

**Bachelor's Programme in Economics and Business Administration**

# Generative AI's Role in Reducing Transaction Costs in Finnish Legal Markets

An Analysis of Litigation Process Participants

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### **Abstract**

The foundation of economic analysis lies in assumptions about the functioning of laws. However, there is scarce literature in the field of economics on the effectiveness of legal markets. In Finland, the judicial system faces notable inefficiencies, highlighting the need for productivity improvements.

This literature review examines whether the integration of generative artificial intelligence (GenAI) into the litigation process could reduce the transaction costs it generates. By analyzing both empirical evidence and theoretical frameworks, I explore the potential efficiency gains and challenges associated with the use of GenAI in judicial processes. Empirical studies by Futurice Oy and SiloGen AI Oy suggest that AI can enhance worker productivity. Whereas theoretical work by Acemoglu (2021) cautions that AI implementation in certain tasks could have unintended negative effects, particularly concerning economies of scope.

The findings are mixed; while GenAI holds promise for improving the efficiency of the judicial system, its implementation must be carefully planned and meaningfully executed to maximize benefits and minimize risks.

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**Keywords** transaction costs, GenAI, legal markets, efficiency, economies of scope

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### Tiivistelmä

Taloustieteellisissä analyysissä oletetaan oikeusmarkkinoiden toimivuus. Taloustieteessä on kuitenkin niukasti kirjallisuutta oikeusmarkkinoiden tehokkuudesta. Suomessa oikeusjärjestelmä kärsii merkittävistä tehottomuuksista, mikä korostaa tuottavuuden parantamisen tarvetta.

Tämä kirjallisuuskatsaus tutkii, voisiko generatiivisen tekoälyn (GenAI) integrointi oikeusprosesseihin vähentää niihin liittyviä transaktiokustannuksia. Analysoimalla sekä empiiristä aineistoa että teoreettisia viitekehyksiä tarkastelen GenAI:n mahdollista tehokkuuspotentiaalia ja siihen liittyviä haasteita oikeusprosesseissa. Futurice Oy:n ja SiloGen AI Oy:n empiiriset tutkimukset viittaavat siihen, että tekoäly voi parantaa työntekijöiden tuottavuutta. Sen sijaan Acemoglun (2021) teoreettinen työ esittää, että tekoälyn käyttöönotolla tietyissä tehtävissä voi olla odottamattomia kielteisiä vaikutuksia erityisesti tuotevarionti etujen näkökulmasta.

Tulokset ovat ristiriitaisia; vaikka GenAI tarjoaa lupaavia mahdollisuuksia oikeusjärjestelmän tehokkuuden parantamiseen, sen käyttöönotto on suunniteltava huolellisesti ja toteutettava tarkoituksenmukaisesti maksimaalisten hyötyjen saavuttamiseksi ja riskien minimoimiseksi.

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**Avainsanat** transaktiokulut, GenAI, laki markkinat, tehokkuus, tuotevarionnin edut

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# 1 Introduction

Finnish democracy is built on the rule of law. The rule of law and respect for fundamental rights are key principles enshrined in the Constitution of Finland (Oikeusministeriö, 2024). A significant part of the rule of law is the right to legal protection in Finland. This means ensuring fair criminal procedures and enforcing criminal liability, supported by our legal infrastructure (Oikeusministeriö, 2024). This infrastructure includes for example the police, where individuals can report crimes; the courts, which uphold justice; and the Ministry of Justice, which monitors the courts' activities. This thesis will focus on one aspect of the rule of law: *legal protection*, specifically the litigation process and its effectiveness. While the efficiency of the litigation process, and the legal system, is often assumed in economic theory, there has been limited research conducted on this topic (Hadfield, 2022).

To assess the efficiency of our litigation process, we must start with a general definition of legal markets. Legal markets are markets for goods and services that fulfill legal objectives, such as ensuring regulatory compliance, managing legal liability, or leveraging legal procedures, substantive rules, or formal rights (Hadfield, 2022). After defining legal markets, we can examine the types of goods offered within these markets. The provision of legal services requires expertise gained through investment in specialized human capital. As a result, legal services are experience goods – where quality cannot be assessed before use – and may even be credence goods, where quality cannot be fully evaluated by non-experts, even after consumption (Hadfield, 2000). An example of a legal good or more specifically a legal service, is the assistance provided by a lawyer during a trial. Consequently, when legal markets operate efficiently, the marginal benefit consumers gain from achieving legal objectives should equal the marginal cost. Hadfield argues that our legal markets are producing low-quality and inefficient legal goods and services, as the market options available to consumers yield too little benefit compared to what a more efficient market could provide. Considering a consumer's objectives in the litigation process, one could argue that their primary goal is to minimize the impact of disputes on their business or personal life, or to achieve business or personal aims

through legal mechanisms such as contracting or regulatory compliance. For these objectives to be met, particularly when a case proceeds to court, an effective litigation process is essential, where all participants – judges, jurists, prosecutors, plaintiffs, and defendants – act efficiently, minimizing their transaction costs.

