



TILBURG LAW SCHOOL
LLM INTERNATIONAL BUSINESS LAW

**THE IMPACT OF LEGAL TECH ON LAW
FIRMS BUSINESS MODEL**

Master Thesis L.L.M. International Business Law

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ABSTRACT

The concept of Legal Tech and its impact on the law system is more debated in the legal industry than ever. The advantages and disadvantages of the new technologies developments represent an actively discussed topic by legal scholars and legal professionals.

Even though this concept is still young, worldwide, the business model of law firms has experienced changes, starting from the billable hours and timesheet system, and ending with a new business structure. In this context, Legal Tech can bring a range of solutions, being an attractive system.

On the other hand, the growth of Legal Tech solutions brings pressure on the traditional law firms business model and constrains the law firms to restructure this model.

This paper presents the positive changes that Legal Tech brings, as well as the challenges that the legal system and legal professionals are facing once with the progress of technology.

Based on the quick development of technology, this research focuses on the relevant aspects of Legal Tech, which will remain unchanged for some time.

The purpose of this thesis is to describe the fundamental features of Legal Tech and the transformation of law firms based on digitalisation.

It shows the improvements in the legal system and professions that Legal Tech can bring, but also the changes that these entities have to implement in order to achieve efficiency and profitability.

Finally, after perusing this paper, the reader has a solid overview of what Legal Tech is and how it works and is able to understand the practical aspects of this phenomenon, in order to adapt the new technology in his daily business.

Tilburg, 18 August 2019

Elena Catalina Dobre

KEYWORDS: Legal Tech · future law firms · business model · future lawyers · artificial intelligence · digitalisation.

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1. INTRODUCTION

Digital transformation is the redesign of businesses models in the digital age and represents the process of using digital technologies to create, or modify, business processes, culture, and clients experiences to meet market requirements.¹

Based on this definition, digital transformation is a multidimensional process, which involves the use of technology solutions.

Digitisation is the process of converting information from analogue to digital, while digitalisation is the use of digitised data to make efficient ways of working.²

Whereas digital transformation creates new business models and products, it brings additional competitive conditions for traditional industries, which is the ‘disruptive’ aspect of digital strategy.³

As a condition for a successful digital transformation, to be effective, a digital strategy should aim to leverage the potentials and opportunities of digital technologies.⁴

Even though the digital transformation of the legal market is a young concept, it is a reality that legal providers have to understand and implement, to keep their businesses profitable. This research paper aims to provide an overview of what Legal Tech is and how a traditional law firm can apply new technologies without losing its value and status.

1.1 About Legal Tech

Geoffrey Robertson, a human rights lawyer and legal author, considered law as a system of rules created and enforced through social or governmental institutions to regulate behaviour.⁵

The legal field is one of the oldest practices worldwide.

Right from the beginnings, the ancient civilisations knew that they need rules and punishments to maintain a strict order in their societies.

¹ 'Getting Started With Digital Transformation: What Is Digital Transformation?' (*Salesforce.com*, 2019) <<https://www.salesforce.com/products/platform/what-is-digital-transformation/>> accessed 30 May 2019.

² *ibid.*

³ Micha M. Bues, Digital Transformation: Success Factors in M. Hartung, M.M. Bues and G. Halbleib (eds), *Legal Tech: How Technology is Changing the Legal World, A Practitioner's Guide* (C.H. Beck, 2018).

⁴ *ibid.*

⁵ Jeffrey I. Ross, *Book Review: Crimes Against Humanity: The Struggle For Global Justice* (International Criminal Justice Review 2001) 130-133 <<https://doi.org/10.1177/105756770101100112>>.

However, the era of digital transformation brings new demands from the traditional legal system regarding the costs and value of the legal services and the way that legal advice is delivered.

The impact of digital transformation on the legal services also has effects on the legal professions and, has the ability to transform the legal landscape into an automated system, but still depending on human engagement and supervision.

The Legal Services Consumer Panel (LSCP) predicts in the 2020 *Legal Services Report* that by 2020 will there be 'less involvement by lawyers in many of the tasks that until now have made up their staple diet'.⁶

The Panel also considers that 'in place of lawyers will be greater self-lawyering, online services, entry by unregulated businesses, and also by regulated providers, such as accountants and banks' tasks that until now have made up their staple diet'.⁷

In the past few years, more Legal Tech startups have been under the spotlight, slowly disrupting the practice of law, by giving people online access to software and programs meant to reduce or even eliminate the need of legal counselling.

But not all the startups are related to the replacement of the lawyers in the legal industry; some Legal Tech solutions aim to help the law firms by providing practise management, document storage and automation, legal research, electronic discovery and even accounting tools, as discussed in chapter three of this paper.

Legal Tech or Legal Technology represents the use of technology, advanced technology and software to provide legal services.

In the last decade, various programs designed by Legal Tech companies were developed and made available to such as contract generators, legal research software, or programs which provide tools to assist with the immigration documents. In this context, when the imagination and capability of the software engineers have reached the climax, the legal industry has to be prepared for any significant challenge that profoundly impacts the traditional law system.

Digital transformation means the implementation of technology and advanced technology in a firm daily work to perform faster and more productive services.

⁶ Legal Services Consumer Panel, 2020 *Legal Services: How Regulators Should Prepare For The Future* (Legal Services Consumer Panel 2014) <https://www.legalservicesconsumerpanel.org.uk/publications/research_and_reports/documents/2020consumerchallenge.pdf> accessed 29 April 2019.

⁷ *ibid.*

Scholar and lecturer Richard Susskind predicted in 2016 that ‘artificial intelligence in law will take off in the 2020s’.⁸

In addition, he added that ‘Artificial Intelligence and other technologies are enabling machines to take on many of the tasks that many used to think required human lawyers, and that’s not plateauing. It seems to be happening at quite a rate’.⁹

The developments of technology in legal practice, based on the use of artificial intelligence, can be categorised in the following main applications, the third chapter approaching some of these fields, as the author considered relevant for this research.¹⁰

Main Applications	Benefits
Drafting tools	Allow lawyers to review contracts and create documents with fewer errors and in a shorter time.
Contract Management	
Contract Review	
Legal Analytics	Provide trends and patterns based on past case laws.
Prediction Technology	Generates results based on the analysis of some patterns that forecast litigation outcome.
eDiscovery	Uses electronic data as evidence in civil or criminal cases.
Legal Research	Stores a range amount of data that will help lawyers to study legislation, case laws and different practice areas
Contract Due Diligence	Lawyers can perform due diligence easier and faster by using a combination of artificial intelligence tools.
Expertise Automation	Designed to automate highly cognitive behaviours and tasks. ¹¹
eBilling	This tool automates the traditional billable hours' system.
Intellectual Property	Analyses sizeable intellectual property portfolios to help lawyers to draw insights from the content.

