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E-COURT TRANSITION PROCESS OF ESTONIA AND THE KURDISTAN REGION OF IRAQ: RECOMMENDATIONS FOR DEVELOPING COUNTRIES

Master's Thesis

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EESTI JA KURDISTANI REGIOONI E-KOHTU ÜLEMINEKUPROTSESS: SOOVITUSED ARENGUMAADELE

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Author’s Declaration of Originality

I hereby certify that I am the sole author of this thesis. All the used materials, references to the literature and the work of others have been referred to. This thesis has not been presented for examination anywhere else.

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Abstract

Many countries have adopted the electronic court system across the world to various degrees. Likewise, many others are either in the process of adopting it or just contemplating transitioning to the use of e-court. However, developing countries, especially, have not had much success with the development of e-government services, one of which is the e-court system.

This research engages in a thorough analysis of the court system and its scope. It uses qualitative research methodology to study the e-court transition process of two chosen case studies: Estonia and the Kurdistan Region of Iraq. A detailed review of relevant literature was conducted and combined with in-depth interviews of experts involved in the transition processes and/or users of the e-court systems in each of these case studies. The constructivist approach was employed, to properly understand of the subject matter from the perspective of those involved in it.

The research uncovered many accomplishments of e-court in Estonia and KRI, which are meant to serve as prospects for countries planning to adopt it. Also, the challenges of the transition processes of these case studies were uncovered as the reluctance of users, budgetary challenges, users' lack of ICT skills, imperfect user interface, and absence of other e-governance tools. The research also found that the factors critical to the success of a transition to e-Court are 1. Active information system 2. Functioning interoperability platform 3. User-friendly interface 4. Electronic ID and signature 5. Support of stakeholders 6. End-user participation 7. Thorough plan and analysis 8. Updated legal framework 9. Organizational change.

Finally, as a recommendation directed mostly at developing countries, the author developed a set of critical steps to be accomplished at different specified phases of the transition to the e-court system.

This thesis is written in English and is 46 pages long, including 5 figures and 2 tables.

Keywords: e-Court, e-Justice, e-Governance, Digital Transformation

List of abbreviations and terms

AI	Artificial Intelligence
CMS	Case Management System
ICT	Information and Communications Technology
KRI	Kurdistan Region of Iraq
MDA	Ministries, Departments and Agencies
RIK	Centre of Registers and Information Systems

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1. Introduction

For centuries, the court system has engaged in traditional ways of adjudication, with the parties and witnesses at a physical location and in the presence of a judge or judges, using hardcopy (paper-based) documents and records.

With the introduction of e-governance technologies in recent times, there has been a fusion of the judicial system and information and communications technology (ICT) in justice delivery as the "e-court" system. The e-court system provides an avenue for filing court processes (electronic court filing), presenting evidence and receiving the testimonies of parties and witnesses remotely (Dillon & Beresford, 2014). It has been suggested that this transformation has produced and is capable of fostering the principle of justice by effecting quick and easy dispensation of justice (Aulawi & Asmawi, 2020; van den Hoogen, 2008).

However, there is a knowledge gap in research on steps to take in transitioning to the e-court system. This especially applies to developing countries, since they have had a relatively low success rate at the implementation of e-services. There is a need to discover whether processes and strategies can be built from successful case studies for developing countries that want to amend and adopt the e-court system to their contexts. Therefore, this study seeks to examine the e-court system of two different countries that have attained different levels of development economically, socially and technologically, and make analysis and recommendations that may be useful for developing countries.

1.1 General Background of Study

The justice system has a composite structure, with different interrelationships and activities among parties, law enforcement, judicial officers, advocates and others. These relationships are almost always guaranteed to develop in each lawsuit. For example, since suits are generally instituted in court by originating processes, it is expected that when such processes are filed, the case is duly assigned to a judge and the necessary parties will be served, and so on. However, until recent times (and still in many jurisdictions), there have been several complaints that such seemingly straightforward processes have taken protracted periods. This slows down the dispensation of justice and drastically reducing judicial service efficiency (Mahibha & Balasubramanian, 2020; Dakolias, 1999). Worse still, the more complex processes, like the actual litigation, calling of witnesses and presentation of evidence, linger for too long (Mahibha & Balasubramanian, 2020).

The digital transformation of courts – the adoption of technology in the court system - has been promoted to be a significant solution to these challenges (Ahmed, et al., 2020, 2021). This involves activities ranging from the use of electronic case management systems (Rooze, 2010) to the engagement of virtual court sessions using such technologies as high-resolution video presenters for video conferencing between or among parties in different locations (Saman & Haider, 2013). Although the concept is not new to some justice systems such as that of Estonia, which had begun developing their e-justice service since the early 2000s, it is still newly developed by many others. An example of such recent development is the e-court system in the KRI.

1.2 Problem Statement

The need for an effective electronic court system is increasingly being discovered, especially by developing countries. This has resulted in more clamours for its adoption (Kagbala, Bethel, & Fems, 2018). However, developing countries especially have difficulties and a high failure rate regarding the implementation of e-government solutions. The mere adoption or replication of e-Court, like most other e-government solutions, does not guarantee its success in a new country regardless of its success rate in the foreign context. This presents the fear of undertaking such a seemingly hydra-headed project from the beginning, only to flounder. Therefore, there is a need to unpack how and why e-court has worked so well in the digitally advanced European country, Estonia, and its similar, relatively recent success in the developing areas such as KRI. This unpacking leads to the detailing of necessary tools and solutions to put in place at each step of the transitioning to e-court.

1.3 Objectives of the Study

1 To determine the critical factors that made up the transitioning process for the successful implementation of e-court in Estonia.

2 To determine the critical factors that made up the transitioning process for the successful implementation of e-court in KRI.

3 To compare the e-court transitioning process of Estonia with that of KRI, with particular focus on the factors critical to their successful e-court transition.

4 To give recommendations to intending implementers of e-court, especially developing countries.

1.4 Research Questions

The research questions are as follows:

1. What were the critical factors that made up the transitioning process for the successful implementation of e-court in Estonia?
2. What were the critical factors that made up the transitioning process for the successful implementation of e-court in KRI?
3. How do the successes and challenges of the transition to e-court in KRI compare to those of Estonia?
4. What recommendations can be given to intending implementers of e-court, especially developing countries?

1.5 Research Structure

This research has five chapters. Chapter one gives the introduction, background of the study, problem to be solved, the questions sought to be answered and the research aims. Chapter two focuses on a review of related works. It deals with the theoretical analysis on how technology has influenced the courts and how this has been applied in different contexts. Chapter three describes the research methodology, giving more insight on the research questions and data collection and analysis. Chapter four deals with the results of the research. It explains the critical findings from the two case studies, analysing common and divergent practices and steps taken in their adoptions of e-court. Lastly, chapter five summarises of the research, specifically answering the research questions and giving recommendations to developing countries.

2. Related Work

2.1 Literature Review

2.1.1 e-Government and the Court System

Twizeyimana & Andersson (2019) define electronic government (e-government) as the use of Information and Communication Technologies (ICT) to perform the functions of the institutions and arms of government. Although sometimes used interchangeably, scholars have attempted to distinguish e-government from e-governance. In Broome's (2015) opinion, e-governance describes the employment of ICT to enhance the relationships among public servants and a broader spectrum of stakeholders in the society. E-government refers more specifically to the provision of governmental services, electronically and online, by government agencies to the public to facilitate better interaction and more convenience.

The introduction of ICT to governmental processes is usually coupled with organisational change and aimed at providing better and transformational service delivery in terms of reduced costs, time and effort (Grönlund & Horan, 2005; Odat & Khazaaleh, 2012). Dawes (2008) submits that e-governance has developed to establish new government structures. Although the pace of this development is slower in some services and sectors than others, these aspects can also deliver better stakeholder interaction and service delivery.

The unbreakable link between the dynamic, constantly upgrading nature of information and communications technology and the increasingly sophisticated nature of social trends, human needs and challenges continues to ensure the evolution of e-governance (Dawes, 2008). To this end, the formation and adoption of new e-services or the redesign of existing ones is being anticipated and encouraged across the world. Now, a host of services have been made accessible electronically. For example, e-health provides better access to healthcare; e-taxation ensures an improved tax system; and e-residency allows entrepreneurs of other countries to access certain public e-services within the country offering the e-service (Prause, 2016). Likewise, e-identity ensures that the residents of a state have digital identities and establishes their verifiability online in accessing other e-services. Průša (2015) regards e-identity as a foundational e-service. Hence, as will be later discussed, the development of some e-services in a country becomes much easier and achievable where some other e-services already exist in that country.

e-Court is another important e-service. While the exact origin of the e-court is not certain, some of the earliest documentations of the idea are traced to 1979 when some Korean judges recorded

cases on floppy disks (Charmonman & Mongkhonvanit, 2016). However, the actual filing of documents electronically in Korea did not begin until 2010 (Charmonman & Mongkhonvanit, 2016). Meanwhile, countries such as Singapore had started developing their litigation-management technology in the 1990s with considerable success (Dillon & Beresford, 2014). By 1997, Lederer & Solomon, (1997) had recorded that there were about 10 – 50 high-technology courtrooms around the world. Today, many countries have either adopted the e-court system, are in the process of adopting it, or are seriously considering its adoption.

2.1.2 The Scope of e-Court

In this section, e-court is discussed under two subdivisions which are related to the administration of court cases:

2.1.2.1 Management of Court Documents

- **Electronic Case Management System**

A good case management system is needed for efficient monitoring and administration by court officials of the flow of cases throughout their lifecycle. Electronic case management works with case management software, which is an interoperability platform. These allow for the exchange of data among the court, parties to the suit and systems of other institutions involved. CMS includes the processes of receiving cases, allocating them to the right judges, handling evidence and other documents, receipt of filled processes. A functioning electronic case management system can help improve efficiency in running the court's daily activities and help curb corruption due to the transparency it introduces (Saman & Haider, 2012). This works because data can be more easily stored and accessed by necessary persons through the system.

- **Electronic Filing**

The electronic filing system is one of the essential structures of the e-court system. In a study on its functionality and implications, Fenwick & Brownstone, (2003) explain e-filing as the filing or submission of documents in electronic forms, as against paper form. While there can be many different applications or levels of maturity in e-court systems worldwide, e-filing is a necessary component. Paper-based documents have been filed with the courts over the years and courts have been faced with the struggle to organize and store those many documents, along with the documents originating from the courts themselves like judgements (Fenwick & Brownstone, 2003).