The second factor to consider when evaluating the efficiency of litigation process after assessing consumers' legal objectives in legal markets, is to ponder whether lawyers are the lowest cost means of achieving legal objectives. Are legal services being produced with the optimal combination of technology and labour? According to Hadfield (2022), almost exclusively the market for lawyers is analysed when evaluating the effectiveness of legal markets. Lawyers' expertise is just one factor to consider when answering these efficiency questions. We cannot define quality solely in terms of lawyers, as they are not the only means of achieving legal objectives. Could artificial intelligence fulfill legal objectives more effectively than a lawyer? That we are going to look in this thesis. In the long term, in efficient legal markets, we should expect to see innovations in how we meet the fundamental objectives of law (Hadfield, 2022).

This thesis will examine the Finnish legal markets, specifically focusing on how transaction costs from using legal goods in the litigation process could be reduced by generative AI to enhance overall welfare. This thesis will be literature review as integrating artificial intelligence in law industry in Finland is quite a hot topic and had not been explored before. Basically, with the skills I possess it would be quite challenging to undertake an empirical or theoretical work of my own.

The relevance of this thesis lies in the potential cost savings associated with litigation. These reduced costs could increase welfare and benefit all parties involved in the litigation process. For example, lowering transaction costs could make legal aid more accessible. Additionally, as participants in the litigation process face less administrative burden, they can allocate their time to other productive activities. This literature review examines the potential of using generative artificial intelligence in litigation as a tool to reduce transaction costs and enhance the productivity of legal proceedings. Automating routine tasks, such as contract drafting and legal research, could lead to significant cost savings, faster processes, and better allocation of legal

expertise, thereby improving overall market efficiency. Moreover, increased efficiency could enhance market functioning by enabling more transactions that might otherwise be deterred by high legal costs (Hadfield, 2022).

The objective of this literature review is to answer the research question:

*What is the current state of the litigation process in Finland: Is there potential for increased efficiency through reduced transaction costs by applying generative artificial intelligence?*

In addition to the posed research question this thesis aims to give a comprehensive understanding of the following questions:

- *What is the current state of the litigation process in Finland?*
  - *What are the transaction costs in litigation?*
- *Could generative AI help to cut down the transaction costs?*
- *What are the threats and opportunities of implementing AI in the litigation process?*

The rest of the thesis is organized as follows. Chapter 2 introduces the general information of legal industry. First, we go through the current landscape of the law industry in Finland. Consequently, we discuss the current state of the litigation process in Finland. Now that we have comprehended the legal infrastructure in Finland, chapter 3 focuses on the transaction costs and the impact of the litigation process on its parties. In chapter 4, we will examine generative artificial intelligence as a solution to reduce those costs. We look closer two recent study projects done in Finland to integrate AI in law industry. After that follows a discussion of generative AI's pros and cons. Lastly, chapter 5 concludes.

## **2 General information**

### **2.1 The legal industry**

The legal industry is deeply rooted in our everyday lives, with legal infrastructure influencing everything from how we drive and work to how we protect our rights. In this chapter, we first examine the current landscape of the legal industry in Finland. Once we have established a foundational understanding of the industry, we will proceed to the specifics of the litigation process in Finland.

#### **2.1.1 The current state of the legal industry**

The legal industry begins with the laws themselves. Finland's current legal framework was established after the country declared independence in 1917 (Meinander, 2013). The Finnish Constitution initially adopted Montesquieu's doctrine of the separation of powers: legislative -, executive -, and judicial power. Over time, the original model was abandoned by tightly linking the legislative and executive powers to each other. In Finland, the separation of powers is structured as follows: legislative power is held by Parliament, executive power by the President and the Council of State, and judicial power by independent courts. However, the separation of powers is not fully realized, as some individuals may participate in both the creation and implementation of laws. The executive power is partially dependent on the legislative power, as the government must maintain the confidence of Parliament – a principle known as parliamentarism.

The current state of the legal industry is significantly affected by digitalization, as well as increasing globalization and internationalization. We will only discuss digitalization as it is relevant in this thesis. The legal industry in Finland is experiencing digital transformation. Legal tech tools, including automation, AI-driven contract analysis, and legal research platforms, are becoming more commonplace. In this thesis I am going to introduce two studies conducted in Finland where the idea was to implement generative AI into legislative settings. First study was made for the Ministry of Transportation and Communication (Futurice Oy, 2024). The second

one was for the Prime Minister's Office and the Ministry of Justice (SiloGen AI Oy, 2024).

