about job security are

prevalent. Moreover, insufficient resources, funding, dilemmas, and privacy issues present hurdles (Tursunovich et al., 2023). Studies have shown that 70% of transformation efforts fail due to employee pushback (Kane et al., 2015). Henceforth, cultivating a culture that embraces advancements is vital for executing digital transformation strategies.

This paper explores the digital transformation proposal for M/s D.L&F. De Saram, a prominent Sri Lankan law firm. A thorough analysis of existing literature establishes key trends shaping the global legal landscape, including the rise of AI, cloud-based legal technology, and e-justice initiatives; this paper will subsequently demonstrate how the proposal for D.L&F. De Saram aligns with these trends. Also, it delves into the proposed methodology for implementing the digital transformation at D.L&F. De Saram. That will leverage the "Technology Acceptance Model" (TAM) to comprehend potential challenges. Also, the paper covers the technology needed at various levels by outlining the proposed cybersecurity measures.

In the end, the author discusses the strategy to address the challenges for a smooth transition, trends that exist in the legal industry, and how the proposal incorporates these trends to achieve success. In the later part, you will be able to see the cost analysis in detail for implementing the digital transformation. Finally, it will summarize the key findings of this paper, highlighting the value proposition of the digital transformation proposal for D.L&F. De Saram.

2. LITERATURE REVIEW

The legal industry has been cupped with dynamic changes and disruption recently. Many professionals have identified this industry as a profession that should introduce legal tech (Jneid et al., 2019; Lepore et al., 2019; Fadeev & Rudneva, 2021). At the same time, digitalization currently plays a big role in transforming many industries and society as a whole, impacting the global economy in every aspect. Enhanced use of digital tech and technological answers for complex to smaller problems makes digital innovations and replaces the existing practices, customers, values, systems, and beliefs. Many researchers have conducted studies in its literature on digitalization in the legal industry as it is a traditional and extremely institutional industry along with a homogeneous workforce and practice (Bakhramova, et al., 2023; Empson et al., 2013; Susskind, 2019).

Even though law firms are still in their traditional ways of offering services to customers, specifically firms in third world countries. However, the industry they operate in is an increasingly digitalization context. The legal industry, along with other professional and nonprofessional industries, looked for digital innovations and intellectual inputs such as IT, Big Data, Blockchain, and AI (Bakhramova, et al., 2023). The aim is to improve the value creation for digitalization.

The legal profession and field have been treated as a common context in research (Empson et al., 2013; Susskind, 2019). Legal firms are typically portrayed as traditional professional service providers following a more theoretical-based structure in delivering services to customers. Due to these reasons, legal firms were commonly treated in a common research context in past periods (Muzio et al., 2013). Researchers must understand the common nature of the shared characteristics and practices they adopt in developing theories relating to this field. Moreover, researchers favor the legal industry due to the stability of settings and fewer changes in organizational settings over time (Cooper et al., 1996). Accordingly, many researchers have regarded this professional field as a prime location to develop general theories on different aspects such as professionalization, institutionalization, and its logic (Muzio et al., 2013; Sherer & Lee, 2002). Law firms possess three distinct characteristics as classic professional service providers: higher knowledge intensity, availability of professional workforce, and lower capacity intensity (Kronblad, 2021). Accordingly, law firms are basically run with skilled employees at the front line. Researchers identified that high knowledge intensity works with higher payments and bonuses to retain the service in the legal industry (Von Nordenflycht, 2010). Specifically, legal services are called “opaque quality” meaning intangibility and its fashion of immaterial delivery of good legal advice in terms of knowledge intensity (Løwendahl, 2009). The quality of the legal service is accordingly accessed by the client using symbols and artifacts as described by Løwendahl, 2009). Based on human capital and human knowledge, law firms connect with lower capital intensity. In the legal industry, the demand for investments in inventories and highly expensive fixed assets is very limited, as identified in past reviews (Von Nordenflycht, 2010).

Even though there are stable practices based on such key characteristics of law firms, they have nevertheless been exposed to some changes as per prior work literature. The concept of big law firms emerged in 1980 with internationalization. This has led to spurred big roles of professional lawyers in the field (Stevens, 1987). Big roles in the law field have turned more towards being business advisors than traditional lawyers who are court advocates, practicing more managerial roles (Caserta, 2020). This change in the legal industry with the emergence of the “Big Law” concept has been the foundation for change in the roles, practices, and norms in the industry. This has led to an increase in the market orientation of legal firms, as per Caserta (2020). In this initial transformation in the legal industry, institutions, and professional association involvement are crucial, and they act as the legitimating power for established practices (Greenwood et al., 2002). However, some other researchers in the literature highlighted against the Greenwood theory on protection for established legal practices to stay as same. According to Schilling & Werr (2009), Legal services have been exposed

to the pressure of change due to the nature of legal firms and related other professional services, such as secretary practices as a one-time service and consume the service at the same time the deal with of lawyer and customers. Based on market demand and desires, and context changes, legal service changes their consulting role (Heusinkveld et al., 2009). The role of a closer relationship with the client is identified by many researchers as the key to success in this transformation era with the nature of intangibility and perishability (Grönroos & Ravald, 2011; Schilling & Werr, 2009; Fosstenlökken et al., 2003). Identified this extremely worthwhile relationship impact on the process of innovations of legal services to clients learning from the relationships and communications. New practice areas development in terms of innovations was concerned as a claim for innovation of this professional service and Anand et al. (2007) demanded positive management support and acceptance of changes with this transformation. The introduction of new technology has been identified as a trigger for institutional duties, and that has led to many complexities as an external trigger of change with the challenges of changing from dominant prior practices and logic behind the legal service (Hinings et al., 2018). However, Muzio et al. (2013) identified the legal field as an interesting field setting to research digitalization and its impact, as there is a strong interconnection between professional and institutional forces with many complexities and effects in the field.