Electronic filing, when completely implemented, eliminates the need for paper-based filing systems, ensuring that case files are managed electronically (Fenwick & Brownstone, 2003). For this reason, Jackson (2007) also tags it the *"collection of documents in a consistent electronic format"* (p. 102). Since it usually works as a consolidated platform, all parties involved in suits can exchange information simultaneously and electronically. The e-filing method not only aims to achieve paperless filing but also works to reduce the number of visitors to the court registry and the time taken to institute actions or make other filings.

A critical factor to be included in dealings on e-filing is the use of e-signatures. Ahmed, Lips, & Draheim (2020), identifying the importance of e-signatures to the e-court system, submit that it saves time, cost, and assures users of the security of the process. e-Filing also involves the following:

- **Electronic Summons**

Since summonses are documents ordering a person to appear before the court, electronic summons is a method of doing this by electronic means. Where the summons is issued against a defendant, matters usually do not proceed until such party has been properly served. This is in line with the principle of natural justice which demands that both sides be heard - *audi alterem partem* (which is latin for "listen to the other side"). Also, in many jurisdictions worldwide, the court is seized of jurisdiction over a matter where the other party is not properly served with the originating processes (Oniekoro & Jemialu, 2014). This puts some more stress on the electronic summons system in ensuring that parties receive documents and that there is proof of such receipt.

- **Electronic Payment**

This feature allows for the payment of court fees, judicial deposits, fine and penalties to courts by online means. Notifications of the payment or acknowledgements of receipt of payment could be sent to the payer for record purposes (Mahibha & Balasubramanian, 2020). This use of electronic receipts prevents the need to use, or scan and upload paper invoices as evidence of payment. Asides from making the payment process easier for users, e-payment allows for making payments outside normal daily banking hours.

2.1.2.2 Conduct of Court Procedures

- **Electronic Litigation (e-Trial)**

E-Litigation (as used, for example, in Indonesia) allows parties in suits to deliver answers, replies, rejoinders, enter various pieces of evidence and receive judgments electronically (Kharlie & Cholil, 2020). e-Litigation involves the collective use of technology during pre-trial and at trial. While the terminology "e-Litigation" is not as commonly used, it could be used interchangeably with e-court, since it does not involve practices foreign to e-Court. It is also concerned with the activities within the electronic courtroom itself. This includes the use of appropriate electronic hardware machines and gadgets including visual display mechanisms such as monitors and digital projectors. The currently used Practice Note New South Wales, Australia, provides for the use of real-time transcript, video conferencing and computers at the bar table in its e-trial system (Supreme Court of New South Wales, 2008).

- **Virtual Trials**

According to Lederer (1999), a virtual trial can mean either of two things. First, it could mean a trial in which all the participants give evidence, witnesses give their testimony, instructions are given and so on entirely electronically. This will be done through some video conferencing platform and in real-time and there will be no physical court appearances. On the other hand, it could refer to the conduct of substantial parts of trials electronically. This could include the remote testification of witnesses. This suggests that the physical court appearance is not entirely dispensed with.

The hope is that it will help reduce logistic challenges that go into having physical court appearances, thereby reducing case backlogs. Also, considering recent events brought about by the global COVID-19 pandemic, the idea of virtual trials has gained more traction as it eliminates the need for busy or crowded courtrooms. For example, the Federal Court of Australia, in 2020, began the mandated use of video conferencing technology in its hearings (Federal Court of Australia, 2020).

2.1.3 Peculiarity of Developing Countries

A study by Heeks (2003) discovered that, despite the cost and glamour that go into the development of e-government projects in developing countries, only 15% succeed, while half fail partly. The remaining 35% end as total failures. While also expressing the high rate of

failure of e-government projects in the developing world, Al Athmay (2013) suggests that this is due to a mix of social, political and economic factors. These include many developing countries' inability to produce indigenous ICT, causing them to import from developed countries. However, more importantly, he identifies the problem of the lack of an unambiguous plan and direction for their e-governance projects.

Another study by Basu (2004) identified that the success of e-government solutions predicated on the existence of the IT infrastructure that had been built. Unfortunately, many developing countries lack this needed infrastructure. The study further revealed that the penetration of technology that could be considered basic to the success of e-government was very low in developing countries, especially when compared to their developed counterparts. This study aligns with the recent UN survey (2020) which identified the lack of digital infrastructures as a major challenge to adopting e-government services in developing countries. The digital divide in developing countries further exacerbates this challenge. Bansode & Patil (2011) indicated that the digital divide due to factors like age, gender and lack of ICT skills, was a significant reason for the common beneficial use of ICT in developing countries. Hence, the necessary foundation for e-government development becomes defective.

Below are a few specific examples of developing countries and their experiences with e-governance in general and e-court in particular:

2.1.3.1 Nigeria

Nigeria has had many attempts at the provision of e-government services. However, it has not had much significant progress on e-court. Olugasa's (2020) study shows that the criminal justice system is fraught, practically entirely, with manual records of cases from arraignment to judgement. One of his research recommendations was the adoption of ICT tools for short- and long-term solutions to some of the challenges faced by the judiciary, less reliance on the physical presence of parties in the administration of justice, and more use of virtual trials**.**

Therefore, since it is quite impracticable to engage in a review of an e-court system of the country, Nigeria's state on delivery of e-services, in general, has been analysed. According to Dibie & Quadri (2018), the e-governance initiatives have not translated into many significant enhancements in service delivery for citizens in Nigeria, neither has it improved the relationship between the government and the citizens. These results were received despite the huge chunks of funds allocated to the acquisition of new technology to provide these e-services.

The research further found that a major challenge that the country faced was bureaucracy and lack of skill among government employees.

2.1.3.2 Bangladesh

Since 2009, Bangladesh has been on the path to establishing a fully functional e-government system by 2021 (Yeasmin & Yasmin, 2020). The country's e-government master plan outlines steps taken and intended steps to achieve this aim. Although there have been achievements and some progress, Liton & Habib (2015) note that challenges still hamper the development of e-government. These challenges include poor IT infrastructure and a low level of needed human resources.

The virtual court system in Bangladesh kicked off in May 2020, in response to the difficulties caused by the Corona virus pandemic, thereby signalling the beginning of the adoption of the e-justice system in the country (Huda, 2020). E-court has been demanded by stakeholders in Bangladesh. It had been anticipated that it will solve challenges like unnecessary delay in dispensing cases and justice, and corruption, which the country's judiciary has faced (Alim, 2018). This system was instituted through the "Use of Information and Communication Technology by Courts Ordinance, 2020", promulgated by the president.

The literature on the instituted virtual courts in Bangladesh is still fragmentary. However, it is known that its introduction comes before the adoption of other e-services like e-payments, e-filing and e-records management, or the existence of a developed legal framework necessary for e-courts (Murshed, 2020).

2.1.4 Background of Case Studies

2.1.4.1 e-Court in Estonia

Although Estonia launched its court information system, e-File, in 2006, the development of e-governance in the country had begun well before then. The e-court system, e-justice in Estonia, was, therefore, a logical upshot of the e-governance mechanisms that were already existing or budding at the time. Kitsing (2011) traced the progress of e-governance in Estonia to the development of internet banking by the private sector. By 2002, about half of all payments for e-government services in Estonia were already being made through internet

banking. Subsequently, the electronic identity function came with the ID cards given to the country's residents (Martens, 2010). Kitsing (2011) reports it as having more advanced and secure functionalities than internet banking. Users of online governmental services could only access them with an electronic identity. Within the same time, the national data exchange layer, X-road, was created. X-road connected the information systems and databases of government agencies and departments, allowing for seamless, secure interoperability and exchanging information. (McBride, et al., 2018).

There have been suggestions that the success of e-governance in Estonia can be highly attributed to its low population (Stephany, 2020). Therefore, this has raised questions about whether the system in the country is one of a kind or is adaptable by other countries with larger, more heterogeneous populations and more complex governmental structures. However, the mere existence of a small population does not guarantee the overall success of e-governance in a country. As Stephany (2020) points out, Estonians neighbours with a similarly small population size do not have the same level of e-governance success. More importantly, while it is true that e-government services can be more easily adopted in smaller countries, a range of other factors was put in place by the Estonian state to ensure its success (Solvak, et al., 2019). These factors are not necessarily country-specific and serve as examples for other countries.

With the introduction of the first set of e-services came subsequently, several other digital tools, structures and policies needed for the implementation of such services as e-court, e-taxation. Some of these were introduced simultaneously with those initial services. One of such tools was digital signatures. The introduction of digital identities to Estonian residents availed them the opportunity to sign electronically. Today, digital signatures are required for a variety of functions, including internet banking transactions. The Digital Signatures Act considers digital signatures equal to handwritten ones, and Martens (2010) argues that in certain situations like company registrations, digital signatures are regarded more highly.

The e-court system began with the development of the 'e-File' by Estonia's Centre of Registers and Information Systems. The e-File system is an information system that allows parties to a suit to file documents and monitor their cases remotely, online. It is a central platform for the storage of electronic documents and communications from different other information systems. It utilizes the X-road infrastructure, which ensures that information, entered once on the system, is exchanged among all involved parties, like the police, court officials, citizens, and lawyers, depending on their relevance to the suit. As with other e-services in the country, the

e-file system can only be accessed with the electronic identity of the users. The system also allows for payments to be made electronically.