This digitalization has led to many law firms adopting digital tools to enhance efficiency and reduce costs. This megatrend has also downsides. One of them being cyber security. Cyber security is at risk when innovating new and something we do not know that well. That is why cyber security is currently a hot topic. For instance, lawyers might use AI tools like ChatGPT to reduce costs by generating document drafts or summarizing case materials. While these tools can save time and resources, they raise critical privacy concerns. Who can access the sensitive case materials? And how can confidentiality be maintained in such a system? Legislative power should focus on making laws for firms and people to adopt to mitigate the cyber-attack risk. At the same time laws should be evolved to match the high volume of possible victims when a cyber-attack occurs. We have seen this in the cyber-attack on Vastaamo, where the victim count rose up to 30,000 (Mäki, 2022 p.4) and in the case of Helsingin kaupunki, which in turn affected hundreds of thousands of victims (Valtioneuvosto, 2024). Legal markets are divided into the public and private sectors. This thesis focuses on the public sector, as litigation is handled exclusively by courts. However, we also touch on the private sector, as jurists and lawyers involved in litigation operate within that domain.

### **2.1.2 The current state of the litigation**

All courts are independent in exercising their jurisdiction. There is three-tier general court system. District Courts (Käräjäoikeus) handle civil, criminal, and petitionary cases. Most litigation starts at this level. Courts of Appeal (Hovioikeus) serve as the appellate courts for decisions from the district courts. They mainly deal with legal questions but can re-examine factual aspects as well. Supreme Court (Korkein oikeus), the highest court in Finland, primarily handles cases of great legal importance or precedent-setting matters. Besides general courts there are Administrative Courts and the Supreme Administrative Court as the final instance in administrative judicial procedure matters. Special courts include the Market Court, the Labor Court and the Insurance Court. (Tuomioistuinlaitos, 2024).

Finland's legal system is consistently ranked among the most transparent and least corrupt in the world, contributing to high public trust in the judiciary (Valtioneuvosto, 2023). Courts in Finland are generally seen as impartial and efficient, though there has been criticism regarding the length of some proceedings, especially in civil and commercial cases. Finland has been working on reforms to speed up court processes and reduce costs. For instance, the Code of Judicial Procedure has been amended several times to introduce simplified procedures and encourage the early settlement of disputes. Finnish courts place a strong emphasis on upholding human rights, as guaranteed under the Finnish Constitution and the European Convention on Human Rights (ECHR). In fact, the problem in our litigation process seems to be the time demanded to handle the cases and expenses it creates.

Litigation in Finland can be relatively expensive, particularly for lengthy and complex cases. While the "loser pays" rule applies (the losing party is generally responsible for the other party's legal costs), legal expenses can still be a concern for individuals and smaller businesses. To address these concerns, Finland provides legal aid for individuals who cannot afford the costs of litigation. Legal aid covers lawyer's fees and other necessary expenses. Insurance for legal expenses (such as included in homeowner or business insurance policies) is also common in Finland and can cover litigation costs. As Hadfield (2022, p.1266) emphasizes: "The core problem is that law is too expensive and low quality because there is too little innovation in the production and distribution of legal goods and services", we get a good reason to look closer Finland's litigation process expenses and observe the possibility to reduce those expenses with generative AI in the following two chapters.

Lastly, we look closer to the current state of the judicial institutions. They are experiencing significant overload (Huovinen & Alanlaatu, 2022). Below, you will find case data from District Courts, Appeal Courts, and the Supreme Court. The tables provide information on the number of new, resolved, and pending cases in these courts from 2019 to 2023. These tables should finally convince you of the importance of exploring the potential of AI to reduce transaction costs in litigation as the number of cases per year is quite high for small country.

	<b>New cases</b>	<b>Handled cases</b>	<b>Pending cases</b>
<b>2023</b>	575 845	546 191	168 557
<b>2022</b>	511 715	504 220	139 373
<b>2021</b>	545 574	555 150	132 359
<b>2020</b>	526 296	543 805	141 936
<b>2019</b>	577 561	548 631	159 444

**Table 1:** Overview of new, handled, and pending District Courts cases per year from 2019 to 2023

	<b>New cases</b>	<b>Handled cases</b>	<b>Pending cases</b>
<b>2023</b>	7 827	7 795	4 314
<b>2022</b>	7 899	7 855	4 283
<b>2021</b>	8 226	7 815	4 238
<b>2020</b>	7 368	7 697	3 827
<b>2019</b>	8 467	8 225	4 156