Johansen (2017) identified digitalization as the introduction of various digital technologies in the respective industries. In the service sector like legal the “servitization” identified in the literature as digitalization turning into services (Lodefalk, 2013). Since digitalization makes possibilities to transform manual processes into automated processes, there is a possibility of increasing intermingling between products and services (Barrett et al., 2015).

There is very limited research on the implementation of digital technologies in legal firms. However, by adding valuable contributions to the current literature Susskind & Susskind (2015) explored the central role of digital technology in the process of transforming law firms' work with new word processes and ICT technologies. Further, they identified legal research, document filing, and online dealing rooms for digitalization in this process for creating value. The success of this undertaking purely depends on the reactions to change and innovation (Björkdahl, 2009).

Digitalization in intellectual and creativity-based industries such as legal was identified as transformative and created a second machine age to describe the change through times (Brynjolfsson & McAfee, 2014). Further, Brynjolfsson & McAfee (2014) talked about the resemblances and overlap of such knowledge-intensive firms. However, the rise of advanced technology in the use of the service industry in place of human capital put pressure on many firms to change their strategies where

intelligence required for the legal industry can artificially apply (Susskind & Susskind, 2015; Susskind, 2019).

Huang & Rust (2018) identified the extensivity of challenges due to the dynamic development of AI on human interventions in knowledge-based industries with the use of machines instead of the human brain. There is a significant lack and failure to shed light on empirical studies targeting the effects of digital transformation on professional fields, mainly legal (Smets et al., 2017). However, there were changing effects on professional practices and business models in the legal industry due to digitalization, and more studies have been restricted to analyzing only those changes and effects. Digitalization is already here. It is an exogenous force, particularly for changes, but importantly, the necessity is to identify the infinite change in law firms and fields, identify what the effects are, and find COVID-19-related fuel in this changing process (Kronblad & Pregmark, 2021). In previous studies, digitalization has been identified as a substantial barrier to implementation and processing in different settings in the law industry due to more institutionalism, increased workload with diminishing resources and spending on public, and due to lower income (North, 1987; Borge et al., 2008). However, later on, they identified the digitalization related to promised faster and cheaper outcomes with higher quality and more advantages such as affordability, faster legal services, and accessibility (Susskind, 2019; Brynjolfsson & McAfee, 2014). With the COVID-19 hit, digitalization and digital work procedures have been implemented through entire court systems. The departments were shifted to remote work to avoid the risk of spread of the virus in workplaces (Kingma, 2018). Accordingly, COVID-19 breaks down the previously identified barrier to change of legal professionals and institutions. Consequently, digitalization has been empowered by COVID-19, moved such complexities under the bubble, and opened many new ways of doing work in the legal industry (Kronblad, 2021).

Consequently, digitalization has significant effects on the legal industry and its societal contexts. Digitalization should be accepted by its users, ensure social pressure after introducing digital technologies and new methods, and develop a culture and motivation for change (Kronblad, 2021). Improve legal education and digital transformation on problematic issues and effective digital processes in the jurisprudence field are recognized as very important elements in the legal industry within the recent digital economy in recent research contributed to this limited scope literature (Ruchkina & Vengerovsky, 2020; Demchenko et al., 2021). In order to mitigate the higher level of ignorance and uncertainty of respondents in the daily work of the legal sector, the evaluation of IT impact, particularly with regards to day-to-day communication, data safety, and utility of expert digital systems by lawyers, was identified further (Mania, 2022).

In terms of the Sri Lankan context, there are an insignificant number of previous studies relating to digital transformation in the legal industry, as a less consideration paid section. However, very few studies have contributed to this less cognizance sector touching a few digital technologies to integrate in the legal industry. ICT-related legal regime has developed in Sri Lanka after the 1970s, and it has failed to provide proper solutions for the ICT sector. In Sri Lanka, the main barrier to implementing digital developments in the ICT legal regime is due to the very poor e-literature of people who deal with this sector (Thilakarathna & Jayarathna, 2020).

Laws (2021) identified a very special concern on the application of digital technologies in the legal market with special reference to cybercrimes. The main finding of his study was the introduction of novel cybersecurity solutions with new specific provisions for the prevailing law in terms of computer crimes and electronic transactions, as Sri Lanka is highly vulnerable to cybercrimes with an increasing trend. Some period ago, Silva (2006) identified and recommended a very thought-provoking framework for the application of knowledge management with advanced IT in legal sectors by providing valuable considerations into the legal industry. He recommends a "Knowledge Management Plan" with phased-based strategies that address the cultural issues and organizational structure to facilitate the knowledge management plan and applicable technologies with vision. Silva (2006) identified an 18-month plan of digital transformation for Sri Lankan law firms, including a matter management system, document management system, online services, CD ROM, intranet, internet, and push technology to overcome many gaps in the legal sector compared to developed countries.

Since the country was severely affected by the COVID-19 pandemic, Guruge (2012) made his valuable contribution to the literature by identifying internet-based technologies in the legal system instead of face-to-face legal sessions due to the pandemic-related challenges encountered at the Sri Lankan court system. The major findings were to introduce an online dispute resolution system, e-filing and electronic exchange of procedural documents, online legal system, and virtual courts while highlighting the existing lack of objective for procedural justice and unavailability of measures related to systemic bias and substantive justice in the court system. Most importantly, Guruge (2012) argued that AI is a plethora of resolving legal cases and as a legal application into timesheets, advanced researches, contract administration, and legal analytics.