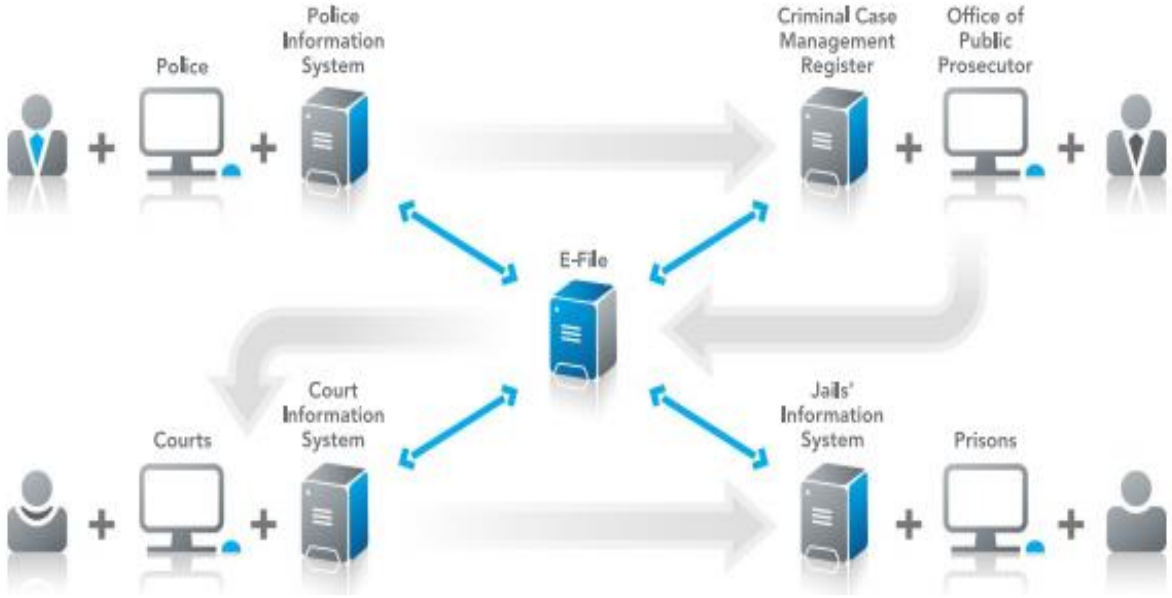

Figure 1: Estonia's e-File Infrastructure (Source: SCOOP4C, 2017)

The e-Justice system has improved the productivity of justice service delivery in Estonia. Center for Security Studies' (2011) report showed that by 2008, the country had been out-performing most other countries in Europe in terms of digital tools they had for their e-justice systems. The study assigned points to countries based on computer facilities provided in three areas - assistance rendered to judges and clerks, case management and administration, and communication between courts and parties. Court cases are now dispensed faster and with less administrative burden than before the e-justice system was developed.

In a bid to speed up the dispensation of justice even further, the Estonian Ministry of Justice and Estonia's Chief Data Officer developed an AI software to hear and decide on small claims disputes (Park, 2020). This incorporation of AI into the justice system ("robot judges") is expected to give human judges the time to deal with more complex cases. This project is being done in furtherance of the existing e-court system.

2.1.4.2 e-Court in the Kurdistan Region of Iraq (KRI)

The e-court system has been implemented in the Sulaimaniyah Appellate Court, one of the four Appellate courts in the KRI (Ahmed, et al., 2020). Although it has been operating in all the courts under the appellate court, e-court is yet to be implemented in the three other appellate courts in the region (Ahmed, et al., 2020).

Ahmed, et al. (2020), in explaining the operation of the e-court system in the court, report that it involves an interoperability network, allowing the flow of information among the courtroom, its departments, and the public prosecution and law enforcement institutions. This facilitates the ability to feed the system with information only once while all participants can access information required for their duties simultaneously. The case management system allows for electronic registration of cases; the use of electronic summons; electronic, automated allocation of cases to judges; electronic notifications to parties involved regarding the case; and the availability of court documents in three different languages (Ahmed, et al., 2020).

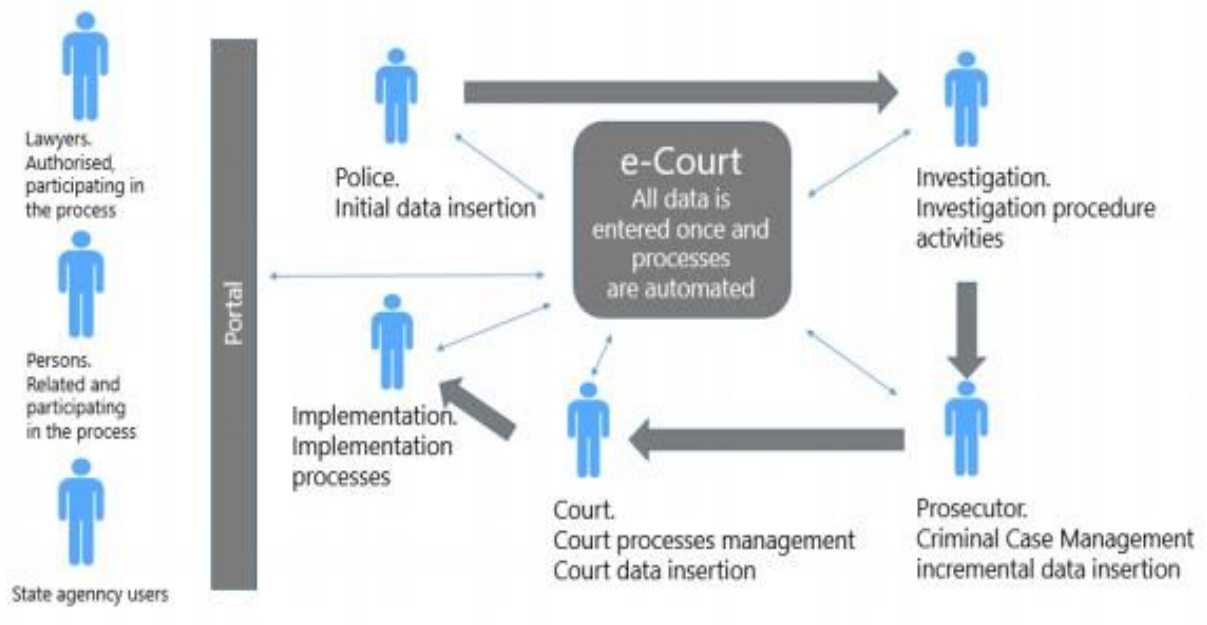

Figure 2: e-Court cooperation in KRI (Source: Ahmed, et al., 2020)

Ahmed, et al., (2020) detailed the new processes, functions and tools introduced to the court system in KRI as e-court. Some of them are, the use of monitor TV screens by the courtrooms to display to parties and visitors the details of cases; allocation of cases to judges automatically by electronic means as against the previous manual allocations; provision of an easy electronic

interface, allowing the public, court officials, lawyers, and other parties to see their roles and permissions; availability of a better management system for service of court summons; electronic notification of persons related to cases regarding adjournments, fees to be paid and other important notices; the ability for lawyers to search for previous cases electronically; and the availability of the system's contents in Kurdish, Arabic and English.

As stated by Ahmed, et al. (2020), other functionalities are speedy creation and registration of documents and the use of bar codes to link digital files of cases with physical files where such files need to be printed on paper. Judges can now study case files simultaneously unlike the paper system where judges had to wait on each other to pass on case files before being able to study them. This burden of the paper system persists in many countries and is a major cause of delay in the disposition of cases. In some other parts, parties have to make a large number of copies of the same document for the court, each party and each judge. The e-court process, therefore, saves a lot of time and resources.

The court system is the first e-service in Sulaimaniyah city (Ahmed, Lips, & Draheim, 2020). This indicates that other e-services such as digital identity and digital signature were absent from the system at its inception. In their research, Ahmed, Lips, & Draheim (2020) argued that, while the e-court system has the impressive features earlier mentioned, the absence of e-signature is a critical factor missing. This absence was found to reduce the level of security that could have been attained in the e-court system. Likewise, the system cannot be entirely paperless since users still have to sign on paper before uploading online.

Ahmed, et al. (2020) also identified the low level of ICT skills among the court staff and other users, and the absence of a legal framework supporting the use of digital technology in the judicial process as some of the other challenges preventing the actualization of the full potentials of the e-court system in the KRI.

While the challenges show that there is room for development and lessons to learn, the e-court system in KRI has had a high level of user satisfaction, because of the *"significant improvements"* (Ahmed, et al. 2020, p. 454) which it has introduced over the paper court system.

2.2 Theoretical Framework

2.2.1 Model for e-Government Adoption

2.2.1.1 Kumar et al. (2007)

Kumar, et al. (2007) engaged in a study of previously proposed models on the measurement of the impact and success of e-government adoption. The identified dimensions of the previous models were: user characteristics, website design, and service quality. Their research showed that a major factor missing in these models was that of citizen/user satisfaction. The frequent use of an e-service and the use of services for more complex functions than mere information seeking can be determined by how satisfied the users are with the e-services. The dimensions were therefore linked towards the aim of user satisfaction. The study proposed a model and recommended that this model undergoes empirical tests to determine its reliability and effectiveness.

i. User Characteristics

Kumar, et al. (2007) identified characteristics like perceived risk, perceived control, and internet experience as factors affecting users' adoption of internet services. It was argued that where users had prior use of the internet, they had more proclivity for its further use. This experience can be evaluated based on how long the users used the internet, how regularly they used it, and their usage pattern. Again, users' perceived risk of losing their personal information to their use of online services affects their use (Pires, et al. 2004; Ejdys, et al., 2019). Security and privacy concerns were identified as major inhibiting factors. Lastly, user characteristics include the perception of users about how much of the flow and use of their information that they can control on e-government platforms and how easily they can navigate these platforms Kumar, et al. (2007). Where the flow of data and information about who has access to a user's data is shrouded in secrecy, users are further discouraged from using e-services.

ii. **Website Design**

The probability of the success of an adopted e-government service also depends largely on the user interface available. Kumar, et al. (2007) identifies ease of use, on the one hand, as a critical factor in designing the website or online platform for an e-service. This ease of navigation could be better fine-tuned by features like personalization and customization for the user. While aesthetics is also important, the content of the website should not be relegated. On the other hand, the online platform must be useful, in that, it improves the users' performance. Here, the content of the website is also a vital contributory factor. Users should be capable of accessing

functionalities or information that they otherwise could not through offline platforms or at a higher speed. The researchers further suggest that using an integrated online portal providing access to all governmental services could help improve the perceived usefulness of e-government.

iii. Service Quality

This component deals with engaging in proper e-service design to create a service tailored specifically for the user. Krull (2003) defines service quality in terms of the opinions of the service held by the customer. It is usually measured by weighing the expectations or needs of the customer against the extent to which the service meets those expectations. Such is achieved where the needs of the users are first studied and understood. This approach is unlike those of some departmental structures or some government organizations, seeking to impel customers' needs into their preconceived plans.

The quality of an e-service is enhanced where it is seen as being user-centred. Existing literature on the subject also align with Kumar, et al.'s (2007) assessment that customer satisfaction should be the end goal of service delivery (Krull, 2003; Chan, et al., 2020). However, as Zain, et al. (2018) maintain, it is commonly held perception that courts have rigid operation procedures, and attempting to adapt to meet users' needs is not the court's concern. From the challenges faced by the judicial system before now, this perception was probably true. However, the e-court reforms going on across many judicial systems suggests a desire for a more flexible system that works and serves users' judicial needs better.