Table 1: Main application of Legal Tech tools in legal practice¹²

⁸ Edgar A. Rayo, 'AI In Law And Legal Practice – A Comprehensive View Of 35 Current Applications | Emerj' (*Emerj*, 20 May 2019) <<https://emerj.com/ai-sector-overviews/ai-in-law-legal-practice-current-applications/>> accessed 22 May 2019.

⁹ *ibid.*

¹⁰ *ibid.*

¹¹ 'What Is Expert Automation And Augmentation Software (EAAS)? - Definition From Techopedia' (*Techopedia.com*) <<https://www.techopedia.com/definition/33235/expert-automation-and-augmentation-software-eaas>> accessed 6 June 2019.

It is clear that for the new law firms, the process of digitalisation is a simple path due to the possibility to build the business model on an independent, efficiency-driven structure.

When it comes to the already existing traditional law firms, the transition to digitalisation appears to be a massive challenge because they have to deal first with the common mindsets and patterns.

1.1.1 New Challenges for Law Firms

Legal Tech is a market that improves daily and raises new challenges for law firms and lawyers. The traditional law firms have two choices: either to comply with the digital transformation, either to continue the conventional path that the industry encounters today.

In order to make a decision, they have to consider all the external factors that will impact their business, such as the increase of competitiveness between the law firms that implemented the technologies and the traditional law firms, and the increasing number of active clients that demands a new relationship between lawyer and clients adapted to the technology developments.

Table 2 below shows a cost-benefit comparison between Legal Tech firms and traditional law firms from the perspective of modern clients:

	Traditional Law Firms	Legal Tech Firms
Cost	High time High energy High monetary	Low time Low energy Low monetary
Benefits	Bespoke Drive to the office Billable hour Standardised Low access to information	Bespoke and innovative Easily accessible Alternative billing Commoditised High availability and access to information

Table 2: Cost-benefits comparison between Legal Tech firms and traditional firms¹³

¹² Adapted from Qian Hongdao and others, 'Legal Technologies In Action: The Future Of The Legal Market In Light Of Disruptive Innovations' (2019) 11 Sustainability.

¹³ *ibid.*

Also, another issue that appears to be significant for the legal professionals and their future represents the new set of skills that they need to embrace.

Back in 2014, the legal scholars John O. McGinnis and Russell G. Pearce stated:

Mixing in human intelligence may assure the best possible result. (...) Therefore, the disruptive effect of machine intelligence will trigger the end of lawyers' monopoly and provide a benefit to society and clients as legal services become more transparent and affordable to consumers, and access to justice thereby becomes more widely available.¹⁴

But, though all these disruptive changes are fundamentally impacting the legal system, for the foreseeable future, machines will not be able to speak in court and create necessary emotional bonds with clients.

Therefore, the automatization of the legal system, instead of being considered as the end of the traditional legal professions, can be seen as a transition to new forms of work which requires, first of all, the ability to adapt to technology solutions.

1.2 Research Questions

The American Bar Association voted in August 2012 the *Model Rules of Professional Conduct* requiring the lawyers to take into account 'the benefits and risks associated with relevant technologies'.¹⁵

The increasing incentives for lawyers to become software engineers and for the law firms to pass through digital transformation, together with the saturation of the market which pushed significant corporations to adopt Legal Tech products, services and solutions, is the motivation for the central research question:

- How the development of Legal Tech impacts law firms business model and legal professions?

In order to provide an objective answer for the main question, the author will examine a series of sub-questions approached in the sub-chapters of this paper.

- What is the traditional law firm business model, and what changes it will encounter?

¹⁴ John O. McGinnis and Russell G. Pearce, 'The Great Disruption: How Machine Intelligence Will Transform The Role Of Lawyers In The Delivery Of Legal Services' (2014) 82 *Fordham Law Review* <<https://ir.lawnet.fordham.edu/flr/vol82/iss6/16/>> accessed 5 April 2019.

¹⁵ American Bar Association, 'Model Rules Of Professional Conduct' (*Americanbar.org*, 11 June 2019) <https://www.americanbar.org/groups/professional_responsibility/publications/model_rules_of_professional_conduct/> accessed 5 April 2019.

- What are the leading drivers for change regarding law firms business model?
- What is Legal Tech, and what solutions can it provide for the legal system?
- What are the main legal issues when it comes to the use of technology?
- What are the future perspectives of legal professions?
- What does a future business model proposal look?

The purpose of the sub-questions is to offer a clear overview of the primary matter: the digital transformation and its influence on prospective legal businesses.

1.3 Thesis Structure

This thesis will be structured into three chapters and will focus on the main research question and the sub-questions.

In the second chapter, this paper will focus on the traditional law firms business model and convenient access to legal information.

The author will discuss the conventional mindset of the legal professionals, as well as the disruption of the legal system regarding the billable hour, timesheet model, and the firms business model.

In the third chapter, the research and discussion will go through the Legal Tech as a product, as a service, and as a skill, including explanations of how the technology works in the law industry and what types of technology can the legal businesses implement in their structure.

In the last chapter, the paper will cover the benefits of Legal Tech implementation, together with the legal issues that this new transformation brings to the legal industry.

In the end, the author will provide a collection of solutions for the future legal businesses models which the traditional law firms can implement to keep up with the current challenges.

1.4 Methodology

The way the main research question will be answered is by looking first at the traditional legal system and how law firms are structured.

In order to do that, the author will use the doctrinal method, searching through legal publication in textbooks and articles, international implemented legislation and

practices, making a comprehensive understanding of how the Legal Tech works and how it impacts the legal system.

Using the same research method, the author will approach the possible solutions and schemes for digital transformation and will provide a range of outcomes for the law firms that will want to change to a new business model.

This paper will be treated as a guide that will cover both the advantages and disadvantages of the use of technology in the law industry, as well as the possible issues that may occur in practice.