3. METHODOLOGY

"The Technology Acceptance Model (TAM) is an information systems theory that explains how to encourage users to accept and utilize new technology (Davis, 1989)" (Paula et al., 2018, para.1).

TAM developed by Fred Davis and Richard Bagozzi in 1989, “has been one of the most influential models of technology acceptance, with two primary factors influencing an individual’s intention to use new technology: perceived ease of use and perceived usefulness. An older adult who perceives digital games as too difficult to play or a waste of time will be unlikely to want to adopt this technology, while an older adult who perceives digital games as providing needed mental stimulation and as easy to learn will be more likely to want to learn how to use digital games. While TAM has been criticized on a number of grounds, it serves as a useful general framework and is consistent with several investigations into the factors that influence older adults’ intention to use new technology (Braun, 2013)” (Paula et al., 2018, para.2).

In simple words, it can be said that people try to make cognitive decisions and create a bias about new technology without even interacting with the piece of technology (Educenter, 2019).

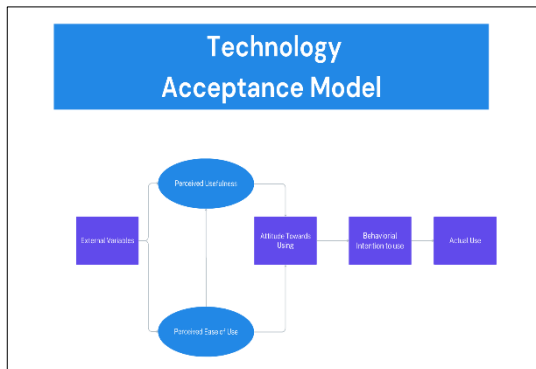


Figure 1: TAM Flowchart

Note. From “TAM” Model overview and use for evaluation”, by Educenter, (2019).

In the flowchart, external variables are a person’s disposition with a computer or any technology if they have used something similar. From external variables come perceived usefulness and perceived ease of use of the new technology. How much training is required to learn new technology determines the ease of use, which influences perceived usefulness; these factors make up attitudes towards using technology, which further leads to behavioral intention to use, which can be positive or negative. If it is positive, only then are people going to use the technology; otherwise, it is highly likely that they will not use the technology (Educenter, 2019).

There are some limitations of the TAM; first is the variable that pertains to the behavior of users, which is inevitably evaluated through subjective means such as behavioral intention (BI) or interpersonal influence, and the second limitation is that underlying behavior cannot be reliably quantified in an empirical investigation, owing to several different subjective factors such as the norms and values of societies and personal attributes and personality

traits. Hence, the argument that a relative or friend could influence the use of technology through exacting social pressure (Ang & Amin, 2015; Shan & King, 2015, as cited in Patrick Ajibade PhD, 2018) is highly falsifiable.

These limitations gave birth to modified versions of TAM like UTAUT (Unified Theory of Acceptance and Use of Technology). While TAM provides a foundational understanding of technology acceptance, UTAUT offers a more comprehensive framework by considering a broader range of variables that influence user acceptance and use of technology (Bernardinus et al., 2022). This paper applies this model to the proposed digitalization project at the D.L&F. De Saram.

Before using these models, D.L&F. De Saram must consider some factors. First, identify their stakeholders, who are going to use the new technology, would they find it useful to their life, how much training would be needed, and what potential attitudes may be developed by users during implementation; consider each person as an individual, and they can have different responses. Second, identify immediate challenges and barriers to entry. Do they need a lot of back learning to understand what is happening now? Third, identify immediate benefits and use them as your selling point for potential users. Last, which influencers can you use to promote positive behavioral intentions of users, they play an important role in reinforcing the change positively (Educenter, 2019).

4. ANALYSIS AND DISCUSSION

A. Framework, tools, and technologies needed for M/s D.L&F. De Saram

As stated in the “Methodology” section, TAM focuses on the adoption of technology by users. To successfully deploy the suggested cloud-based CRM system, AI Chatbot, Case analysis and management software, legal research software, video conferencing tools, and cybersecurity software, it is essential to have specific frameworks, tools, and technologies at various levels, and each level plays a critical role in ensuring the security of digital solutions.

For the analysis of the industry status, most of the empirical data are used from recently published industry studies, internet-based data sources, and publications by the regulatory authorities, especially in the context of Sri Lanka as secondary data-based quantitative research.

Keeping TAM principles as the base, the technologies and tools proposed to the legal firm, which has an employee count of one hundred, are given below.

1) *Zoho Customer Relationship Management System*: Zoho CRM is the optimal software to meet the firm’s customer requirements. This software will enable the efficient management and organization of information on both existing customers and potential prospects interested in services. The primary objective is to

strengthen business relationships by enhancing customer retention and acquisition. By leveraging the power of AI, ZOHO CRM provides valuable insights into customer behavior, the status of sales pipeline, individual salesperson performance, and more (Zoho CRM, 2024)



Figure 2: Zoho CRM

Note. From *Introduction to Zoho CRM - 1cxpro.com*. (2024). 1cxpro.com. <https://1cxpro.com/introduction-to-zoho-crm/>. Copyright 2022 by 1cxpro.com

2) *Artificial Intelligence*: The author recommends utilizing the “CHAT GPT Enterprise Solution” to enhance the firm's efficiency and customer service. This advanced AI tool can be integrated into the company website to handle general customer inquiries, providing prompt and accurate responses. Additionally, CHAT GPT can assist in summarizing lengthy documents, drafting contracts, and performing repetitive tasks such as grammar checks and proofreading (Rampton, 2023). This will streamline operations, allowing legal professionals to focus on more complex and value-added activities.