2.2.1.2 Bwalya (2009)

In agreeing with Kumar, et al.'s (2007) model, Bwalya (2009) acknowledged the relationship among all the identified elements of the model. His study was done by analysing the attempted e-government implementation in Zambia, identifying the challenges and making recommendations for a more desirable execution. This resulted in his proposal of three further elements - Government commitment, culture awareness, and adequate and inexpensive IT infrastructure - to be added to Kumar, et al.'s (2007) model.

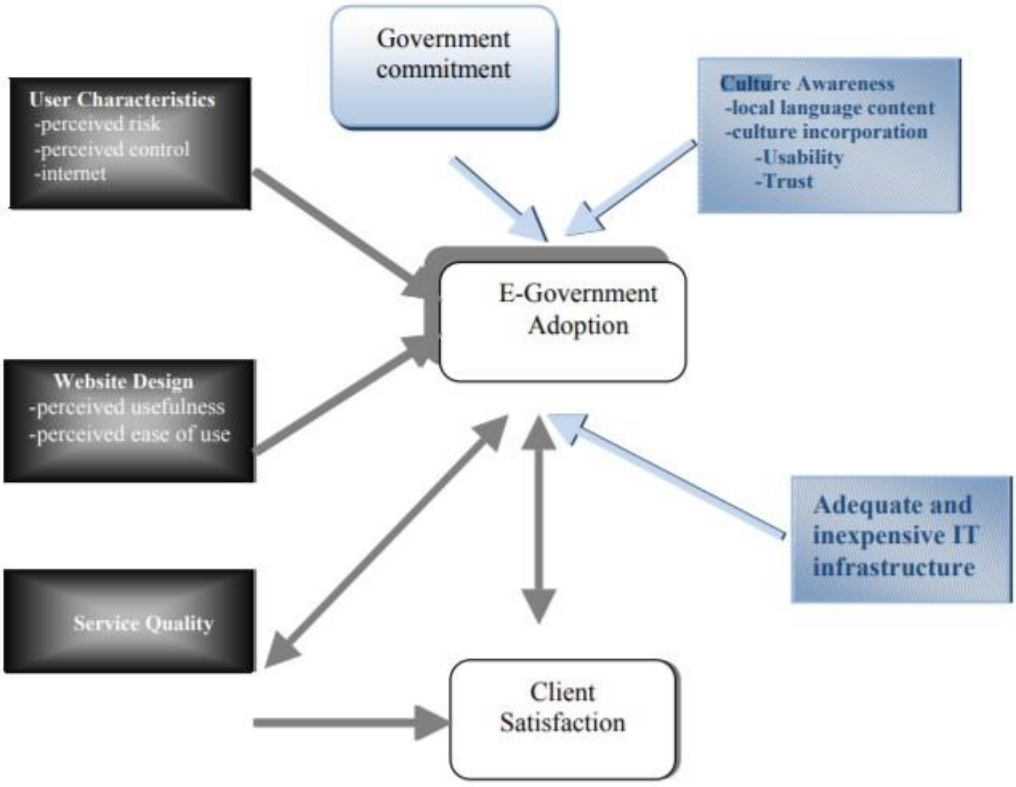

Figure 3: e-Adoption Model (Source: Bwalya, 2009)

iv. Government Commitment

The research by Bwalya (2009) stressed the importance of government commitment in the adoption of e-services. Commitment was identified as often being signalled by the introduction of various ICT plans and e-government strategies or policies by the government. Although some of these policies are not comprehensive enough to effect meaningful implementations, an even bigger challenge arises with government consequent actions. Only a few of the proposed policies are executed by governments of developing countries (Samsor, 2020). Dias (2020) further highlights that political will and a well-coordinated governmental setup must be in place because highly focused strategies must be established and consistently followed up with action.

In the same vein, Putrijanti & Wibawa (2021) posit that the e-court system will only succeed where the government shows "*strong political will"* (p.108). Government commitment is evidenced in the allocation of needed funds for e-court infrastructure and refusal to interrupt the execution of its policies for political gains.

v. Culture Awareness

This deals with the duty to sensitize people about proposed e-governance services (Bwalya, 2009). Since the services being introduced are usually mainly foreign to the intended users, it is pertinent to create awareness of their functions, importance, and use. Al-Jaghoub, et al. (2010), from their research, discovered that the level of awareness created about an e-service affected its level of acceptability. Culture awareness could manifest in the use of local language content, incorporation of culture, usability and trust (Bwalya, 2009).

vi. Adequate and Inexpensive ICT Infrastructure

As earlier noted, various studies have identified the lack or inadequacy of IT infrastructure in many developing countries as a critical reason for their failed attempts at e-governance. Therefore, Bwalya's (2009) model proposes a necessary availability of adequate and inexpensive IT infrastructure. The United Nations Department of Economic and Social Affairs (2020) study similarly presents the affordability and accessibility of ICT Infrastructure as key.

The kind of infrastructure e-court requires includes computer systems, video conferencing facilities and various software. The adequacy ensures that there are enough of the needed gadgets to be used at the courts. However, in some developing countries, more foundational infrastructure might be needed. For example, electricity, which is needed to power the ICT facilities has inconsistent supply in many developing countries.

2.3 Theoretical Analysis

Based on the various studied literature, it is essential to explore specific, outstanding sets of principles that further unravel e-court and its implementation.

2.3.1 Effective e-Service Implementation

The effective implementation of an e-service depends mainly on the strategic use of ICT and not merely introducing the internet or digital technology into public service (Ancarani, 2005). For the desired success, the strategic use of ICT must be incorporated with the ability of implementers to reorganise administrative and internal processes constructively and successfully. As Banerjee & Chau (2004) submit, mere technical adequacy is not sufficient for successful e-service implementation. The beginning of the e-service lifecycle must involve a

balanced management of social and political factors against proper administrative and organisational backdrops.

Technical designs will necessarily include the technologies used, but the social designs will take the social context of the country adopting the e-service into account. This social context includes the population, literacy rate, level of digital divide, and other factors. Both technical and social system designs must be merged in proper reforms. According to Banerjee & Chau (2004), failure to achieve this primary requirement is a reason for many developing countries' failed attempts at adopting e-services. They conclude that the mere introduction of ICT cannot achieve administrative and policy transformations. An e-court system that has only introduced a few electronic features will likely only produce minimal results. This is proof that it has not been optimized well enough to improve service quality (Aulawi & Asmawi, 2020).

2.3.2 Simplicity and Accessibility

It is much better to set up an e-service system by creating a simple and easily accessible one than attempting a complex one since the former has more guarantee of success (Hanseth & Lyytinen, 2010). The ease of using a simple e-service is expected to enhance users' interest in it. Therefore, it might be unnecessary to establish a complete, e-court system with all its features and complexities at the inception. Instead, creating a simple system that works and scaling it with time could produce better results.

Lupo & Bailey (2014) posit that creating a complex e-court system not only makes it difficult for users to understand but likewise increases the costs of implementation that it becomes largely difficult to afford. On their part, Contini & Mohr (2014) also emphasize the importance of lowering the complexity in ICT- enabled legal processes. They point out that there are possibilities of clashes between complex legal requirements and complexities with the requirements of technology. Lanzara (2014) opined that e-solutions for judicial services should fall within lower and upper extremes which he calls *"Maximum Feasible Simplicity and Maximum Manageable Complexity"* (p. 26). By this, he means that an e-service for the judicial system should also not be overly simple that it cannot meet users' needs, yet not so complex, that it is undesirable, not easily accessible and consequently unusable to users.

2.3.3 Institutional Competence and Readiness

It has been suggested across literature that any form of digital transformation requires an evaluation of the existing groundwork and officials. This helps understand the level of novelty

of the solution in the context to which it is to be applied. It also goes to determine the level of competence expected of officials and managers, possible policy changes, and lastly, the needed infrastructure for its application. Hunnius & Schuppan (2013) note that, while ICT has the potential to create or facilitate transformational change, tangible results might not be seen so often due to the presence of public managers who lack the necessary competencies. According to them, these competencies are ensured through proper human resource management, and not merely the possession of ICT skills.

Most developing countries were recognized to have special challenges with institutional capacity to adopt e-government services since 2002 (Banerjee & Chau, 2004). Capacity not only refers to the existence of organizational structures for easy implementation and adoption of services but also the presence of trained, qualified human capital. The establishment of good policy and legal frameworks and security measures also determine the institutional competence for e-service adoption.

Likewise, partnerships and collaborations with other stakeholders are important (Alshehri & Drew, 2010). Apart from the obvious collaborations that must take place among agencies and levels of government, there is a need for partnerships between the public and private sectors. This is due to a range of reasons. The much-needed specializations and competencies needed in specific areas could often be made more easily available by the private sector (Das Aundhe & Narasimhan, 2016). Again, government agencies do not need to have all the manpower necessary for e-service adoption. Leveraging on the private sector's intellectual capital by outsourcing some tasks could produce better results than taking on the organizational hurdles of taking them on.

Lastly, the process of digitizing paper files could be quite wearying, especially when the organization undertaking the digitization has had a large number of paper documents that need to be digitized. Madanan, Hussain, & Khaliq (2018) describe it as a *"very tedious"* (p. 3) process that requires proper planning and actions to succeed. According to them, this could involve specialised equipment, software, and trained staff. Therefore, there is the need to ensure that the digitization of existing legal documents, court files and so on can be done, and practical steps and timeframes should be put in place to ensure that it is done.

2.3.4 Relationship between Law and Technology

Information and communications technology has had an exponential growth rate in the past few decades with fields of human endeavour like commerce and education having to adapt

rapidly to the disruptions ICT has brought about. However, concerns have been raised regarding the nature of the relationship between the law and technology.

Forji (2010) opines that the law has a duty to establish the acceptable social order between and among those to whom the law applies. This duty to influence practically all areas of human interactions ensures that the expected behaviour is clear and the acceptable forms of interaction are legitimized. Apart from defining, regulating, or limiting the powers of the state and its agencies, the law must set out the powers of individuals and their implications on other individuals.