**Table 2:** Overview of new, handled, and pending Appeal Courts cases per year from 2019 to 2023

	<b>New cases</b>	<b>Handled cases</b>	<b>Pending cases</b>
<b>2023</b>	1 888	1815	947
<b>2022</b>	1 875	1 922	866
<b>2021</b>	2 006	1 858	904
<b>2020</b>	1 883	1 887	751
<b>2019</b>	2 029	2 078	742

**Table 3:** Overview of new, handled, and pending Supreme Court cases per year from 2019 to 2023

### **3 Theoretical background of transaction costs**

This chapter examines transaction costs. First, we provide a clear definition of transaction costs. Then, we explore from which those legal transaction costs are from. After introducing these costs, we address why transaction costs tend to be particularly high in legal markets. Finally, we observe why they are important to analyse in the context of legal domain and discuss their significance.

#### **3.1 Transaction costs in litigation**

Transaction costs are expenses that people and businesses incur when they exchange goods and services. For example, the financial costs, as well as the time it takes to find someone with whom to exchange, to negotiate the exchange, and to enforce the agreement and resolve disputes afterwards. While it might not seem obvious to classify the costs of using legal services as transaction costs, they often arise in situations where disputes need to be settled. And where better to find disputes than in a courtroom? Therefore, I argue that many cases handled in courts contribute significantly to dispute solving transaction costs, with expenses like hiring a lawyer being a major factor in their accumulation. In Coase's (1960), *The Problem of Social Cost*, he theorized that without transaction costs people would be able to easily negotiate with each other when conflicts arose to arrive at solutions. However, this ideal scenario does not reflect reality. In the real world, transaction costs are prevalent and can hinder the bargaining process needed to settle disputes. Coase's key insight was that the level of transaction costs is affected by legal rules, including property rights. Basically, good legal rules keep transaction costs at minimum, and thus, help keep disputes to a minimum. As Coase explained, it is important to keep transaction costs low so that more economic activity can occur, which makes people better off. The central question now is: how can our legal institutions further reduce and minimize transaction costs? Specifically, we will examine how generative AI can help reduce the transaction costs that are unavoidable in economic activities. Before that, however, we look closer into the transaction costs itself in litigation.

## 3.2 Origins of transaction costs

The practice of law remains largely a human-capital-intensive, personal service industry (Hadfield, 2022). Lawyers typically meet with clients in person, communicate via phone and email, and share electronic documents. Today, private practitioners mostly charge for their services on an hourly basis, a billing practice that became standard in the mid-20th century (Shepherd and Cloud, 1999). In the following section, we outline the supply and demand for legal services and examine how these interactions give rise to transaction costs.

The first party to mention in the litigation process is the judge. There are a total of 36 courts in Finland, where approximately 3,500 people work. About one-third of that personnel are judges (Valtiolle, 2024). Judges receive their salaries from the government. In a judicial case, a judge must review all the documents and evidence and carefully deliberate on the decision they are about to make.

The second party, who also operates on the private side and receives their salary from the government, is the prosecutor. In Finland, there are about 457 prosecutors (Syyttäjälaitos, 2024). Like judges, they must thoroughly review all materials related to a particular case. Additionally, prosecutors prepare their arguments: what they will present in defence of their position, which laws should be applied to the case, and what counterarguments the opposing party might use.

The third party, who also performs a similar role, is the lawyer or jurist. Lawyers and jurists are usually private operators. However, in Finland, individuals can also receive legal aid from the government. There are approximately 2,200 lawyers, which represents about 15 percent of the 20,000 working Finnish jurists (Asianajajaliitto, 2024). Of these, around 2,100 lawyers work in private law firms, while about 100 serves as public legal assistants in state legal aid offices. Only lawyers, public legal assistants, and licensed trial assistants (so-called licensed lawyers) are allowed to assist in court appearances. There are approximately 1,600 licensed lawyers in Finland (Asianajajaliitto, 2024). In addition to the prosecutor's responsibilities, lawyers and jurists interact directly with clients, holding meetings to gather as much information as possible to build a strong case. All this work generates expenses,

which translate into transaction costs. In some cases, as Coase noted, legal rules alone are insufficient to determine property rights, making these transaction costs an integral part of the process.

The final two parties in litigation are the plaintiff and the defendant. According to Statistics Finland, in 2019, the police, customs, and border guards recorded 452,800 criminal law violations. A total of 300,400 individuals were suspected of committing 275,000 crimes under the Criminal Code. Additionally, 289,900 individuals and 110,900 companies or legal entities were registered as plaintiffs. Not all crimes necessarily have a plaintiff. These two parties do not incur the expenses directly but act as intermediaries in the payment process.