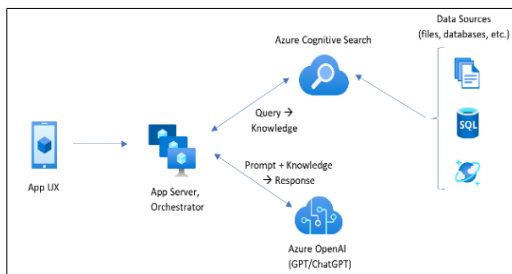


Figure 3: Modeling Enterprise Data with ChatGPT

Note. (Pablocastro, 2023)

3) *Case Analysis and Management / Legal Research Software*: Establishing a legal case requires meticulous management and organization, which involves compiling facts, reviewing documents, tracking deadlines, monitoring case progress, and building a chronology (LegaMart, 2023). Tools like CaseFleet, Filevine, and

Litify are cloud-based solutions tailored specifically for law firms to streamline these processes. While these platforms share many similar features, they also have distinct differences that cater to various specific needs within legal practice.

Legal research software enables law firms to conduct research rapidly and effectively. The company can use either Westlaw, LexisNexis, or Fastcase for this purpose. The market for these tools is expanding significantly, with forecasts predicting it will surpass \$1.386 billion by 2027(LegaMart, 2023).

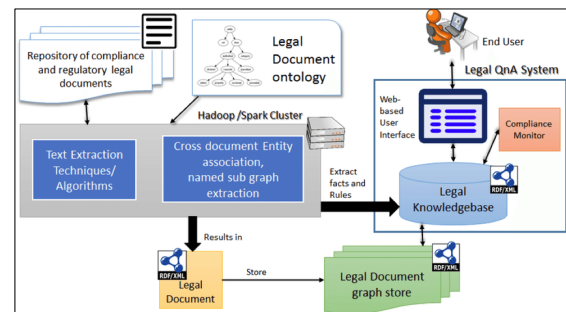


Figure 4: Legal Document Analysis System Model

Note. (Joshi et al., 2016)

4) *Video Conferencing*: Though COVID-19 forced every company to use video-conferencing tools to hold virtual meetings. D.L&F. De Seram company currently uses but to take full advantage of this technology, the author recommends using Zoom Business software. The Zoom Workplace Pro account offers several advanced features that enhance the user experience. It allows cloud recording for easy sharing and supports live streaming to platforms such as Facebook, Twitch, Instagram, and YouTube. Administrators can manage licenses, remove users, customize notifications, and enable cloud recording. Additionally, they can access Zoom Analytics and receive daily usage reports, facilitating efficient oversight and management (Zoom Account, 2023).

5) *Storage*: The author recommends a hybrid approach using both cloud-based and in-house storage solutions. The confidential and sensitive data that needs high security must be stored in-house; the rest, less sensitive and less frequently used, can be stored in the cloud-based system. The author suggests in-house storage using the Dell LinkStation 220-8TB HDD. This device offers a secure, centralized location for data from all PCs, Macs, tablets, and smartphones in your home or small office. It provides reliable data protection and enables access and file sharing over a wireless network at speeds up to twice as fast as standard USB hard drives (Dell Technologies, 2024). This in-house storage can easily be maintained by existing IT staff in the company with minimal training.

For other data, a cloud storage service by Google Cloud is recommended, which provides access to daily use data from multiple devices in a cost-effective manner.

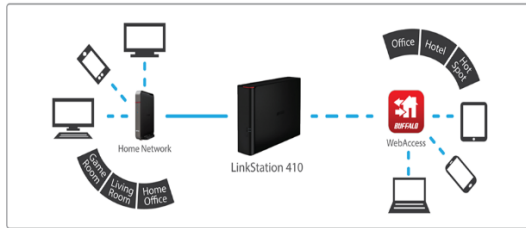


Figure 5: Shared Central Storage

Note: BUFFALO LinkStation 220 - NAS server - 2 bays - 8 TB - SATA 3Gb/s - HDD 4 TB x 2 - RAID 0, 1, JBOD - Gigabit Ethernet | Dell USA. (n.d.).

6) *Mobile Applications*: It is also essential to have a secure mobile application for both employees and clients. The author recommends installing the “NetDocuments Mobile Application” which serves as a secure document management and collaboration platform for mobile devices. Furthermore, the Company can choose “Clio”, legal management practice software with a mobile application that allows access to case information and communication from any location.

Installing “LastPass MFA Data Security” can be enhanced security and data protection as it provides biometric authentication and secure password management for mobile devices.

B. Cybersecurity Measures

For the digital transformation of D.L.& F. De Saram, it is essential to have a comprehensive cybersecurity strategy to protect sensitive client data, maintain client trust, and comply with legal standards. It is recommended the following key components of cybersecurity to the firm.

1) *Network Security*: To ensure network security, it is essential to use firewalls for monitoring and managing inbound and outbound traffic, as well as Intrusion Detection Systems (IDS) to detect and address potential security threats. Additionally, implementing Virtual Private Networks (VPNs) will secure remote access by keeping data encrypted both at rest and in transit, safeguarding it over unsecured networks. (NI Business Info, n.d).

2) *Endpoint Security*: For endpoint security, equip the latest antivirus software like Norton, Bitdefender, or TOTALAV, which will protect from real-time malware and spyware attacks and complete online protection and secure web browsing (SafetyDetective, 2024).