Nyman-Metcalf's (2014) study argued about the impracticability of law on technology preceding the technology itself, suggesting that the law would only be acting on such technology that has not fully unravelled and is not yet entirely understood. Likewise, new laws cannot be enacted or existing ones amended each time technology changes. This is because the law is usually not so easily alterable, at least, not at the pace at which technology keeps advancing. Therefore, there is the problem of possible over-regulation - resulting in the obstruction of the growth of technology - on the one hand, and under-regulation - resulting in uncertainty about the use of technology - on the other hand. Nyman-Metcalf (2014) addressed the dangers of creating too many special laws for e-governance, warning that it could result in the institution of parallel systems. It appears that, while the creation of some special laws for e-governance is inevitable, the existing laws can be better suited to accommodate the dynamics of technological innovations in e-government services.

The challenge posed by a hazy relationship between law and ICT is seen considerably in developing countries. Touray, et al. (2013) maintain that individuals using ICT in these countries have much difficulty with their use, as do the providers of such technology sometimes, due to unclear or inexistent regulations. It could be particularly problematic that the new risks that the use of technology portends might neither be specifically anticipated by the users nor dealt with by the law. For example, questions could arise about what to do where court filings cannot be done electronically due to protracted system crashes, or non-receipt of necessary notifications or leaks of electronic data regarding an anonymous witness. However, if existing laws are accommodating enough, or are amended to be so accommodating, interpreting them to these unravelling situations may be much easier.

3. Research Methodology

3.1 Qualitative Research and Approach

This research was done using qualitative research methodology. It applied the case study research approach and applied this approach on a constructivist paradigm.

It is difficult to have a single definition for qualitative research. However, it can broadly be explained as research involving the collection of text, sound, and/or images (Bauer & Gaskell, 2000). For this study, Drislane & Parkinson's (2011) definition appears more suited: "*(Qualitative research is) research using methods such as participant observation or case studies which result in a narrative, descriptive account of a setting or practice."* A case study is used as an approach to qualitative research. The qualitative case study methodology is the detailed exploration by researchers, of an idea within one or more defined contexts (Rashid, et al., 2019). For Yin (2014), qualitative case study is best used when present-day is to be studied in detail and in its real-life context, and the phenomenon is not easily separable from its context. This exploration is usually done through the conduct of in-depth interviews (Guest, Namey, & Mitchell, 2013).

Qualitative case study is the necessary methodology to use in this study because of the nature of the subject matter and the aims of the research. For practical lessons to be drawn for developing countries' planned e-court adoptions, this thesis explores the process of adoption of e-court in two different countries by engaging stakeholders who participated in the process, to draw out their perspectives on the phenomenon. The research is intended at getting a balanced picture of the existing contexts. A pitfall of case study research is the possibility of overgeneralizing the results of a single case study (Zainal, 2007). Hence, the research was done with two case studies. Also, the choice of the two case studies is informed by the intention to draw a comparison between the two case studies, regarding the different stages in ICT advancement that each of them has. This was done to ensure a balanced outcome that countries from different ends of the technological divide can identify with.

The importance of the perspectives of the participants is brought about as a constructivist paradigm. Constructivism is one of five paradigms of qualitative research (Lincoln & Guba, 2005). It suggests that the reality regarding a phenomenon is subjective, socially constructed, and can only be well understood from the perspectives or experiences of the participants (Adom, Yeboah, & Ankrah, 2016). Therefore, the researcher depends more on the opinions and information given by the participants on the subject matter under study. Creswell &

Creswell (2018) prescribe that, for this method to be effective enough, questions asked should be broad and open-ended. In a nutshell, rather than approach the research with an already established theory, the researcher induces a pattern from the sources of data.

3.2 Data Collection Methods/Techniques

Data was collected for this thesis using two methods: review of existing literature and the use of semi-structured, in-depth interviews of important stakeholders to the implementation of the e-Court in the two case studies. The interviews were conducted on three respondents from each of the case studies. The respondents were taken from different fields that were critical to implementing the e-court system in the case studies. The respondents were legal practitioners and judges, a top official at the company that worked with the government to implement the service, and a top-level government official responsible for the process. For this reason, this research made use of the purposive sampling method in its choice of participants. Purposive sampling will be most appropriate because the participants need to have adequate knowledge and experience about the subject matter being studied and data is to be collected according to the aims of the research (Robinson, 2014).

While there is no specific number for the questions to be asked in all qualitative research interviews, this research adopted Robinson's (2014) suggestion that five to ten interview questions are sufficient.

To test the validation of data collected and improve the validity of the findings, data triangulation was conducted. Patterns from documents, interviews, data from research, and existing literature were equally searched and analysed. Reliance was also placed on theoretical propositions and then the development of a case description.

3.3 Data Analysis Methods

Data collected through semi-structured interviews and existing data were analysed using thematic analysis. Thematic analysis is necessary to elicit patterns of themes from the gathered data without hindrance by preconceived biases. This promotes the trust of the audience in the validity of the results arrived at by the research (Braun & Clarke, 2006).

The research also utilized inductive inferences, by *"hypothesizing a general rule from examples"* (Angluin & Smith, 1983, p. 237). The inference started with general observations

from the data elicited from the case studies. Consequently, patterns were established from analysed data, resulting in generalizations and then drawing of theories and conclusions.

4. Research Results and Discussion

Data was collected from different respondents from Estonia and KRI. These interviewees were chosen based on their involvement in vital aspects of the adoption of the e-court system in these countries. These interviewees represent the major groups of stakeholders to this adoption and users of the service. This represents the purposive sampling technique that allows for participants' choice based on their knowledge of, or experience with the subject matter, which allows them to give a detailed analysis of it. Furthermore, as mentioned in chapter 1, the two countries chosen as case studies were selected based on their affirmed successes in adopting the e-court service.

Table 1: List of Interview Participants

No.	Participants	Details	Country
1.	Participant 1	Former Head of Estonian Court Administration; Practicing Lawyer in Estonia	Estonia
2.	Participant 2	Serving District Court Judge; Former Deputy Chancellor of the Ministry of Justice, Estonia	Estonia
3.	Participant 3	Practicing Lawyer in Estonia; IT law and Data Protection Specialist	Estonia
4.	Participant 4	KRI e-Court Project Software Engineer; Systems Analyst on KRI e-court project	KRI

5.	Participant 5	Serving Member of the Supreme Court of the KRI Former Head of the Committee for Scientific Supervision of the implementation of e-Court, KRI	KRI

Also, the interviews were conducted via two different media. The first was audio/video correspondence platforms - Skype and Microsoft Teams. One of the interview participants also illustrated his discussion with a presentation put forward on Microsoft PowerPoint. These interviews were recorded and subsequently transcribed in Microsoft Word by the author using the intelligent verbatim transcription. Therefore, expressions of pauses, like “um” and “erm” and repetitions words like “and” or “like” which add no extra meaning to the sentences were excluded. The second channel of the conduct of the interviews was the use of emails.

The findings of the research will be presented using the themes elicited by the author. Likewise, these data will be further analysed in this chapter using thematic analysis, and validated through triangulation, by comparisons with the literature discussed. Based on the research objectives, research questions were formulated and the interview questions were asked to elicit responses that could achieve these objectives.

Being a semi-structured interview, some consequential questions also resulted from the responses given. Furthermore, the use of the name of the countries in the questions was specific to the participants. Participants from a particular country were only asked about the e-court system of their country, and no reference was made to the other country.

The author identified three major themes from the data interviews. They are 1. Critical factors responsible for the success of e-court 2. Challenges to e-court implementation 3. Advantages of e-court. In showing the research results, the author punctuates these findings with excerpts from the interview transcripts.

4.1 Research Results

4.1.1 Critical Factors Responsible for the Success of e-Court

Nine critical factors can be identified from the e-court transition processes of Estonia and KRI. As will be further discussed in the analysis of these findings, not all the factors appeared in both case studies similarly at their implementation of the system. In all, nine factors were mentioned by the participants. They are: Active information system; Functioning interoperability platform; User-friendly interface; Electronic ID and signature; Support of stakeholders; End-user participation; Thorough plan and analysis; Updated legal framework and Organizational change.

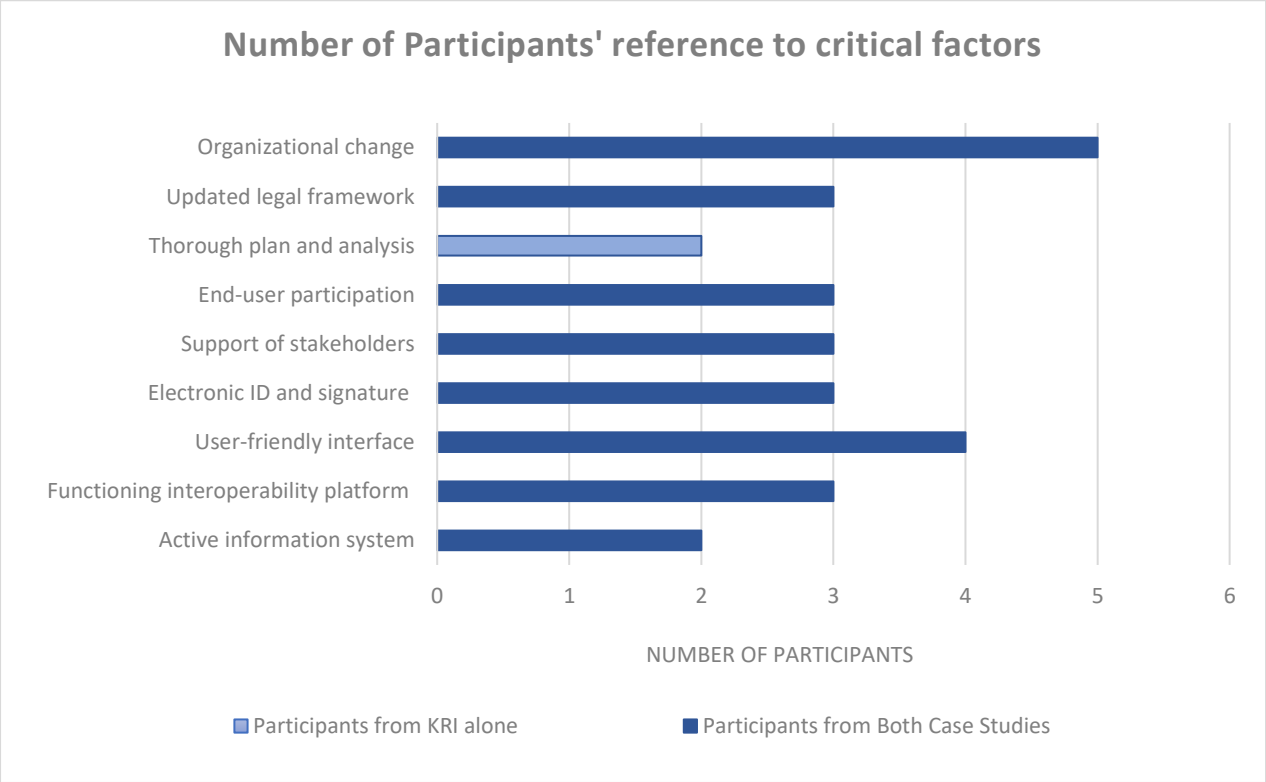

Figure 4: Number of Participants' reference to critical factors

Figure 4 above shows the frequency of the participants' reference to each of these factors.

i. Active Information System

Participants expressed the need for a centralised system where electronic data will be collected and stored. Participant 4, KRI noted that data and court files that were previously held in paper form have now been digitized and kept in a digital database. Similarly, Participant 1, Estonia

stated that Estonia developed a centralized database for all data. Therefore, the courts, law enforcement agencies like the police and prosecutor's office can have one central system to share critical data.