Every sub-question of this research will be answered in the sub-chapters of this paper by using the same research structure and legal literature, offering a full perspective of Legal Tech solutions.

As well, some already existing Legal Tech tools will be mentioned in order to provide examples which will highlight the use of technology in the legal industry.

Also, the paper will provide a variety of data that will sustain the evolution of Legal Tech worldwide and the growth of the market in the last decade.

1.5 Literature Review

Many recent articles and studies have focused on the impact of Legal Tech on the future of the legal industry and legal professions.

In support of this research, the author often referred to Markus Hartung, Micha-Manuel Bues and Gernot Halbleib book on Legal Tech from 2018, *How Technology is Changing the Legal World, A Practitioner's Guide*.

This book is used as the main source and covers different aspects of the Legal Tech system, starting from the transformation of the legal business industry, including the historical background and the evolution of the legal system, technology developments, and concluding with scenarios regarding the future overview of the law firms and legal professions.

As a secondary source, the research refers to the study conducted by the Boston Consulting Group and Bucerius Centre on the Legal Professions from 2016, *How Legal Technology Will Change the Business of Law*, where the authors explore the consequences of digitalisation in the legal industry.

Also, the article *Legal Technology in Action: The Future of the Legal Market in Light of Disruptive Innovations* from 2019, edited by a team of law professors such as Qian Hongdao, Sughra Bibi, Asif Khan, Lorenzo Ardito, and Muhammad B. Khaskheli is considered in this research.

The article represents a secondary source used by the author in order to provide a complete overview regarding the drivers for change of legal industry, the market segmentation, and the demands of the modern clients in terms of cost and legal services delivery.

Another secondary source represents *Legal Tech, Smart Contracts and Blockchain, Perspectives in Law, Business and Innovation* from 2019, edited by Marcelo Corrales, Mark Fenwick, and Helena Haapio, a collection that brings together legal practitioners and scholars and provides a global perspective on the use of Blockchain and technology in the legal industry.

Additional, this research is grounded in various legal articles such as:

- *Thrive: A New Lawyer's Guide to Law Firm Practice* by Desiree Moore, published in 2012 helped the author to deliver in this research a modern outlook for future lawyers regarding the development of a new mindset and set of skills adapted to the Legal Tech landscape.
- *2020 Legal Services, How regulators should prepare for the future* is a study conducted by the Legal Services Consumer Panel in 2014 and is used in this research to underline the impact of technological developments on the consumers of legal services.
- *The Changing Business Model of Law Firms*, published in 2017 by Alan Hodgart, Alan and Rob Ashing, represents the base for a new perspective on law firms business model and the need for adaptation and keeping up.

1.6. Intended Outcome

Technology is a complex concept that involves not only an ability to comprehend it but also the capacity to adapt it in daily tasks and responsibilities. It is an integral part of the present and a substantial part of the future, which makes the digital transformation a sensitive, but still an important topic.

This paper aims to offer more confidence and trust in digitalisation and gives an innovative perspective over the Legal Tech industry.

It has the purpose to become a blueprint for future applications of technology in the law firms' business model, as well as a simplified guide for future lawyers who accept the changes in the system and want to adapt to them.

The author is not focused on concluding that Legal Tech is the crucial answer to the future legal industry, rather focusing on assessing the impact that technology has on the traditional legal system, with both advantages and disadvantages, and how the practitioners can overcome these changes in a straightforward manner.

After reading this paper, the reader will understand what technology and Legal Tech solutions are and what benefits they bring to the legal system and for future lawyers.

2. THE TRANSFORMATION OF THE LEGAL SYSTEM

‘The practice of law’ and ‘the business of law’ are facing massive changes nowadays; the development of new technologies, a fast-growing market, and the improved access to data have influenced the way that clients access legal services and, the way the professionals are delivering these services.

The Figure 1 below shows the growth of the investment in the Legal Tech industry worldwide in the last four years, at the same time, the market expects an outstanding increase in value for the next years.

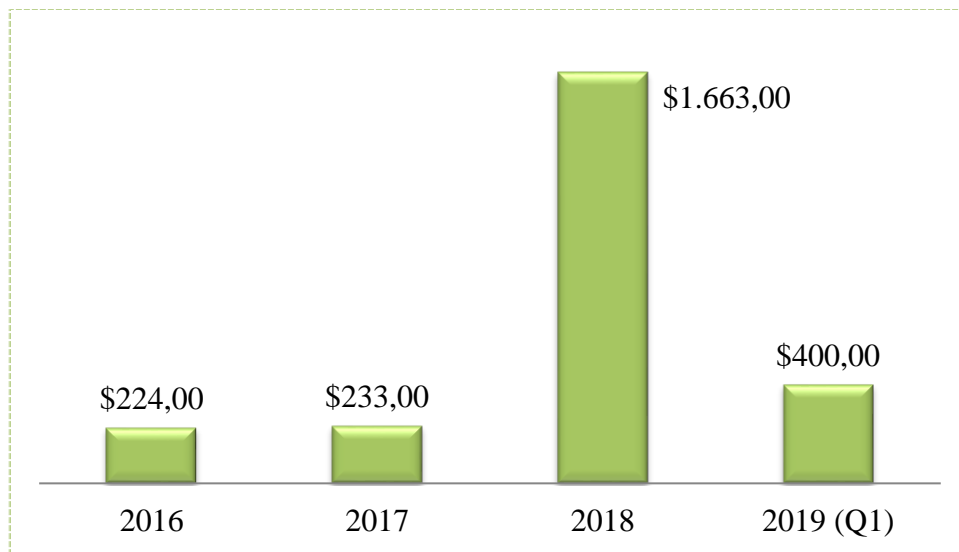


Figure 1: Investment in Legal Tech worldwide (\$M)¹⁶

The traditional law firms’ structure has to deal with global competition, alternative fees arrangements, new regulatory requirements, and new client demands.¹⁷

These changes and their continuous development have a significant impact on the legal market allowing the law firms and legal professionals to increase productivity, ease the legal services delivery through technology and provide innovative solutions for their clients while applying fair costs.¹⁸

¹⁶ Adapted from '713% Growth: Legal Tech Set An Investment Record In 2018' (*Forbes.com*, 2019) <<https://www.forbes.com/sites/valentinpivovarov/2019/01/15/legaltechinvestment2018/#4df94e337c2b>> accessed 20 July 2019.