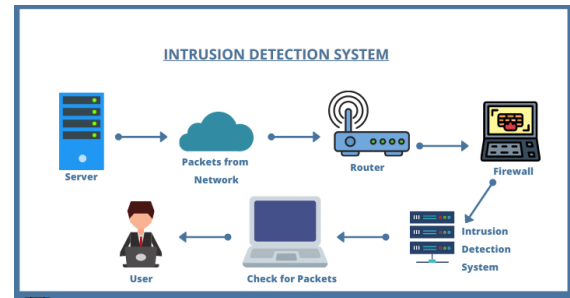


Figure 6: Design Development of an Intrusion Detection System

Note: (Network Simulation Tools, 2024)

3) *Access Control*: The authors propose implementing Role Based Access Control (RBAC) to strictly control employees' access, allowing access to data necessary for their roles. Also, Multi-Factor Authentication (MFA) provides an extra layer of security over password methods.

4) *Incident Response and Management*: The authors propose to develop and regularly update the Incident Response Plan (IRP), illustrating the procedures to follow in the event of a security breach which will mitigate the damage. Also by conducting regular security audits and vulnerability assessments to identify and rectify any security loopholes.

5) *Cloud Security Protocols*: To secure cloud services, compliance with industry-specific regulations, and meeting stringent security standards such as the Data Protection Act in Sri Lanka and any international laws applicable to the firm's operations is essential.

C. Challenges and Mitigation Strategies while implementing new technologies using TAM

The major challenges that can impeditment the implementation of the above-mentioned new technologies with the digitalization process involve the following concerns.

1) *Lack of awareness of technology implementation*: Proactive plans are required to implement digitalization at all organization hierarchies throughout the structure, but lack of standard tools and business models is a challenge for Industry 4.0 (Manavalan & Jayakrishna, 2019, as cited in Vimal, et al., 2023).

2) *Negative perception towards new technology*: Negative perception largely focuses on the public image, which plays a large role in adopting or implementing a new technology towards Industry 4.0 development (Lohmer and Lasch, 2020, as cited in Vimal et al., 2023)

3) *Lack of a roadmap for successful implementation of technology*: For the efficient flow of Industry 4.0 with C.E., a well-defined strategy would be required. Ineffective planning could be the major reason for not

executing the right methods and methodologies for the successful execution of Industry 4.0 (Swan, 2018, as cited in Vimal, et al., 2023).

4) *Difficulty and complexity in changing organizational culture*: Organizations have been finding it very difficult to change their existing culture or policies for Industry 4.0 implementation. More often, organizations have short-term goals requiring immediate results, which limits them to further change in policies, thereby not having a change in their workflow (Tönnissen and Teuteberg, 2020, as cited in Vimal et al., 2023).

By making sure that employees are incentivized properly to use the proposed new system, especially during its initial roll-out phase, when you need everyone on board for success. It should also be made sure that employees understand why they need to use it and how the technologies would help them (Abdullahi, 2021).

In terms of the Sri Lankan context, relating to the industry where De Seram Company operates, the following specific challenges were identified with more analysis of the empirical data available from reliable sources.

1) *Points for Critical Analysis and Originality*: In 2021, a three-year plan targeting digitization of courts was implemented to make the judicial system more efficient. Digitization of the courts would mean a more streamlined process of court hearings (Hoole & Sallay, 2021).

The position of Easy of Conducting a Business Ranking has been affected by the lengthy court proceedings in Sri Lanka. The contract-enforcement has been identified as the weakest aspect of the said index, where the position is 164th out of 190 countries in 2020 as negative effects. It takes an average of 1,318 days, or about 3.61 years, to enforce a contract there, compared to just 216 days in New Zealand, which leads the index (World Bank, 2020). The Minister of Justice emphasized in his address that countries with better rankings attract more investors, leading to significant losses for those with lower rankings. Recognizing the critical role that swift legal resolutions play in attracting foreign investment, the Minister noted that the judicial backlog had reached critical levels, especially during extended lockdowns. To improve public access to justice and enhance foreign investment appeals, significant judicial reforms are now being initiated (Hoole & Sallay, 2021).

2) *Registration of Companies*: The business registration process in Sri Lanka required personal attendance and extensive paperwork until late 2011 and led to notable delays and inefficiencies. But, in recent years Sri Lanka has made noticeable progress in digitalizing its legal frameworks. This digital transformation has led to the development of online platforms that ease the processes of business registration, tax compliance, and other regulatory requirements.

Specifically, the introduction of e-ROC (Registrar of Companies) made Sri Lanka reach a higher rank in the World Bank's Ease of Doing Business Index. The e-ROC platform allowed the electronic submission of applications for company registration, document verification, and payment processes. As a result, there was a considerable decline in the time taken to launch a business from many weeks to a few days (Department of the Registrar of Companies, n.d.).

3) *Land Registry of Sri Lanka*: The lawyer (Notary Public) has to check for a clear title before purchasing land on the client's behalf. For this purpose, in those days the Notary Public had to visit the land registry office to obtain extracts physically. However, this has now been automated, and lawyers can request deeds/extracts remotely. However, lawyers have to report to the Land Registry about the details of the deeds/instruments they executed (eg. details such as type of deed, parties involved, deed value, and stamp duty amount) every month. For this purpose, lawyers/or authorized representatives have to physically go to the respective land registry. It is suggested that this process be automated since it will save cost and time expended for physical trips (Registrar General Department, n.d)

4) *Sri Lankan Court Procedures*: Currently, in Sri Lanka, only the procedures of the Supreme Court and the Court of Appeal are automated, where people can access court lists, judgments, or orders online (The Registrar of Supremecourt, 2018). But it is important that this procedure has to be applied to other courts as well.