"So, we have one centralized database with courts because the criminal procedures and misdemeanour procedure starts from mainly from police and then end up in court finally. So, we developed ***centralised database for all data****. That was called "e-file".* (Participant 1, Estonia)

ii. Functioning Interoperability Platform

The participants from Estonia identified the X-Road platform as an important system through which the transfer of data across information systems with the e-court system was made possible. This interoperability system was noted to be a tool for the entire e-governance framework.

"And we have decentralised system, but that's not only for the court system, but that's for the whole Estonian e-governance - ***the X-Road****."* (Participant 2, Estonia)

iii. User-friendly Interface

Participants 1, Estonia, and 4, KRI directly identified the need for a user-friendly interface. According to them, this user-friendliness is necessary so that users can easily maximize the e-service. In their opinion, this factor was present in the making of e-court systems in their countries. Participants 2, Estonia and 3, Estonia, while also expressing the huge importance of a user-friendly interface, suggested that the e-court system in their country could be slightly more user-friendly.

"Then we developed the ***portal*** *for our citizens and lawyers. And then we also developed a specialised tool for people working for court files as lawyers, including judges and also attorneys. This is* ***publicly accessible****. This tool is systemizing electronic files in some more logical ways and representing in a way it's* ***easier to access*** *them and read them and make comments and do searches inside them. So, it's easier to work with electronic parts."* (Participant 1, Estonia)

"This system was… implemented in a way that it will be a very modern integrated system, that to be very friendly for all the court staff to use" (Participant 4, KRI)

iv. Electronic ID and signature

Three participants underscored the roles that electronic ID and digital signatures played or could have played in the implementation of the e-court system in their countries. It was noted that digital signatures keep the system more secure and further help eliminate the need for papers in court procedures.

*"We have **secure, authentication** with our ID card or mobile ID or … smart ID, whatever you use."* (Participant 2, Estonia)

"It would be better if you have a digital signature in place; it would be better if you have electronic ID to identify all participant or all users in the system digitally." (Participant 4, KRI)

v. Support of Stakeholders

The interviewees equally made references to the importance of collaborations with the private sector. Participant 4, KRI, being an employee of the company that implemented this system in KRI at the time of the implementation highlighted that, while the government financed the project, the private sector organization carried out a large part of the hands-on implementation. The participant also expressed the close communication and joint effort the company had with the court staff. Likewise, participant 2 expressed the fact that the lawyers using the system are mostly from the private sector therefore the success of the system was largely hinged on their participation and cooperation.

Participant 1 underscored the partnerships between the private and public sector on the project thus:

"During years we used different companies from the private sector to make technical IT work. But we had, like, main public sector partner, like Justice IT Enterprise, I think, how you call it. But they used subcontractors, depending on the issues, from the private sector."

The attitude of the majority of the users was also said to be positive towards the adoption of the process.

*"In general, like Estonian public authorities and also companies are **very open to digitalize** everything."* (Participant 3, Estonia)

*"I also know that **opinions were asked** from different law firms and different courts as to how well is the court system functioning. And there has been some **cooperation** in that regard."* (Participant 3, Estonia)

Lastly, as a major stakeholder in the adoption process, the will and support of the government were emphasized, especially by Participant 4, KRI.

vi. End-user participation

Participant 2, Estonia, having been personally involved in many stages of tests of the e-court system in Estonia over the years, expressed how different versions of the system were brought to be tested by the end-users, and many changed were made over the years to make the system further suit users' needs.

*"All these structures or developments were also **tested very closely with the user**, with the end-users."* (Participant 2, Estonia)

"We had to meet multiple court staff from judges, from clerks, from prosecutors, lawyers and all the roles inside the court", "they established like different committees, one committee of clerks, and one committee of judges. And we had to do to kind of take data from all of them. So huge amount of meetings, like took six months or one year even" (Participant 4, KRI)

In corroborating this, Participant 5, KRI acknowledged being the head of one of the committees set up to participate in the process.

vii. Thorough Plan and Analysis

Two participants identified the need for proper analysis of the project before the commencement of the implementation.

*"**Study the project well before starting** implementation by the presidency of the court"* (Participant 5, KRI)

Participant 4, KRI expressed this need for proper, prior analysis and suggested that this was to make the system of better standard and more suited to the users' needs.

viii. Updated Legal Framework

The interview participants observed that the laws need to be reviewed and updated where necessary to accommodate, legalize, or enforce the e-court system. Participant 2, Estonia noted that the legislature enacted laws to compel legal professionals – judges, lawyers, and other persons using the services of the court – to use the e-court system and other e-governance tools, like digital signatures on court documents. It was also noted that the laws gave users the leave to make signatures on paper and send documents by post where the electronic process was not feasible for them. The participant found this step to be the most critical factor responsible for the success of the e-court system in the country.

Likewise, Participant 1, Estonia highlighted the importance of both legislative enactments and internal organizational regulations in facilitating the adoption of e-court. Lastly, Participant 4, KRI noted that the e-court system needed to have the force of law.

"And I think that the most crucial change was when ***it was made obligatory for legal professionals to use e-court system****, especially lawyers, prosecutors, and also, for example, notaries or, and state institutions for the administrative court."* (Participant 2, Estonia)

"There is definitely need for ***legislative support****… like in laws… but some of them, you need to have some internal regulation."* (Participant 1, Estonia)

ix. Organizational Change

Lastly, all the participants said that the system necessitated a lot of organizational changes. Participant 1, Estonia stated that there were many changes to the old institutional arrangements for the system to be implemented in Estonia. Specific references were made to the merging of old structures and the reduction of personnel in some areas to effectuate more efficiency. These changes were to increase efficiency and eliminate redundancy.

"quite a ***lot of training*** *for everybody who wanted to be trained. We have within the court…* ***a support person****.", "There is also online support".* (Participant 2, Estonia)

Participant 4, KRI also referred to the training lasting about two years which had to be done in the justice system. Also, Participant 5, KRI noted that he was personally involved in the skills development course, to be proficient with the use of the technology.

4.1.2 Challenges to e-Court Implementation

Five challenges to the implementation of e-court were identified from the interviews conducted. They were: 1. The reluctance of users 2. Budgetary challenges 3. Users' lack of ICT skills 4. Imperfect user-friendly interface 5. Absence of other e-governance tools

i. Reluctance of users

The data gathers show that, to some extent, the projects enjoyed support from many of the stakeholders. However, three participants noted that there were also some reluctant or resisting users in each of their countries. The reasons given for the resistance and reluctance ranged from possible prior unpleasant experiences with the use of the internet and technology in general, to inflexibility.

*"There was some kind of **resistance** to the system. The people working in the justice sector, they were **afraid of changes**."* (Participant 1, Estonia)

*"Some resistance from the officials some of the judges and some of the lawyers were **not so willing** to use the system… Some people were very reluctant to use e-tools **because they had bad experience** or they had, they were so **keen on their own traditions** or how they work."* (Participant 2, Estonia)

*"…**Difficulty in persuading** them* (users) *to adapt to the system"* (Participant 5, KRI)

ii. Budgetary Challenges

Two of the participants, one from each case study identified the financial barriers the implementation of e-court faced. For Estonia, the funding for the development and maintenance of the project had to be sourced from the already existing budgetary allocations putting some strain on other activities in the justice sector. The participant also noted that financial/budgetary challenges could put such a project at the risk of being substandard, which could further aggravate the problems the service is meant to solve. In KRI, the funding for the project was stopped due to economic reasons, and the initially planned scaling of the project to other appellate courts, the Judicial Council and Cassation Court has been put on hold.

"There are budgetary restrictions." "Most of the part, we need to find the money inside our budget current, which just cut other costs." (Participant 1, Estonia)

"An economic crisis in the region with the beginning of the project, which negatively affected the idea of expanding the project… No other budgets were allocated for this." (Participant 5, KRI)

Participant 1, Estonia noted that implementation of e-court does not necessarily have to involve fresh allocation of funds, but as was done in Estonia, implementers can work cost-effectively, within existing budgets.

iii. Users' Lack of ICT Skills

Four participants identified the lack of ICT skills among users as a major challenge to its implementation in their countries. For example, participant 4 noted that, in KRI, there had to be two years of multiple training sessions for court staff on the use of ICT in general, and the e-court system in particular, before they could start using it. There was particular reference to the elderly demographic of the court staff and judges as requiring more work on the development of their IT skills. Participant 3, Estonia also suggested that the older users appeared to have had more struggles with using of the ICT systems. Participant 5, KRI acknowledged that he had to undergo the skills development course before gaining the required competencies on the use of the system.

*"**Lack of IT skills** among users, the difficulty of judges, lawyers, and court workers to work on the computer."* (Participant 5, KRI)

*"Some group of people, especially judges are in old ages and their **IT skills are limited**. So, we had to train, and this took, of course, cost and time."* (Participant 4, KRI)

*"Maybe also the fact that some, for example, judges maybe are of the like older generation and maybe **digitalization is a little bit more difficult** for them."* (Participant 3, Estonia)

*"Some lawyers had **difficulties with technical equipment**."* (Participant 2, Estonia)

Participant 2, Estonia also remarked that there had to be several free training sessions organised by the Ministry of Justice for users of the system to develop their skills. This included online support from the Ministry. Also, court staff were specially trained into support persons, who could help out others who had difficulty using the system.

iv. Imperfect User-friendly Interface

In addressing the use of the e-court system upon its implementation, two participants from Estonia suggested that the user interface should be more user-friendly.