¹⁷ Investec, ‘Legaltech & Newlaw Q219 Update’ (Investec 2019) <<https://www.investec.com/content/dam/united-kingdom/cib/legaltech/legaltech-newlaw-update.pdf>> accessed 20 July 2019.

¹⁸ Hongdao and others (n12) 3-10.

Even though in the last decade law firms have tried to neglect the use of technology by following a traditional mindset, with the globalization and digitalization of the legal sector, the understanding and use of technology should become a priority for the law firms, as well as the reconsideration of an innovative business model and a new billing structure.

According to the Boston Consulting Group and Bucerius Law School report, the digital revolution has an essential impact on the law firms' business model regarding three main areas:¹⁹

- The Structure of the Law Firm;
- Fee Arrangements;
- Value Proposition.

This chapter will provide an overview of the traditional legal structure and mindset, to understand the changes and transformations of the legal industry in a digitalised world where Legal Tech has become a necessity.

Also, this chapter will analyse all three main areas that will suffer the technology developments by underlining the drivers of change for this new market.

Finally, it will provide an overview of the worldwide Legal Tech progress by continents.

2.1. The Traditional Law Firm Business Model

The concept of 'legal culture' has a significant influence on the traditional legal mindset of law firms and legal professionals. Legal culture establishes some patterns of legally oriented social behaviour and attitudes, which constitutes the role and the rule of law within every society.²⁰

Legal culture is about what and how the judicial system is.²¹

However, the new risk factors such as globalisation, financial crisis, and technological advances have changed the 'how to buy and sell legal services' dynamic.²²

¹⁹ The Boston Consulting Group and Bucerius Law School, 'How Legal Technology Will Change The Business Of Law' (The Boston Consulting Group and Bucerius Law School 2016) <https://docs.wixstatic.com/ugd/b30d31_7b407b2c8c6b44d697957b7fa5db48c8.pdf> accessed 17 May 2019.

²⁰ David Nelken, 'Using The Concept Of Legal Culture' (2004) 29 Australian Journal of Legal Philosophy <<https://www.aslp.org.au/journal>>.

²¹ *ibid.*

The need for legal services has significantly increased in the last years, creating new pressure for the law firms, either from the market due to the increased competition, either from the clients due to their expectation to ‘deliver more at less cost’ and higher quality of the services²³.

The last few years have been a period of change for law firms and the legal industry. As shown in Figure 2, many law firms have grown in both size and revenue while becoming international in scope, but their business model always remained the same.



Figure 2: Growth predictions of the global legal market (\$B)²⁴

A law firm represents a business entity formed by one or more lawyers for the purpose to engage in the practice of law, having as its leading service the guidance of clients regarding their legal rights and responsibilities and the representation of them in the matters where legal assistance is required.²⁵

Over time, the legal services have been delivered to clients by law firms, wholly-owned and controlled by lawyers.

²² Mark A. Cohen, 'Clients Need Legal Services But Not Necessarily Lawyers' (*Forbes.com*, 2019) <<https://www.forbes.com/sites/markcohen1/2019/02/19/clients-need-legal-services-but-not-necessarily-lawyers/#3a5c00bd702d>> accessed 20 July 2019.

²³ *ibid.*

²⁴ Adapted from Hongdao and others (n12).

²⁵ 'Law Firm Law And Legal Definition' (*Definitions.uslegal.com*) <<https://definitions.uslegal.com/l/law-firm/>> accessed 5 April 2019.

The business model of a law firm describes the way it operates and determines how the firm creates value by generating revenue, and is based on two pillars: Competitive Strategy and Creating Value.²⁶

It represents a collection of processes and systems meant to make the firm competitive and bring profit.²⁷

The competitive strategy defines the fields where the firms want to compete, as well as the existing conditions in that market adequate for firms to achieve their purpose.²⁸

For a firm to generate profit, the business model must create value for its clients, which means to understand what its clients expect from the way that the legal aid is delivered, and how can it improve those services to comply with market requirements.²⁹

Even though globally, law firms are organised and structured in different forms, based on the jurisdiction in which they practice, the concept of ‘partnership’ is the most common type of organisation.

In a partnership, the partners are joint owners and directors of the company, the associates are employees with the perspectives of becoming partners, and the paralegals are the ones providing substantive legal work for partners and associates.

A traditional partnership represents a small firm structure, where partners are working together with the associates, offering them the possibility to become partners through good work and productivity.³⁰

Big law firms are, in general, integrated into limited liability partnerships, and have a strict hierarchy, based on junior associates, senior associates, and partners.³¹

In some cases, the law firm can hire contract associates, for a particular project, and contract partners, under a specific employment contract.³²

Regarding the position of each legal professional in the firm, the author describes the following hierarchy:

²⁶ Alan Hodgart and Rob Ashing, 'The Changing Business Model Of Law Firms | Hong Kong Lawyer' (*Hk-lawyer.org*, January 2017) <<http://www.hk-lawyer.org/content/changing-business-model-law-firms>> accessed 6 May 2019.

²⁷ *ibid.*

²⁸ *ibid.*

²⁹ *ibid.*

³⁰ Desiree Moore, *Thrive: A New Lawyer's Guide to Law Firm Practice* (American Bar Association 2013).

³¹ Josh Richman, 'Lockstep Vs 'Eat What You Kill': Firms' Partnership Structures Explained' (*LawCareers.Net*, 30 April 2019) <<https://www.lawcareers.net/Information/Features/30042019-Lockstep-vs-eat-what-you-kill-firms-partnership-structures-explained>> accessed 6 May 2019.

³² *ibid* (n 30).