### **3.3 Reasons for high transaction costs**

High transaction costs in legal markets may be due to factors such as competition in legal markets, the bargaining power of lawyers (who are skilled negotiators), and the possible asymmetry of information between law scholars and ordinary citizens. The most relevant reason litigation costs being high in this thesis is that the work that could be done by for example paralegals and artificial intelligence is still done by judges, prosecutors, jurists and lawyers themselves. Therefore, we will focus solely on that angle.

The first problem that is the cause for high cost is that some jurisdictions' regulatory regimes restrict the production of legal goods. They do this by allowing only licensed lawyers to act in the legal field (Hadfield, 2022). It goes without saying that this kind of exclusion hinders economic activity, as alternative business models and suppliers are unable to introduce their products to the market. In Finland, only lawyers, public legal assistants, and licensed lawyers can represent clients in courts. However, it is not prohibited to use another agent to do the work behind the scenes. To the best of my knowledge, lawyers still perform the work themselves or at least have it done by law graduate.

The second problem is that the legal work might not be done in the most efficient way. To date, lawyers' work involves handling information from which they develop

insights. As their work is heavily based on information, they could implement generative AI to ease their workload and simultaneously reduce the expenses their work generates. Practically, lawyers provide information to lay people and businesses about cases and the laws they affect. They transmit information to others by submitting forms, applications, and documents. With the knowledge gained, they also try to predict how legal institutions, like district courts, are likely to implement rules. Based on the analysis of this information, they devise strategies for designing organizations, transactions, goods, and services. They also make recommendations on managing potential and active disputes. Of course, all these types of information-based services are increasingly provided in the modern economy through technology that consumers and businesses can directly access. The lack of technology usage in the legal industry in Finland keeps the costs high.

### **3.4 The significance of transaction costs**

The range of legal rules is dense. It would take forever to read the whole legislation. In practice Coase's theorem should work then? As we have previously discussed, without transaction costs people would be able to easily negotiate with each other when conflicts arose to arrive at solutions. But this is not the case in real life. Transaction costs do exist in real world, and they do impede the bargaining that could be used to resolve conflicts. Now the problem is the mandatory costs mediation of disputes causes.

Only few can afford to purchase legal services. Law governs the vast majority of daily interactions for ordinary consumers and citizens, including aspects of employment, housing, health, and family relationships. Over time, most of these laws become increasingly complex and fragmented. This means that successfully navigating a wide range of economic choices partially depends on having access to legal assistance to understand the rules (Hadfield, 2022). Hadfield introduces many surveys and studies in his review which assess the prevalence of legal problems among individuals and households, as well as the extent to which legal assistance is sought. These studies provided insights into the legal needs of the American population and

the challenges faced in accessing legal services. As both The United States and Finland are western countries, I presume that those same studies also present well the Finnish legal problems. One of his surveys focuses on legal needs. According to this survey, more than 50 percent of all American households encounter at least one significant legal issue in their lifetime, with the average being two or three instances where legal assistance would be valuable (Hadfield & Heine, 2015).

The principal reason that so few individuals and small businesses avail themselves of legal services is cost and availability (Hadfield, 2022). There is a lack of studies of the use of legal services, but we can say without further empirical investigation that few can afford legal aid when the average cost to ordinary consumers is roughly from 225 € to 345 € an hour including VAT and to companies it ranges from 240 € to 275 € an hour plus VAT (Defensia, 2024). Nearly 40 percent of Americans are unable to cover \$400 in unexpected expenses (Durante & Chen, 2019). Given legal fees ranging from €225 to €345 per hour, it quickly becomes unaffordable for nearly everyone except those in the top income tier to secure legal assistance.

## **4 Generative AI in litigation**

Litigation costs are not only high due to the high hourly rates for lawyers previously mentioned, but also because complex rules and procedures are time-consuming to interpret and implement. Additionally, these rules can lead to errors, conflicting beliefs, and wasteful strategic interactions. In litigation some cases might have documentation well over thousand pages. As we have discussed before it is not only lawyers who reads the material but also judges and prosecutors. The problem does not end at reading. One has to digest and summarize the information to make competent allegations and decisions from it. Today, we have natural language processing (NLP) and, increasingly, machine learning (ML) technologies that could, for example, automatically analyse legal documents and provide users with straightforward information and advice (Hadfield, 2022). Perhaps we would not need to visit a lawyer's office at all. Instead, we could resolve our issue at home through an online service provider. If that did not work, we could then go to a lawyer, who would use generative AI to streamline the process and make it more efficient.