"I know that some people who, some attorneys, for example, who use the e-court system have said that the use of it could be a little bit ***more user-friendly****." "Maybe it could be a little bit more user friendly and* ***easier to navigate*** *for the attorney."* (Participant 3, Estonia)

Also, Participant 2, Estonia noted that, due to the constant development which the e-court system undergoes, users can find it challenging to adapt rapidly to frequent changes to the interface. This was identified as being especially difficult, where users need to use the system urgently but first have to familiarise themselves with the changes.

v. Absence of other e-Governance Tools

The participants from the KRI both agree that the e-court system and the process of adopting it could have run more smoothly if there were other e-governance systems in place already. Participant 4 discussed this in the light of e-governance tools like digital signature and e-ID, while Participant 5 said that, since e-government was not the widespread system in the region, the courts still had to deal with other departments which used paper files, thereby slowing down the process.

"That makes a big challenge for us because, in the KRI infrastructure, we lack having digital signature and e-ID right now. For that reason, every paper or document generated from the system has to be printed and signed manually and rescanned to the system. So here we can see that it's a bit slower process." (Participant 4, KRI)

4.1.3 Successes of e-Court

All the participants highlighted a number of advantages and successes that the e-court service has offered their country's court system. Some of the responses are more peculiar to each case study. This will be further discussed in the discussion section.

i. Efficiency and Effectiveness

All the participants agreed that the e-court system has made the courts more efficient and effective. Each participant expressed different ways in which this improvement has manifested. Participant 1, Estonia, noted that the efficiency could be likened to that offered by banks through internet banking. The participant related this efficiency to ease of access to judgements, generation of court documents, and a good search engine in the system. Through presentation form, the participant also illustrated that the average proceeding time for cases had now reduced from 2007 to 2016. Civil cases which took close to 700 days to be dispensed with, at first instance, had improved to taking barely 200 days in 2016. Participant 2, Estonia further noted that now, civil cases are concluded within about 140 days.

Other participants spoke in terms of collapsed time taken to complete tasks, better organisation of files, and reduction of reliance on papers. Participant 5, KRI also notably identified the ease that KRI's e-court now offers researchers the opportunity to obtain accurate data and statistics from the system. This is in line with Participant 1's, Estonia identification of the search engine feature in the Estonian e-court system, allowing users to search for cases, court hearings, and judgements.

*"And I think the **speed** of the processes has been increased especially in civil… cases."* (Participant 2, Estonia)

*"**Speed in the movement of cases** between courts of various degrees."* (Participant 5, KRI)

*"Previously people… were used to transferring a big bunch of cases from one building to another… But right now, the system makes it in a matter of a single moment." "**everything is like in one place**. You can find everything in the specific folder, in the in the e-court system".* (Participant 4, KRI)

*"There is a **much less paperwork** because everything is, well, in the computer.", "Certain **legal obligations are also easier to be fulfilled** through the different functions of the e-court system."* (Participant 3, Estonia)

ii. Flexibility

Two participants from Estonia identified that the e-service has made the court system more flexible. This flexibility was identified in different ways, as it applies to different stakeholders. As a benefit to both the courts and the staff, Participant 2, Estonia, stated that courts now have the opportunity to hire people regardless of the different places they are in the country, and

some of these staff can work remotely. Users with special needs or those with elderly family members can now easily work from home and attend to their family members. The transcripts highlight the additional instances of flexibility that the system affords.

*"It has given flexibility also for **judges to work remotely** while they are, for example, abroad on some kind of training activities… for lawyers also, the **prosecutors to work remotely**."* (Participant 2, Estonia)

"It means that you can work remotely also on these court disputes because you can work from home." (Participant 3, Estonia)

iii. Transparency of Case Distribution

Also, the e-court system was considered to be more transparent than the paper-based system. Participant 5, KRI noted that the allocation of cases to judges was now allocated to judges more fairly and transparently. Participant 4, KRI, observed that this transparency was because "*the system manages this case distribution among judges electronically".* Likewise, Participant 1, Estonia agreed by illustrating in presentation form, that one of the advantages of the e-court system is that it allowed for automated allocation of cases to judges.

iv. Improved Security

Furthermore, the improved security offered by the e-court system was underscored. Participant 4, KRI expressed this as an advantage by comparing it to the paper system where court documents were kept in cabinets that were not secure. Now, the files are kept in digital databases. It helps in

"*preserving session minutes, decisions and case documents and protecting them from intentional damage or disasters and accidents."* (Participant 5, KRI)

4.2 Discussion

4.2.1 Critical Factors Responsible for the Success of e-Court

The data collected through interviews reveal a set of critical factors responsible for the successful transition to e-court in the case studies. Not all the identified factors are common to both case studies simultaneously. Generally, a set of nine factors were obtained. A comparison

of the discoveries from the review of relevant literature with the findings from the interviews conducted presents a consistent identification of these factors as being critical. They are, 1. Active information system 2. Functioning interoperability platform 3. User-friendly interface 4. Electronic ID and signature 5. Support of stakeholders 6. End-user participation 7. Thorough plan and analysis 8. Updated legal framework 9. Organizational change

According to Bwalya (2009), trust is a major component of culture awareness which contributes to citizens' acceptance of an e-service. However, none of the participants made any specific reference to trust in government as a major determining factor for the success of e-court implementation. This is not necessarily inconsistent with the interview results. The participants had revealed that some users were resistant to adopting the service and needed further persuasion to use it. Not all the reasons for this resistance were given, therefore, Bwalya's (2009) proposition involving users' trust in government cannot be invalidated. Culture awareness was presented, firstly in terms of proper understanding of the context where the e-service is to be adopted and tailoring the service to suit that context and secondly the sensitization of the users to adopt it (Al-Jaghoub, et al., 2010). Therefore, the use of different languages predominant among the court users in the e-court systems of both KRI and Estonia, and the consistent training and involvement of users in both case studies show a high level of culture awareness. These manifest as organizational change, end-user participation, and user-friendly interface in this research.

Furthermore, the findings revealed that the existence of an e-governance system in a country facilitates the smooth implementation of e-court in that country or setting and further allows for its optimised use. E-Government tools and services such as electronic signature, digital identity, and a functioning interoperability platform have been proven to be critical factors to the implementation. Bwalya (2009) had postulated the need for an adequate and inexpensive IT infrastructure. While this infrastructure can readily refer to the existence of the needed hardware, the findings from the case studies show that these e-services, software, and tools are equally as vital to e-court implementation.

Lastly, organizational changes conducted by the case studies were highlighted in the findings of this research. These changes included training of staff, restructuring of organizational structures, and collaborations with the private sector. This correlates with Hunnius & Schuppan's (2013) work, which underscored the importance of institutional readiness and competence. It has been found from the interviews that the mere introduction of ICT to the court without the necessary changes will not result in the achievement of the desired results.

The managers, staff, and users of the e-court system need to be built with the requisite skills they need and administrative and internal processes need to be reorganized. Likewise, the work of Alshehri & Drew (2010) which emphasized the need for collaborations between the public sector MDAs and the private sector was proven true, as both case studies in this research engaged the services of private sector companies, especially for the technical aspects.

4.2.2 Challenges to e-Court Implementation

The challenges identified in the interviews and presented in 4.1 above were: 1. The reluctance of users 2. Budgetary challenges 3. Users' lack of ICT skills 4. Imperfect user-friendly interface 5. Absence of other e-governance tools.

While the challenges identified above are common to both case studies, some challenges also appear to be peculiar to each of them. Participants from KRI did not identify the desire for a more user-friendly interface to be a challenge or concern. Likewise, none of the participants from Estonia referred to the lack of existing e-governance services as one of the challenges that they had to surmount in their adoption of e-court.

There was a distinction between the budgetary allocations in each of the case studies. For Estonia, there was no extra allocation of funds for the e-court project for the most part, which necessitated the use of funds from the regular budgets for the justice sector. On the other hand, in KRI, the stoppage of funding for the project has paused the further expansion of the project contrary to their earlier plans. This research has revealed the possibility of difficulties with budgeting and allocation of funds, especially during the process of execution of the project or the total absence of special funding for the project. The interviews revealed the need for planning against these possible challenges.

The challenge of users' resistance or reluctance was discussed in Kumar, et al.'s (2007) model, which identified perceived risk, and prior internet experience of users as some of the user characteristics that could determine the success of an e-service. From the interviews conducted, it was shown that some users had some difficulty with embracing the e-court system due to prior unsavoury experiences with the use of internet services.

No reference was made by any of the participants to the cumbersome process of converting numerous paper files to digital formats as being one of the major challenges of the transition process. It could be inferred that, although the process of digitizing existing court files and

documents could be quite challenging as posited by Madanan, Hussain, & Khaliq (2018) it was not one of the most critical challenges faced by the two case studies in their transition process.

4.2.3 Successes of e-court

Four significant successes of the e-court system were revealed from the case studies: 1. Efficiency and Effectiveness, 2. Flexibility 3. Transparency of Case Distribution 4. Improved Security

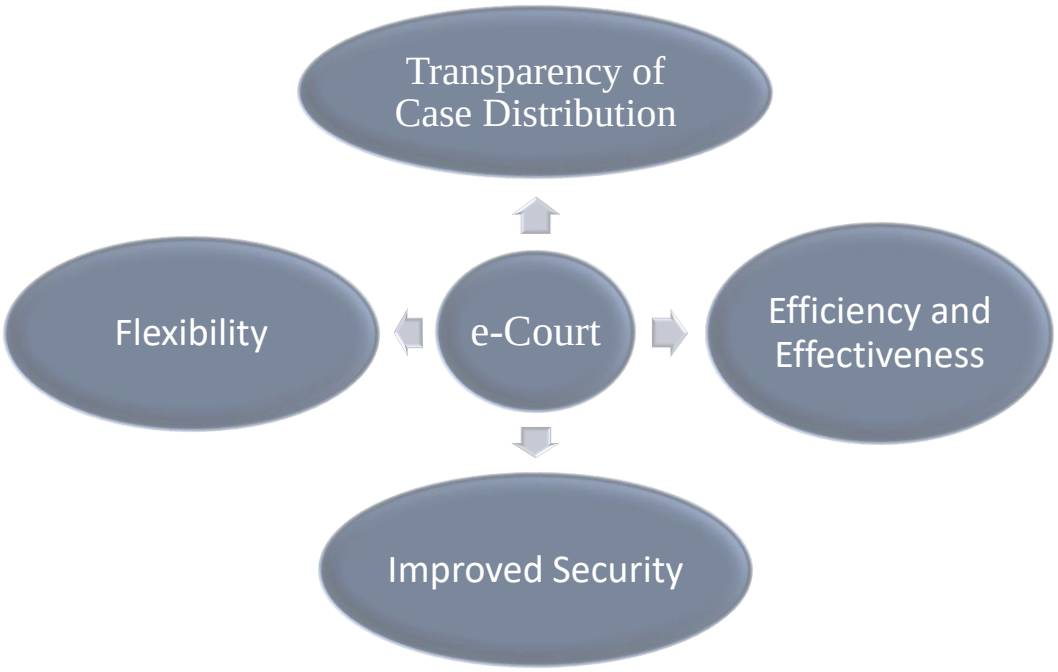

Figure 5: Successes of e-Court

The figure above shows the four significant successes of e-court in KRI and Estonia which were identified during the interviews conducted. The efficiency and effectiveness which e-court offers the court system were well emphasized. It manifests in many ways, like increased speed, reduction of papers, and easier fulfilment of statutory duties of users. The research conducted with the participants from both case studies revealed that the average time taken on proceedings, from commencement till they are dispensed with at first instance, has significantly reduced from what used it used to be before introducing of e-court.