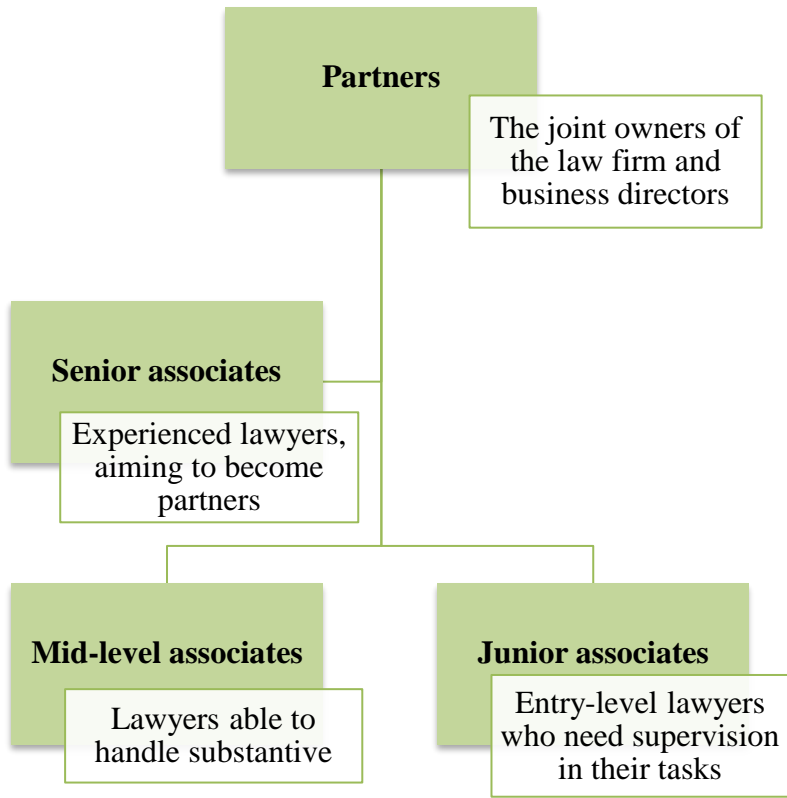


Figure 3: The hierarchy in traditional law firms (author-generated)

In the conventional system, from the business structure point of view, law firms are based on a pyramid shape, as depicted in Figure 4, where a top-down chain of control is displayed, with a high ratio of junior lawyers per partner.³³

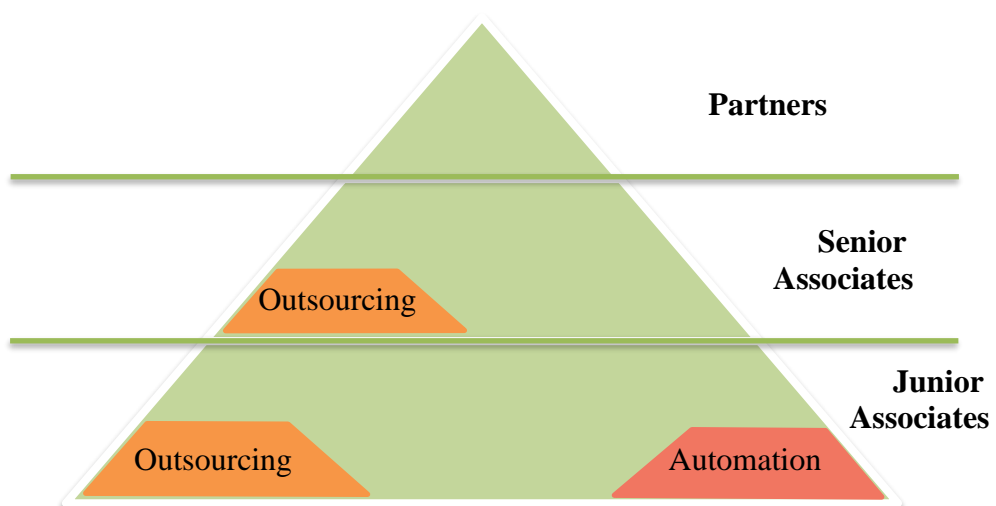


Figure 4: The pyramidal structure of the traditional law firm business model³⁴

³³ Jorg, 'The Impact Of The Digital Revolution On The Business Model Of Law Firms: From Pyramid To Rocket - At The 11Th Billable Hour' (*At the 11th Billable Hour*, 9 January 2019) <<https://eleventhbillablehour.com/2019/01/09/the-impact-of-the-digital-revolution-on-the-business-model-of-law-firms-from-pyramid-to-rocket/>> accessed 21 July 2019.

The associates are bringing value to the company as well as significant profits, and for their proper work and an excessive amount of hours, they can advance as partners. They are often responsible for generating half of the firm's revenue, even though their fees are not as high as partners ones.

2.2. Billable Hour and Timesheet System

As their first source of revenue, the traditional law firms are focusing on billing by the hour, which translates into the billable hour and timesheet system.

Reginald Heber Smith was the first person using the idea of the billable hour and timesheet model when he became the chief counsel of the Boston Legal Aid Society in 1914.³⁵

Smith, convinced that time means money and the customers should buy hours, started to use a timesheet to track efficiency and performing cost and profitable accounting.³⁶

Smith applied for the first time the timesheet as a cost accounting tool, but he has the credit for creating the billable hour system in the law industry.³⁷

Ronald J. Baker states that billing per hour has encouraged the law firms to focus on the wrong direction, which has caused unfavourable consequences.³⁸

In time lawyers got accustomed to filling in the daily timesheet, and it became the lawyer's inventory.

According to a survey from 2014 conducted by the Legal Services Consumer Panel, more than 45% of the subjects request fixed fees as a billing method by comparison with less than 10% of them agreeing with hourly rates as a paying system.³⁹

The billable hour model was considered an effective pricing policy during the last decades, but once with the technological developments, it appears to be a suboptimal system due to the full range of disadvantages compared with its advantages.⁴⁰

³⁴ Adapted from The Boston Consulting Group and Bucerius Law School (n 19) accessed 17 May 2019.

³⁵ Ronald J Baker, *Implementing Value Pricing: A Radical Business Model For Professional Firms* (John Wiley & Sons 2011) 115.

³⁶ *ibid* 115-117.

³⁷ *ibid*.

³⁸ *ibid*.

³⁹ Legal Services Consumer Panel, 'Tracker Survey 2014 Briefing Note: A Changing Market' (2014) <https://www.legalservicesconsumerpanel.org.uk/ourwork/CWI/documents/2014%20Tracker%20Briefing%201_Changingmarket.pdf> accessed 29 April 2019.

As a first advantage, the billing hour method represents an easy and efficient way to help the legal professionals to focus on customer relations by using appropriate time and billing software and transforming the pricing function into an administrative task.⁴¹

Hourly billing provides stability and predictability on the market for the customers that are familiar with this system, as well as fair competitiveness.