To make clearer what are we working with, we define what is generative artificial intelligence (GenAI). We perceive AI to be a diverse set of computational procedures or techniques (such as ML algorithms) that based on data, perform tasks to varying degrees of autonomy that would be considered intelligent if performed by humans (Turing, 1950; Koulu, Sankari, Hirvonen & Heikkinen, 2023). GenAI signifies that AI creates new content and ideas, like images and videos, and reuse what it knows to solve new problems. In our context, in legal industry, we do not want it to create laws that does not exists. We want it to generate text with the information already existing. In other words, it has to be limited to only make decisions based on existing literature.

In this part of the thesis, we will take a closer look at the implementation of GenAI in litigation and the opportunities and threats it poses. We will do this by reviewing both microeconomic and macroeconomic literature from the field. Additionally, we will discuss two GenAI case studies conducted in the Finnish legal markets.

### **4.1 Generative AI's opportunities**

In this part we explore the productivity gains implementing GenAI into litigation process might have. Existing literature does not indicate clear evidence on the productivity impacts of implementing AI into for example some firm. Brynjolfsson, Li, and Raymond (2023) studied the impact of generative AI on productivity and worker experience in the customer service sector. They found that AI assistance increases on average 14 percent of worker productivity, including a 34% improvement for low-skilled workers but with minimal impact on experienced and highly skilled workers. Choi and Schwarcz (2023) conducted research on how much AI assistance affects the result of a law school exam. They found that the worst-performing students benefited enormously from AI, with gains of approximately 45 percentile points, while in contrast the best-performing student got approximately 20 percentile points worse grades, when given access to AI. Both studies reported heterogeneity in their findings, suggesting that AI assistance would be most beneficial to those at the bottom of the skill distribution, potentially acting as an equalizing force in a notoriously unequal profession.

To make the heavy workload from entities working in litigation process lighter, the most relevant opportunity is assisting with decision-making (Littman et al., 2021; Choi and Schwarcz, 2023). AI approaches offer several ways to assist with decision-making. One method involves summarizing data that is too complex for easy human comprehension. This summarization technique is increasingly being used or considered in various fields that require extensive text analysis – such as monitoring news media, conducting financial research, managing search engine optimization, or reviewing contracts, patents, or legal documents (Littman et al., 2021). Beyond summarization, AI also aids in managing complex information by helping to make predictions about future outcomes, a process sometimes referred to as forecasting or risk scoring. Forecasting could reduce litigation cases as case owners could see potential outcomes and realize, for example, that the chances of winning are low. However, Littman notes that these forecasting systems typically have limitations and biases based on the data on which they were trained. Therefore, when using forecasting, one must be aware that there is potential for misuse if people over trust the predictions.

In Finland, efforts are being made to utilize generative AI in the legal field. Petteri Orpo's government has set a goal to be a frontrunner in implementing digitalization and artificial intelligence with a people-centred approach (Futurice Oy, 2024). When applied effectively, these technologies could significantly enhance citizens' quality of life, increase firms' competitiveness, improve labour availability, and streamline public administration. To support this vision, a few pilot projects have explored how generative AI might be integrated into the legal sector in Finland. In the following paragraphs, I will introduce two studies aimed at advancing this governmental goal.

#### **4.1.1 Generative AI supporting legislative drafting**

First study was for the Ministry of Transport and Communications, conducted by Futurice Oy a technology and innovation consulting firm (Futurice Oy, 2024). They examined how generative AI can support preparatory work in the early stages of law drafting. In the pilot, Finnish language models (e.g., FinGPT, Poro) were further trained with legislative texts and related materials. The aim of this enhanced language model was to support legal drafters in the preliminary stages of law preparation, particularly in the gathering and reviewing of relevant materials. The objective was to streamline the analysis required for legislation involving large amounts of data and to advance Finland's strategic autonomy in the field of AI. A service demo with a chatbot interface was developed within the project, enabling legal drafters to ask questions related to legislation. The project revealed that Finnish language models are not yet at a sufficient level. As Finnish language models are still being developed to become more effective, it is advisable to support this expert work with efficient international language models. These can be replaced with Finnish models as soon as they reach the maturity level required for legislative drafting. The project created valuable insights into the applicability of Finnish language models in legislative drafting and identified steps for future development to enhance their efficiency in this field. Clear potential was identified for improving the efficiency of legislative work. (Futurice Oy, 2024)