In the interviews, the improved levels of security provided by e-court were particularly referred to compared to the paper-based system. As noted by Ahmed, Lips, & Draheim (2020), the e-court system is usually more secure with the introduction of digital identity and electronic signatures. However, in the case of the KRI, the e-court system is still considered a more secure tool for court files than the paper-based system and storing files in cabinets.

Lastly, Saman & Haider (2012) submitted that the electronic records management system was a major driver for efficiency in courts and that one way it does this is by preventing the misuse of power since it offers a transparent process of case management. This research found this to be valid, as the findings from the qualitative data collected reveal that the automation of case distribution among judges also promotes transparency, which in turn affects the users' opinion on the efficiency of the court system.

5. Conclusion

5.1 Answering Research Questions

This research aimed at investigating the critical factors that facilitated the successful e-court transition process of both Estonia and the KRI and analysing their accomplishments, prospects, and challenges to make recommendations for developing countries that have either started or are considering starting their transition to e-court. In the first chapter of this thesis, five research questions were raised based on the research objectives. Therefore, from the study of relevant literature in chapter 2 and the in-depth interviews discussed in chapter 4, this section answers the questions.

1. What were the critical factors that made up the transitioning process for the successful implementation of e-court in Estonia?

The studied literature showed that the existence of an e-government infrastructure in Estonia is largely responsible for the success of the many e-services later developed, one of which was the e-court system. Further validating these assertions, the interviews conducted helped dissect the components of the e-government infrastructure. Estonia had X-Road, the interoperability platform that formed a basis for creating of the e-File system and allowed for easy transfer of data among court users. There was also the electronic identity system, which made it easy to sign digitally. While there are still some desires for a more user-friendly interface, the research also shows that the e-court user interface has been quite user-friendly.

The enactment of the Digital Signatures Act and other legislative decisions acted to compel the use of electronic solutions and ensure that their use was not unknown to law. Other critical factors revealed by this research were the various organizational changes that were effected, and the support and participation of stakeholders, including the end-users.

2. What were the critical factors that made up the transitioning process for the successful implementation of e-court in the KRI?

This research has shown proper planning and analysis to be a major factor that helped KRI in their implementation of e-court. There was also the support of stakeholders, the active participation of end-users, and organizational changes, involving the establishment of committees over the implementation and constant training of staff.

However, unlike in Estonia, the KRI did not have an existing e-governance system. Therefore, such tools as digital signature and X-Road were absent. Regardless of this, the system has still been largely successful, having achieved a major part of the aims it set out to achieve. But the missing factors were recognized in both literature and the interviews conducted as being very critical and that their absence has caused some avoidable setbacks.

3. How do the successes and challenges of the transition to e-court in KRI compare to those of Estonia?

There are considerable similarities between the successes that KRI and Estonia have had through their adoption of the e-court system. Both cases have had improved efficiency and effectiveness in how court cases are handled. Likewise, they have both experienced a better, more transparent system for case distribution among judges. However, the research conducted shows that Estonia has experienced more flexibility in its legal system through e-court than the KRI as remote work for staff is possible with the Estonian system. Also, users have more than one option to perform their electronic signatures in Estonia, while this feature is not available yet in KRI.

Similarly, some challenges are common to both case studies. Both case studies experienced some resistance of some users, budgetary challenges, and lack of ICT skills among users. Both were able to surmount the challenge of lack of ICT skills among users by engaging in constant training. However, KRI has not been able to scale the system to other courts in the region due largely to budgetary challenges. Meanwhile, Estonia got its funds from the regular budgetary allocations to the justice sector.

4. What recommendations can be given to intending implementers of e-court, especially developing countries?

The recommendations from this research are given in detail in section 5.2 below.

5.2 Recommendations

The author recommends that the following may serve as a checklist or guideline for intending implementers or the e-court system. Each activity is based on the critical factors employed, challenges faced, and successes achieved by the case studies of this research. For easier

interpretation and application of the processes, the author has divided them into three phases making up the implementation of the e-court system.

Table 2: An implementation guide for developing countries

Phase	Activities	Details	Reasons	Priority Level
Pre-Implementation Phase	Developing stakeholders' will	High level of will and support from the government, the heads of the Judiciary, and end-users.	Needed to ensure that: i. the project is not stopped mid-way; ii. the project receives proper funding.	Extremely High
	Thorough plan and analysis	Among other things, stakeholders must: i. study their specific context and current situation for sociological and organizational distinctives; ii. identify the aims and KPIs of the e-court service; iii. examine the challenges they could face and how they plan to surmount them.	A thorough analysis will help implementers to know: i. whether to implement across the country simultaneously or in different regions/states or courts and scale later. ii. other societal problems that require solving. iii. the level of work needed to execute the project.	Extremely High

Phase	Activities	Details	Reasons	Priority Level
		iv. document an e-court transition strategy v. estimated timeframe for completion of each phase of the project		
	Budgeting	Implementers: i. do a proper cost-benefit analysis of the project; ii. work on sources of funds.	i. To prevent wastage of funds. ii. To prevent discontinuation of the project halfway due to lack of funds	Extremely High
	Updated legal framework	i. Study the subsisting laws; ii. Make necessary amendments or new legislation.	i. The laws need to support – or at least, not oppose - the use of e-court and e-governance tools, like digital signatures; ii. Laws may be needed to compel the use of e-court.	Extremely High
	Functioning e-governance system	i. There should be a functioning interoperability platform; ii. e-Governance tools such as e-ID and	i. A functioning interoperability platform will help transmit digital files between and among agencies dealing with the courts.	High

Phase	Activities	Details	Reasons	Priority Level
		digital signatures should be in place	ii. e-Governance tools help to, for example, make the system more secure and eliminate the need for recourse to signing on paper.	
	Collaborations with the private sector	Involvement of technocrats in the private sector to collaborate with ICT departments and other departments of government.	The expertise of the private sector is needed for many of the tasks involved.	Extremely High
Implementation Phase	Creation of active electronic information systems	Setting up the necessary database for electronic court data.	To collect, store, process, and disseminate electronic data.	Extremely High
	Setting up a user-friendly interface	Creation of a non-complex, well-organized interface	i. The end-users should not find it difficult to navigate the system. ii. To create the best possible user experience	Extremely High
	Organisational change	i. Training and re-training of court staff, judges, lawyers, and other end users.	To improve and maximize the human resources for production of the desired results	Extremely High

Phase	Activities	Details	Reasons	Priority Level
		ii. Restructuring departments where necessary iii. Hiring more staff skilled in IT, where necessary		
Post-Implementation Phase	Organizational change	i. Training of staff	It is an iterative process and must be continued even after implementation	Extremely High
	Constant improvement to the system	Delivering updates and upgrades to the system	Security of the system should be improved. System must be made more in tune with users' needs.	Extremely High
	Expansion of scale of the service where necessary	The scalability of the e-court service can be explored to other states/regions or courts.	Necessary where the service had been implemented in basic forms, or within a smaller environment.	High

5.3 Limitations and Future Research Direction

Although the objectives of this study were achieved, some limitations were quite inevitable. The author desired to analyse more case studies for better applicability and more varied public policy adoption. Some of the countries/regions referred to in the literature review of this research, like Singapore and New South Wales, Australia, were also considered to be acceptable possible case studies for a comprehensive study. However, due to time constraints,

it was not possible to further analyse and have interviewees from these regions. Therefore, this will be recommended for further research.

Likewise, a more in-depth study can be done on the national e-court plans, policy documents, and actions of countries or regions intending to implement or already beginning implementation. This is to analyse their prospects of success and identify areas of possible inadequacies. These (developing) countries should be engaged to determine their exact, present-day challenges and to analyse them based on the findings that this research has presented.

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Appendix 1 – Major Interview Questions

A. Participants from Estonia

1. In what way were you involved in the transition to e-court, or do you have experience of using e-court, in Estonia?
2. What major advantages/successes has e-court offered Estonia?
3. What major factors and systems were critical to the success of e-court in Estonia?
4. What slowed down the process? What were the challenges to the success of the e-court service?
5. Do you think the process of adopting the e-court service in Estonia could have been done better or handled in a different way? Kindly explain.

B. Participants from KRI

1. In what way were you involved in the transition to e-court, or do you have experience of using e-court, in the KRI?
2. What major advantages/successes has e-court offered?
3. What major factors and systems were critical to the success of e-court in KRI?
4. What slowed down the process? What were the challenges to the success of the e-court service?
5. Do you think the process of adopting the e-court service in KRI could have been done better or handled in a different way? Kindly explain.

Appendix 2 – Interview Recordings

Find the link to the interviews recorded in this link: https://drive.google.com/drive/folders/1WEdNeWZcg0oCc_tYOe3-dr0-JjoFZK_D?usp=sharing

Appendix 3 – Interview Transcripts

Find the link to the transcripts of the interviews conducted in this link:

https://drive.google.com/drive/folders/1wk-kXDnNNlRrJeXt-ik_FTu6MpEKS6Bo?usp=sharing

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