Another advantage of this method is that in some litigations time recording is a necessity due to legal precedents and ethical rules.⁴²

The first disadvantage of this method appears to be the gap between the legal professional's interest and customer's one. An increase in the firm's revenue will translate into an increase in its costs, that does not comply with clients requirement of 'good enough actions' rather than optimal actions.⁴³

Also, the billing hour system is based on justifying the prices concerning the hours spent for every legal case, which will diminish a law firm's goal to create value in its clients' minds.⁴⁴

A fixed price model is expected to reduce the risks attached to profitability because risks cannot be priced by the hour, but a law firm can ask for premiums to provide a risk-reduced service.⁴⁵

Another disadvantage of billing hour method is considered to be its focus on effort, and not on the result. It does not repay creativity and the final result; instead, this method concentrates on a range amount of ineffective hours spent on legal research and case review.⁴⁶

2.3. Access to Legal Information and Value Proposition

Experiencing legal problems is a common feature of daily lives in modern society.

⁴⁰ Ed Kless, 'Episode #132: The Deleterious Effects Of Hourly Billing — The Soul Of Enterprise' (*The Soul of Enterprise*, 6 March 2017) <<https://www.thesoulofenterprise.com/tsoe/deleterious>> accessed 10 May 2019.

⁴¹ *ibid.*

⁴² *ibid.*

⁴³ *ibid.*

⁴⁴ *ibid.*

⁴⁵ *ibid.*

⁴⁶ *ibid.*

Access to legal information is the right of people to seek and obtain remedies for their legal problems⁴⁷.

It represents an essential component of the rule of law and modern society.

The primary sources that provide legal information are legislation and legal cases⁴⁸, but in traditional societies, access to legal information through a lawyer is a crucial dimension of access to justice.⁴⁹

The inadequate access to legal information is due to two reasons:

- Geographic: According to statistics,⁵⁰ almost 45% of the world population is part of the rural communities. Due to a lack of spread of the legal services outside the urban areas, many of the rural inhabitants have poor access to legal advice.
- Cost: Even with all development, nowadays, legal services are still costly, which makes their delivery inaccessible for many people. This subject is discussed in the previous subchapter 2.2. Billable Hour and Timesheet System.

The European Union Agency for Fundamental Rights (FRA) research shows that access to justice is problematic due to a lack of rights awareness and poor knowledge about how to access legal information.⁵¹

Once with the growth of the legal market, many of the legal services carried out now by lawyers may be delivered by non-lawyers and legal tech specialists, worldwide, at a lower cost and with the same quality, improving access to legal information.⁵²

But, law firms should think about their ability to improve access to legal information by rethinking the value proposition.

A value proposition is the ability of the firms to offer a full package of services that will make them attractive and, at the same time, will keep them as a point of contact for their clients.

⁴⁷ United Nations Development Programme, 'Access To Justice: Practice Note' (United Nations Development Programme 2004) <https://www.undp.org/content/dam/aplaws/publication/en/publications/democratic-governance/dg-publications-for-website/access-to-justice-practice-note/Justice_PN_En.pdf> accessed 10 May 2019.

⁴⁸ Marie-Francine Moens, 'Improving Access To Legal Information: How Drafting Systems Help' in Arno R. Lodder, Anja Oskamp, *Information Technology & Lawyers: Advanced Technology in the Legal Domain, from Challenges to Daily Routine* (Spring 2019) 131-150.

⁴⁹ Richard Devlin and Ora Morison, 'Access To Justice And The Ethics And Politics Of Alternative Business Structures' (2012) 91 *The Canadian Bar Review* 483-553.

⁵⁰ 'Rural Population (% Of Total Population) Data' (*Data.worldbank.org*, 2018) <<https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS>> accessed 24 July 2019.

⁵¹ European Union Agency for Fundamental Rights, 'Access To Justice' (*European Union Agency for Fundamental Rights*, 2019) <<https://fra.europa.eu/en/theme/access-justice>> accessed 21 May 2019.

⁵² Jorg (n 33) accessed 24 July 2019.

By using technology law firms can develop their legal products and services, that clients can use to solve legal issues and even create their documents, and provide legal advice in exceptional cases when this is necessary.

In other words, lawyers should identify the services considered commoditised and let them be carried out by Legal Tech tools, believing that increased efficiency will provide value for the clients.⁵³

For example, a law firm can implement Legal Tech products and solutions in its portfolio or create its products for faster delivery, can use legal project managers to keep track of the transactions, and can allow lawyers to focus on the services that need their added value.⁵⁴

Therefore, by providing Legal Tech products and services, a law firm will:

- Broaden its geographic area of legal services delivery;
- Enable a more accessible approach to legal information;
- Help lawyers to offer genuine added value for critical services;
- Assure value for its clients.

2.4. New Changes in the Legal System

In the last years, the advancements in technology and data science together with disruptive innovations, including the deregulation of the practice of law, have been changing the legal sector.⁵⁵

Technology offers new possibilities for the legal industry to provide simplified assistance that leads to a new relationship between law and technology.

The law firms worldwide have already started to feel the impact of these disruptions and, some of them, already implemented technology tools and skills in their legal services business model.

Figure 5 below shows the growth of the Legal Tech startups on every continent compared to the growth of traditional law firms.

⁵³ *ibid.*

⁵⁴ *ibid.*

⁵⁵ Deloitte, 'The Legal Department Of The Future: How Disruptive Trends Are Creating A New Business Model For In-House Legal' (Deloitte 2017) <<https://www2.deloitte.com/content/dam/Deloitte/us/Documents/finance/us-advisory-legal-department-of-the-future.pdf>> accessed 20 July 2019.