#### **4.1.2 Generative AI producing statement summaries in support of legislative drafting**

The second study was for the Prime Minister's Office and the Ministry of Justice, conducted by SiloGen AI Oy (SiloGen AI Oy, 2024). In a pilot AI was used to create draft summaries of public consultation responses with the help of generative AI. The AI tool generates a preliminary summary of the received responses, which the legal drafter then refines. It is essential for the AI tool not only to produce the final summary but also to provide a list of key observations and sample feedback to consider. This ensures that all relevant information is taken into account and that the feedback is as useful as possible. The demo solution used in summarizing consultation responses has shown promising results, offering valuable raw data and preliminary summaries for the drafters. The AI tool has been effective in processing large amounts of data and producing coherent summaries that follow the consultation structure. The language used in the summaries is generally clear and understandable, with human input focusing mainly on enhancing the content. However, the demo solution has also produced inaccurate and incomplete interpretations of feedback, which has complicated distinguishing between responses to different consultation questions, especially in the summary section. One of the main challenges has been the solution's tendency to generalize feedback and overlook comments on existing legislation or additional comments related to the proposed draft in the consultation. This indicates that the AI solution requires additional training and fine-tuning to effectively differentiate and process various types of feedback. In summary, the demo solution has shown potential as an assistant in facilitating the work of drafters but still requires human guidance and oversight to function effectively. A realistic and useful test environment would require human participation and better AI guidance to enable it to learn and adapt to the specific requirements and context of consultation feedback.

When taking advantage of generative AI as presented in the two studies, the outcomes vary significantly depending on the nature of the work and the user's willingness and ability to utilize AI effectively. The AI tool can reduce the time spent on expert work by up to half, and in knowledge work more broadly, it can potentially

decrease task time by around 20–30 percent (Schildt, 2024). However, productivity declines when the language model is applied to tasks beyond its capabilities. Besides the productivity gains, using and developing generative AI to be more suitable for legal tasks, we gain power. At the same time as AI solutions become more common and are adapted to an increasing number of use cases, discussions have begun in Finland and Europe about strengthening the EU's strategic autonomy and reducing dependence on American AI solutions (Futurice Oy, 2024). For example, Sitra has suggested that EU countries strengthen their capacity to operate independently in the development of creative AI and focus on creating competitive and reliable European language models. Specifically, public sector organizations could be expected to favour European language models.

We can come to conclusion that there are three main ways AI can enhance and make the litigation process more efficient. Those three things are:

- *Accelerating background research*
- *Speeding up the drafting of legal texts*
- *Assessing the impact of legislation*

Firstly, and probably the most significant part is accelerating background research. As I have described earlier, in litigation process the material used just in one case can go as high as over one thousand pages of information. AI can analyse and interpret legal texts, government proposals, and other background materials, identifying key themes and possible connections (Futurice Oy, 2024). When one can use AI, it would speed up the background work as AI could reduce the irrelevant information away. Also, AI can compare specific regulations with one another and identify inconsistencies. To be able to do this, AI would need to be very well educated.

The second most promising applications of AI is its way to speed up the drafting process. As AI can assist in drafting legislative proposals by modelling existing legal texts and help write specific sections, such as preambles, consistently in the same style (developing a “preamble generator” has been identified as a separate project idea), it can make a difference in that part (Futurice Oy 2024).

Thirdly and lastly is the predictions AI can generate. Artificial intelligence is designed to provide predictions about possible answers to given tasks or questions (Koulu, Sankari, Hirvonen & Heikkinen, 2023). In that sense, it would suit for simulating the social impacts of legislative proposals by analysing historical data and forecasting various scenarios. For example, AI could analyse previous verdicts in a similar area to the case and estimate the likelihood of one winning the trial.

## 4.2 Generative AI's threats

On the other hand, the integration of GenAI into litigation processes necessitates a thorough evaluation of several critical concerns. These challenges are not insurmountable; however, addressing them effectively demands substantial investments in both time and financial resources. Key considerations for deploying GenAI in litigation include:

- *Regulation, Privacy violations*
- *Reducing economies of scope*

Our regulations impact the ability to use AI in litigation. In some respects, regulation is beneficial – we need it to protect our rights. However, when regulation outpaces technological development and nearly blocks it entirely, we have to ask: does this truly serve our best interests? In Hadfield's (2022) review he argues that legal markets at least in the United States are inefficient. The primary reason for that is excessive regulation. Hadfield introduces comprehensive list of evidence, where in the United States the regulation is too restricting. For example, paralegals cannot do the same job as lawyers although they have the same capabilities. He argues that excessive regulation distorts economic activity and growth by hindering investments in the legal and regulatory technologies required to adapt to changes in the economy brought about by globalization, digitization, aspirations for inclusion, and the coming of artificial intelligence.