5) *Commercial Courts*: At the end of 2020, Sri Lanka Telecom (SLT), partnering with the Colombo Law Library, has introduced a novel Virtual Hearing Solution to use in the Commercial High Courts of Sri Lanka. This innovative online platform leverages SLT's expertise to facilitate remote court hearings, ensuring continuous judicial operations during crises. The new online platform aims to ensure the continuous operation of courts during crises like COVID-19 by functioning as a "virtual courthouse." This system allows cases to be heard remotely using video conferencing, reducing courthouse visits. It includes separate interfaces for judges and lawyers, designed to be user-friendly and to seamlessly digitize court practices. Lawyers, upon registration, can select a virtual courtroom, leading to a video conference with judges. When a case is called, involved counsels can present their arguments via video and audio. Authorized attendees can join to observe the proceedings, and a public broadcast is available if needed.

The Virtual Hearing Solution offers features for smart scheduling, identity and access management, e-notices before hearings; video conferencing, recording, and document uploads during hearings, and transcript access and case status updates post-hearing. Judges will have a wide screen in a designated chamber, while lawyers can join from their mobile devices or laptops from remote

locations with internet access. This system aims to enhance judicial services by boosting efficiency, transparency, and inter-agency integration. Initially, the Commercial High Courts of Sri Lanka will pilot this solution for their Calling Dates Cases (Daily FT, 2020).

TAM can help mitigate these challenges and achieve enhanced effectiveness by improving perceived usefulness and perceived ease of use by;

- 1) Highlighting specific benefits of the technologies, for example, an increase in productivity, improved customer satisfaction, automation of repetitive tasks, streamlined processes, and better collaboration among employees (Perceived Usefulness).
- 2) Showcasing the successful use cases, for instance, for competitors who have employed the technologies and are benefiting by way of increased sales. Real-life case studies can be used to make them believe in the new technologies (Perceived Usefulness).
- 3) Providing user-friendly interfaces that are intuitively designed with clear navigation and easy-to-learn tutorials (Perceived ease of use).
- 4) Providing comprehensive training on new technologies and supporting to address any issues employees encounter while using the technologies (Perceived ease of use).

D. Strategies for Implementing Changes in Business Processes

To successfully carry out the proposed digital transformation, a variety of strategies and measures are essential. Some of these include.

1) *Employee Training and Change Management:*

A crucial approach is ensuring that employees embrace the technologies. This can be accomplished through a change management initiative that incorporates training, communication, and assistance for staff members (Kempton, 2021). Prioritizing literacy and training across all age groups within organizations is also important for classification societies (Bijaksana et al., 2024).

2) *Overcoming Resistance to Change:*

Forming functional teams comprising legal experts and IT professionals can help bridge the gap between traditional legal methods and digital advancements. Additionally, involving employees in decision-making processes and highlighting the advantages of transformation can foster openness to change (Hayek, 2023).

3) *Skill Development for Transformation:*

Acquiring the skills to drive transformation within the legal sector is paramount. As technology continues to evolve and reshape how legal services are rendered, legal practitioners must remain at the forefront. One key skill to

cultivate is understanding emerging technologies like intelligence (AI) and blockchain, along with their applications, in legal procedures (Francis, 2024).

4) *Ensuring Adherence to Regulatory Requirements:*

When transitioning operations to platforms, it is crucial to abide by regulatory standards. The legal industry functions within a regulated space, and noncompliance with these regulations can lead to legal and ethical repercussions. To steer clear of issues, it is vital to follow data protection laws maintain confidentiality standards, and adhere to electronic signature protocols. By implementing security measures and conducting system audits, firms can reduce the risk of non-compliance and uphold trust with their clients (Francis, 2024).

5) *Business Process Transformation:*

The emergence of technologies will call for a reassessment and potential restructuring of business processes. This may involve simplifying workflows automating tasks, and establishing guidelines for data handling and collaboration (Davenport, n.d.).

The General Changes in Legal Industry Business Processes to concern are as follows.

1) *Incorporation of Legacy Systems:*

Law practices rely on legacy systems and software that play integral roles in their operations. Merging these legacy systems with tools and platforms can be intricate and time-intensive. Collaborating with IT professionals specializing in technology and system integration is crucial during this phase. These experts offer a breadth of knowledge and expertise for devising a customized integration approach that aligns with the firm's requirements and objectives.

Their understanding of the intricacies of software and systems ensures a transition minimizing disruptions and maximizing the advantages of digital transformation (Hayek, 2023).

2) *Streamlining Routine Tasks:*

Automating repetitive and mundane tasks, like document management, scheduling, and basic legal research can free up time for legal professionals to concentrate on high-value assignments. This can boost productivity. Cut down expenses (Brynjolfsson & McAfee, 2014).

3) *Improved Collaboration and Communication:*

The new tools can facilitate collaboration and communication among lawyers, paralegals, and other team members. This could result in enhanced efficiency, superior case management, and elevated client service quality (Alavi & Leidner, 2001).

4) *Emphasis on Continuous Enhancement:*

It is essential to perceive the transformation journey as a process. The firm should cultivate a culture focused on improvement by assessing the effectiveness of new

technologies and adjusting processes when necessary (Deming, 2018).

5) *Current Developments in the Global Legal Sector:*

The legal field is experiencing changes propelled by progressions and evolving client demands.

E. *Significant Trends Influencing the Proposed Digital Transformation on a Scale*

1) *Rising Use of AI:* AI is now playing a role in various legal activities such as legal research, document examination, contract analysis and even aiding in the development of legal strategies. A recent study involving managing partners at U.S. Law firms with 50 or more attorneys revealed that 36 percent of law firms and over 90 percent of law firms (with over 1,000 attorneys) are either already using AI systems or actively considering their implementation in their legal operations (Marchant, n.d.). As an illustration, LawGeex, a company specializing in AI, utilizes AI to scrutinize contracts and pinpoint risks and discrepancies, thereby simplifying the contract review process for lawyers.