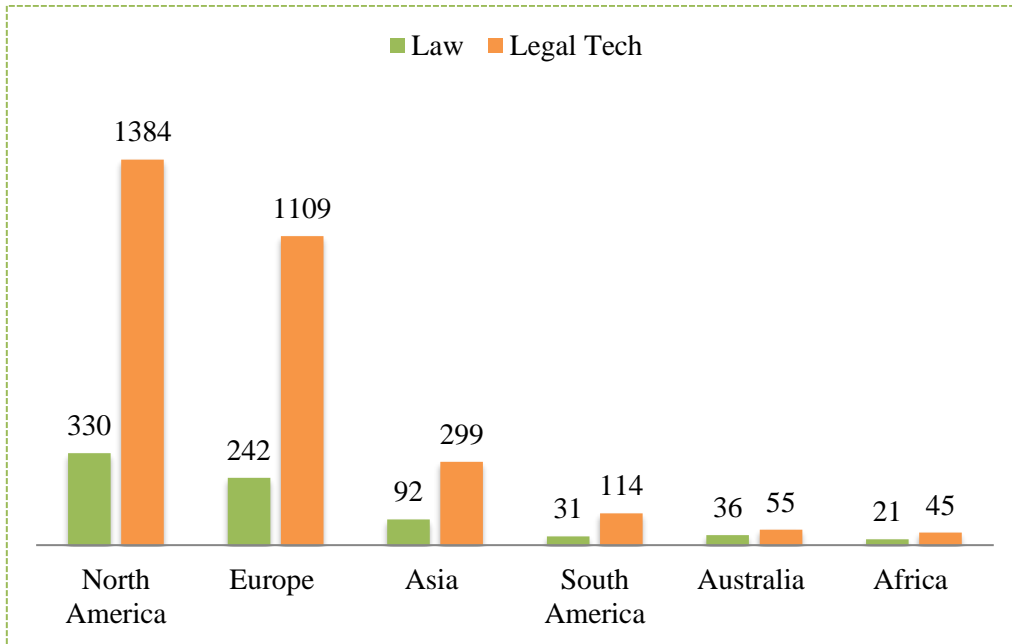


Figure 5: Legal and Legal Tech companies worldwide starting with 2010⁵⁶

As of July 2019, a range of 1.048 Legal Tech Startups operates worldwide as shown in Figure 6, with an average valuation amount of \$ 4.5 million US, and a range of 600 investors in these companies.⁵⁷

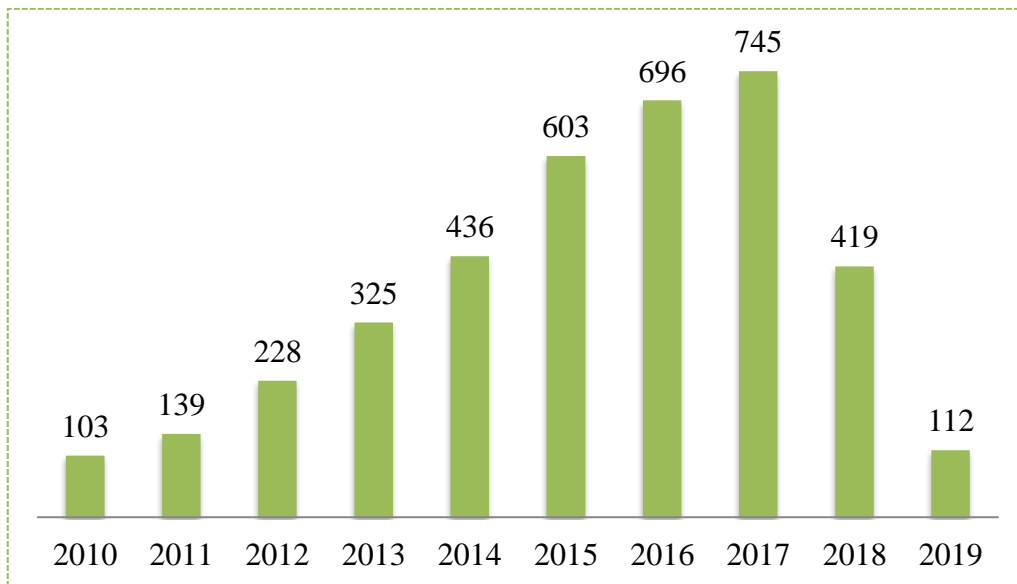


Figure 6: Worldwide Legal Startups evolution starting with 2010 (companies number worldwide)⁵⁸

⁵⁶ Adapted from 'Legal Startups Charts - Legalcomplex' (*Legalcomplex*) <<https://www.legalcomplex.com/2015/12/29/legal-startups-charts/>> accessed 21 July 2019.

⁵⁷ 'Legal Tech Startups' (*angel.co*, 2019) <<https://angel.co/legal-tech-1>> accessed 24 July 2019.

⁵⁸ Adapted from 'Legal Startups Charts - Legalcomplex' (n 56).

Even though in the last years, the development of technology has increased significantly, the application of these tools in the legal services delivery has encountered a slow and cumbersome implementation process.

Susskind considers that three main drivers of change have impacted the law industry and the way the legal services are delivered:⁵⁹

- ‘More for less’
- Liberalisation
- Technology

More for less challenge represents the compliance of a law firm with the clients’ demand for ‘charging less’ by using alternative fees and collaborative strategies, which leads to cost-efficiency.⁶⁰

About this change, Susskind states that ‘I believe the more-for-less challenge, above all others, will underpin and define the next decade of legal services. The more-for-less challenge will, I expect, irreversibly change the way that lawyers work’.⁶¹

Due to clients demands, the market has changed in the last years, from bespoke to economisation and commodification. The new legal marketplace has evolved from a general branding concept providing exclusivity to a new system where ‘lawyers are decreasingly disinterested brokers in society and defenders of the public good, and increasingly service firms at the cutting edge of the capitalist economy’⁶².

Figure 7 below illustrates the concept of ‘more for less’, and the recent transition of the legal system.

⁵⁹ Richard E Susskind, *Tomorrow's Lawyers* (Oxford University Press: Oxford 2017).

⁶⁰ *ibid.*

⁶¹ *ibid.*

⁶² Salvatore Caserta and Mikael Madsen, 'The Legal Profession In The Era Of Digital Capitalism: Disruption Or New Dawn?' (2019) iCourts Working Paper Series, No. 149, 2019 <<https://ssrn.com/abstract=3310211>> accessed 22 May 2019.