Also, while we need to ensure that regulations are light enough to allow for the implementation of AI, they must also be stringent enough to protect against privacy violations. Privacy violations become particularly important when there are possible benefits to individuals and firms from privacy. In the case of AI, as said before, data is power. Therefore, when applying AI in legal markets, we have to be careful not to violate anyone's privacy. For example, when taking advantage of existing case, we need to be sure which cases are for public and which are not. In Acemoglu's (2021) work, he discusses the "social nature of data." According to him, the interconnectivity inherent in data usage, where individual data can predict or influence others' behaviours, leads to externalities that may be either positive or negative. Predominantly negative externalities result from excessive data utilization by corporations due to the reduced individual incentive to protect personal data when others are freely sharing theirs. This phenomenon introduces a form of submodularity in data-sharing behaviours, further depressing data prices below what might reflect the true value users place on their data and privacy. This situation not only promotes excessive data usage but also shifts economic benefits from users to platforms and companies, highlighting significant distributional impacts within the digital economy. Thus, we need to invest time to make efficient regulation to implement AI efficiently in litigation.

The second thing to consider in Acemoglu's work is the relationship between AI and human judgement. As said before, legal industry and the goods and services it produces are mainly done with human capital. As the production is based on human judgement it cannot be harmed. In Acemoglu's research, he theorizes that economies of scope across tasks might lead to additional costs when using AI technologies. Specifically, deploying AI in various cognitive tasks that require minimal human judgment and creativity could allow workers to shift their focus to tasks that demand more judgment and creativity. However, if economies of scope play a significant role in human productivity, AI might introduce additional costs. Next, we are going to look closer to the theory around this.

Suppose we have two tasks to be performed. These are 1 and 2. The overall output of the economy is given by

$$Y = \min\{y^1, y^2\},$$

where  $y^i$  is the output of task  $i$ , and the Leontief production function imposes that these tasks are strongly complementary.

*Before AI*

In normal economic situation both of the tasks are done by humans. There is a measure 1 of humans and these humans have 2 units of time. Humans allocate their time evenly between task 1 and 2. Therefore, they spent on each task 1 unit of time. Humans have equal productivity in both tasks. The productivity is normalized to 1, so the result of the economy is 1 unit of final good. Wages for the human workers are  $1/2$ , which leads to situation that the entire output is paid for the workers.

*After AI*

In this theory, AI is implemented to task 1. Now the cost of producing task 1 is assumed to be  $c < \frac{1}{2}$ . This leads to cost-saving and so AI is adopted to task workload. Now because AI does task 1, all the human workers start to do task 2, and the output increases.

*After AI + Economies of Scope*

Economies of scope means that individuals learn from performing both tasks at the same time. That was the reason why in the beginning humans allocated their time evenly between tasks. Now because AI and economies of scope is implemented in the process the productivity of task 2 decreases  $1 - \beta$ . Now we suppose that whatever 2 tasks total production is, it is being produced the same amount in task 1 by AI. As a result, net output in this economy will be

$$2(1 - \beta) - \text{spending on AI} = 2(1 - \beta)(1 - c)$$

In the specific scenario where there are no economies of scope ( $\beta = 0$ ), a condition where  $c < \frac{1}{2}$  is sufficient for an increase in net output from 1 to  $2(1 - c) > 1$ . However, once  $\beta > 0$ , this outcome is not assured. For instance, if  $c \approx 1/2$ , even

a minimal presence of economies of scope suggests that employing AI would decrease net output.

In the light of Acemoglu's theory, we have to be careful when implementing AI in legal tasks. When certain aspects of a problem are delegated to AI, humans might begin to lose their fluency in and comprehension of the holistic aspects of relevant tasks. This loss can lead to decreased productivity, even in tasks where they specialize. We have to examine the borderline, when it is efficient to use AI so that the human capital losses could be prevented and the quality of produced legal tasks remains the same or better.

## 5 Conclusion

In his review Hadfield (2022, p.1307) powerfully states: "Economic analysis is fundamentally grounded on assumptions about how law works. Markets are defined by law. Policy is implemented with law. Law forms the basic operating system, the transactional platform, of all economic – indeed all social – activity." This insight emphasises the potential impact of the current absence of GenAI in Finland's legal sector, which could be hindering economic activities. Although Finland's litigation processes are functional, they are not optimized. As we have observed, there is potential for increased efficiency by implementing GenAI into litigation parties' work. Such advancements could potentially lower transaction costs in the Finnish economy, particularly those arising from ambiguities in property rights. Moreover, we have discussed that applying GenAI to legal markets might have some undesirable results when considering the economies of scope.

Artificial intelligence represents a novel and, at times, intimidating development for humanity. As with many new technologies, it triggers apprehension and resistance. However, with appropriate regulatory frameworks, society could greatly benefit from its deployment.

There remains a significant gap in research on legal market efficiency and the minimization of litigation costs on a global scale. Conversely, the effects of AI have been extensively studied. This literature review highlights the need for more detailed research into how improvements in legal efficiency could affect economic performance. Specifically, in the Finnish context, further studies are essential to explore the potential welfare gains from implementing GenAI in our legal systems.

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