The strategy incorporates Chat GPT, an AI tool designed to handle client queries, summarize documents, and streamline tasks. This reflects the growing use of AI to enhance efficiency in third-world countries such as Sri Lanka and application in the legal industry, allowing lawyers time to focus on legal matters.

2) *Adoption of Cloud-Based Legal Technology:*

Law firms are increasingly embracing cloud-based legal management software to boost efficiency, promote collaboration, and enable access to client data from any location. Cloud computing is projected to become nearly ubiquitous among firms across all sizes in the future. Companies that embrace cloud-based technology at the forefront will have an edge. This advantage will be increasingly important as the legal industry transitions to an approach that emphasizes effectiveness, convenience, and client-friendly processes (Sohal & Gupta, 2020). Platforms like Clio and LexisOne offer law firms a solution for managing cases, documents, and client interactions, specifically for law firms in Sri Lanka, which are more depend on traditional methods.

The proposal supports implementing Zoho CRM as a cloud-based system for managing client information and communications. This mirrors the industry shift towards cloud-based software for accessibility, collaboration, and security.

3) *Digitalization in proceedings:*

E-justice, also known as electronic justice, is an emerging trend in the digital transformation of legal processes. E-justice initiatives are focusing more on ensuring accessibility for all users, including those with disabilities. Implementing video conferencing for meetings is part of this system. It aims to provide Online

Filing and Case Management services as Online Dispute Resolution assistance (Zhurkina & Bochkareva, 2021).

4) *E-billing:*

Legal expenses represent an industry that operates alongside law firms. For matters, law firms can generate their own invoices using efficient software solutions to monitor individual lawyers' performance effectively and efficiently. A practice highly valued for its clear benefits. In situations, law firms often enlist the help of an external costs draftsman to prepare their invoices and if needed, defend in court the reasonableness and proportionality of the bill amount. As a result, an electronic billing system should ideally be capable of conducting the monitoring mentioned earlier and seamlessly integrating with providers, like a costs draftsman and the court in a manner. The outlined digital transformation strategy for D.L&F. De Saram aligns effectively with trends influencing the legal sector on a global scale. Here's how the plan embraces these trends

5) *E-Justice Advancements in Digitalizing Legal Processes:*

The plan recommends utilizing video conferencing as a means of communication with clients. The rise in the use of video conferencing within e-justice initiatives highlights a shift towards accessible ways of conducting meetings compared to traditional face-to-face interactions.

Some key points to consider include:

- Strengthening the proposal by mentioning the integration of e billing software aligning with the trend of leveraging technology to streamline billing processes.
- Emphasizing cybersecurity measures in the proposal is crucial, given the increasing reliance on solutions and the importance of safeguarding sensitive client information. This aligns with the focus on cybersecurity in the sector.

By incorporating these trends, the digital transformation proposal from D.L&F. De Saram aims to;

- Enhance efficiency and productivity through automation and optimized processes.
- Improve client service by offering convenient communication channels and quicker response times.
- Boost competitiveness by adopting cutting-edge technologies utilized by top legal firms.
- Ensure data security through cybersecurity protocols.

The next chapter of the report will illustrate a detailed analysis of the costs involved in the Digital Transformation process.

F. Cost Estimate for the Implementation of Digitalization in the Legal Firm

Digitalization involves a significant investment of money, time, and human effort. Knowing the cost associated with the proposed digitalization of a traditional legal firm will lead to ensuring the digitalization plan ahead to experience the best end of the project. Accordingly, the following cost estimate is expected with the proposed digitalization.

Description	Estimated Cost (Min)	Estimated Cost (Max)
Hardware Installation	\$33,000	\$42,700
Computers/ Laptops and related accessories (15 units)	\$25,000	\$30,000
Printers/Scanners (3 Units)	\$1,000	\$1,800
Server	\$5,000	\$8,000
Storage	\$1,000	\$1,000
Network and related accessories	\$1,000	\$1,900
Software	\$18,805	\$45,515
Zoho Customer Relationship Management system (Annual)	\$850	\$1,000
Artificial Intelligence Chatbot - Enterprise Software (Per Month)	\$1,000	\$3,000
Case Analysis and Management / Legal Research Software (Per Month)	\$80	\$100
Video conferencing (Annual)	\$215	\$215
Storage (BUFFALO LinkStation 220 - NAS server)	\$380	\$500
Antivirus/ Cyber Security (one-time initial cost)	\$2,000	\$3,000
Antivirus/ Cyber Security (Per Month)	\$200	\$300
Employee Training Cost	\$10,000	\$12,300
Initial Training program	\$3,000	\$ 3,800
Subsequent training programs (Per Month)	\$200	\$500
Initial System Implementation	\$5,000	\$6,000

Figure 7: Cost Estimate for Proposed Digitalization

Note: (Azure.microsoft.com. 2024; Ca.norton.com. 2024; Dell USA. 2024; EY Design Studio. 2024; Legal.thomsonreuters.com. 2024; Lenovo CA, 2024; Microsoft Azure, 2024; OpenAI. 2024; SoftwareAdvice. 2024; Trusted Tech Team, 2024; v-jet. 2023; Zoom, 2024).

Accordingly, the gross estimate for the initial capital cost is approximately between ~\$52,285 - \$67,415, and the monthly running cost will be ~\$3,400 - \$6,700. The first-year total cost once implementing the digitalization will be ~\$ 115,380. In Sri Lankan Rupees, this will cost ~LKR 26.54Mn for the first year.

G. Benefits Associated with the Digital Transformation in the Legal Industry

Ramifications of digital transformation in the legal industry, specifically in traditional firms in a third world country such as Sri Lanka, will lead to several benefits. The major benefits can be identified as follows in general for this industry:

- Establishment of more efficient, effective, and accessible legal services and more easy access to justice within the country.
- Possibilities for revolutionary potentials with global exposure and successful reference to more case studies on finding the best legal solution.
- Availability of more transparency, clarity of legal matters, legal solutions, and protection of privacy in the regulatory framework for clients.
- Ethical use of digital technologies will remove the bias and secrecy of handling legal cases with proper follow-up on professional conduct and norms.
- Simplify the interconnections between the government, the general public, professional attorneys, and businesses in disputed relations (Fadeev & Rudneva, 2021).
- Simplify administrative work and minimize the cost by removing nonvalue-adding activities and manual work.
- Less stress and concerns of lawyers' daily work, such as typing, signing, and communicating.
- Establish a balance between the interests of the industry with maximum development and fewer restrictions to establish security in new tools and systems (Fadeev & Rudneva, 2021).

The justice of the legal system will depend on digital advancements in the near future. Stakeholders can experience the justice, efficiency, and accessibility of every person who requires legal concerns. Digital transformation in the legal industry should be fair and beneficial to everybody attached to the industry (Bakhramova et al., 2023). Further, with the involvement of digitization, issues such as data privacy and accessibility concerns should be resolved with due care. Accordingly, support from Lawyers, politicians and regulatory institutions should address the prevailing issues and rise of new issues.

5. CONCLUSION

In conclusion, the proposed digital transformation for D.L. & F. De Saram represents a comprehensive effort to address the deficiencies in the firm's current functioning. The firm heavily relies on manual document management and conventional communication methods, which impede its efficiency and adaptability in the modern legal landscape. This transformation includes a cloud-based CRM system, AI for summarization, case analysis and legal research software, Video conferencing, an in-house storage system, and robust cyber security measures. These technologies will considerably enhance the company's operational efficiency, client service, and overall competitiveness in the legal industry.

The TAM is key to this transformation, as it centers on how users adopt new technologies. By focusing on how

easy and useful the new systems seem, TAM can predict employee reactions. Providing thorough training and clearly explaining the benefits of the new technologies will help ensure smoother adoption and greater acceptance among staff.

Implementing the Zoho CRM system will manage the client information efficiently and enable to organize the information on existing and potential clients properly strengthening the business relationships and improving customer retention and acquisition. Further, the system will automate routine tasks, streamline operations, and make the lawyers and administrative staff focus on value-added activities.

Introducing CHAT GPT Enterprise Solution can be integrated into the company website to handle general inquiries and instantly give accurate responses. Further, AI will be used to summarize lengthy documents, draft contracts, and proofread. Case analysis and management software, as well as legal research software, will assist in organizing facts, tracking deadlines, monitoring case progress, and building a chronology. The company will choose between CaseFleet, Filevine, and Litify case analysis and management software based on cost, unique features, and benefits. For legal research, either Westlaw, LexisNexis, or Fastcase will be purchased and ensure efficient research, enhancing the firm's analytical capabilities.

For communication, the authors recommend using Zoom Business software. The Zoom Workplace Pro account offers several advanced features that enhance user experience. It allows cloud recording for easy sharing and supports live streaming to platforms such as Facebook, Twitch, Instagram, and YouTube. Administrators can manage licenses, remove users, customize notifications, and enable cloud recording. Additionally, they can access Zoom Analytics and receive daily usage reports, facilitating efficient oversight and management. This will ensure better communication with clients and within the team, overcoming current communication issues.

In terms of data storage, a hybrid approach using both cloud-based and in-house storage solutions is recommended. Critical data requiring high security should be stored in-house using the Dell LinkStation 220-8TB HDD. This device offers a secure, centralized location for data from all PCs, Macs, tablets, and smartphones, providing reliable data protection and enabling access and file sharing over a wireless network at speeds up to twice as fast as standard USB hard drives. Less sensitive and less frequently accessed data can be stored in the cloud, ensuring flexibility and scalability.

Comprehensive cybersecurity measures are crucial for the digital transformation of D.L. & F. De Saram. The authors have proposed installing firewalls and Intrusion Detection Systems (IDS) to manage network traffic and address potential security threats. And the Virtual Private

Networks (VPNs) will secure remote access. Furthermore, equipping Norton antivirus software will protect against real-time malware and spyware attacks. Mobile applications parallel to this digitalization will enhance the user-friendliness and easiness of remote work.

While the proposal is promising, there are several limitations to address. To guarantee a seamless transition, employee opposition to new technology can be addressed with comprehensive training programs and change management techniques. Phased deployment can assist in managing these expenditures, even though the initial costs are high and are projected to yield long-term advantages. Robust cybersecurity procedures, frequent audits, and an extensive Incident Response Plan (IRP) will be employed to address data security issues. It is possible to mitigate integration issues with careful testing and committed IT support. Selecting reliable suppliers and creating explicit Service Level Agreements (SLAs) are essential when depending on technology providers. Moreover, the suggested solutions rely on secondary data sources because of time and budget restrictions. More time and funds may be allocated to primary research, which could yield more practical and tailored answers.

Through proactive resolution of these constraints, D.L. & F. De Saram may effectively navigate the digital transformation process. This strategic shift will significantly benefit the business by raising overall customer happiness and competitiveness. It will also propel the firm to achieve sustainable growth and establish itself as a pioneer in digital innovation in the legal sector.

For future research, there is a gap between the application of digital technologies and the legal regulations on intellectual property with the use of AI. Accordingly, a more critical analysis of problems with the legal personality of AI and the regulatory status of objects developed through AI can be examined as the next step after the implementation of AI and related technologies in traditional legal firms in third-world countries and possible problems to overcome successfully in the future.

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