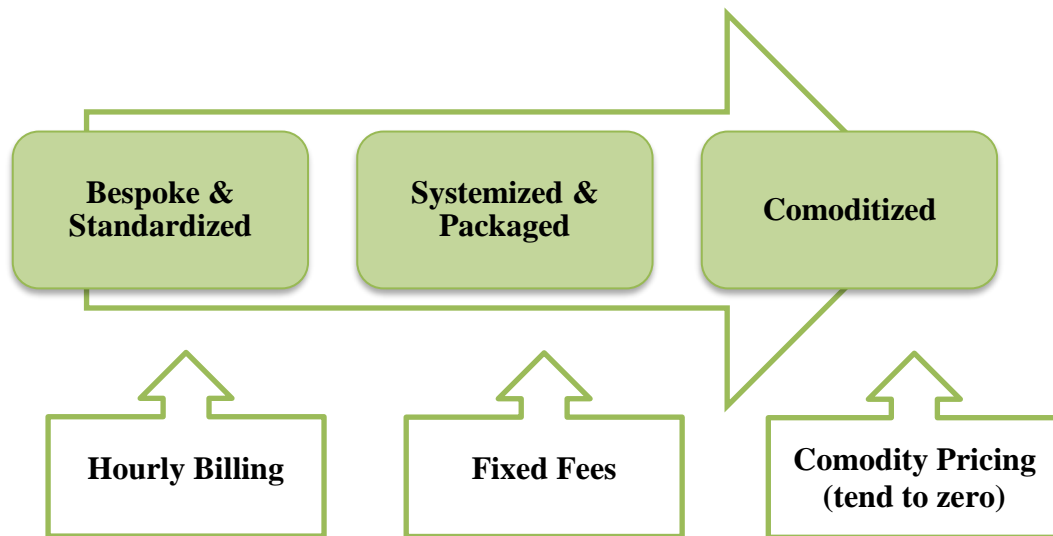


Figure 7: The disruption process and new fees model⁶³

The liberalisation of the legal market brings a new challenge for lawyers to adapt to a new legal advice delivery system. Scholars contend that the restriction of who can provide legal services and by rigid national legislation lead to an unjust monopoly on the market and restrictive practices.⁶⁴

To change this practice, for example, in the United Kingdom, the authorities adopted the Legal Services Act from 2007, that introduced the concept of ‘alternative business structures’, a new type of legal businesses.⁶⁵

Within these structures, non-lawyers and paralegals have the right to own or run legal businesses. Thus the market opens new opportunities for partnerships and Legal Tech startups, such as e-disclosure, virtual courts, or online dispute resolution.⁶⁶

Technology is the third drive for change. On the strength of technology, the legal market is more transparent than before, more accessible and cost-effective. The latest developments of Legal Technology tools have the chance to provide more value for the clients, according to their needs and financial resources.

The scholars' agree that disruptive technologies are the key to a sustainable juridical environment, and it brings reforms for legal practices.⁶⁷

⁶³ Adopted from Richard E Susskind, *The End Of Lawyers?* (Oxford University Press 2010).

⁶⁴ Susskind (n 59).

⁶⁵ Hongdao and others (n 12).

⁶⁶ *ibid.*

⁶⁷ *ibid.*

Also, legal professionals have identified a combination of factors that contributes to the success of Legal Tech' startups:⁶⁸

- Maturing ecosystem

Worldwide, there is a significant number of well-founded startups. Their profitability provides further validation for the companies that are still trying to understand the new changes in the system.⁶⁹

- Increased transparency

The legal market is known for its lack of transparency when it comes to knowledge and costs. The use of technology in this sector is meant to improve this asymmetry and provide full legal information for clients.⁷⁰

- Automation

The Legal Tech market has encountered in the last year a broad range of technology solutions based on the use of large data sets for assisting the professionals with specific repeatable tasks. The application of automation in the daily chores is expected to reduce the time that a professional spends with repetitive responsibilities, and therefore to reduce the costs.⁷¹

- Innovation

Starting from the automation process, some startups have succeeded to go beyond it and provide additional solutions for more efficiency and cost reduction.⁷²

- Generational shift

This factor refers to the new set of skills that future legal professionals posse, as well as their ability to understand and use technology daily. For this purpose, some law schools have already changed their curriculum by implementing, next to the traditional law classes, business, legal technology, and program management classes.⁷³

All these drivers and factors that contribute to the digital transformation of the legal market are part of the concept of 'digital business'.

⁶⁸ Tom Wilson, 'Legal Tech - Mapping Disruption' (*Medium*, 12 July 2016) <<https://medium.com/@taw/legal-tech-mapping-disruption-3e6685fc4a5c#.rh7rnwydr>> accessed 20 July 2019.

⁶⁹ *ibid.*

⁷⁰ *ibid.*

⁷¹ *ibid.*

⁷² *ibid.*

⁷³ *ibid.*

According to *Gartner's IT Glossary*, digital transformation is 'the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business'.⁷⁴

The digital business represents a new business design which involves the integration of digital and physical methods to work in a connected and intelligent way.⁷⁵

As an example of digital transformation and digital business, the company Deloitte has started to transfer some parts of its traditional auditing services to software programs and aims to automate 30% of its audits.⁷⁶

In a report from 2017, Deloitte looks at two types of drivers that bring these changes: external drivers and internal drivers, as described in Figures 8 and 9.⁷⁷



Figure 8: The external drivers of change in the Legal Industry (author-generated)

⁷⁴ 'Digitalization - Gartner IT Glossary' (*Gartner IT Glossary*) <<https://www.gartner.com/it-glossary/digitalization>> accessed 21 May 2019.

⁷⁵ Jorge Lopez, 'Digital Business Is Everyone's Business' (*Forbes.com*, 7 May 2014) <<https://www.forbes.com/sites/gartnergroup/2014/05/07/digital-business-is-everyones-business/#2cd2a65f7f82>> accessed 27 May 2019.

⁷⁶ Deloitte (n 55).

⁷⁷ *ibid.*



Figure 9: The internal drivers of change in the Legal Industry (author-generated)

Artificial intelligence and different software programs are becoming more and more present in the legal system, challenging the traditional law firms business model.

This technology is offering two solutions: either keeping the already existing business model by caring on the conventional mindset without incorporating new technologies or integrate new tools and services based on data science and technology and compliance with the new clients' expectations and societies development.

For the first option, law corporations will have to maintain the same hierarchy system presented in the previous sub-chapter, with a specialised lawyer in different areas of practice and hourly billing policy.

For the second option, the new law firms will have to visualise innovation and digitalisation as a business strategy which will help the employees to provide legal solutions faster and easier for their clients.

More than this, the future automated law firms apply ethical rules based on technology, which helps them to focus on client's value and satisfaction.

As mentioned above, another reason for the digitalisation of the legal system is the clients' new demands and expectations.

The modern clients want more value and efficiency in the legal advice delivery process. The law firms should provide transparency of the services, lower prices and increased satisfaction, by using technology and automation, to fulfil these demands.

The existing law firms are still mindset and structural resistance to innovation, but some elements can bring greater receptivity to artificial intelligence tools applications, such as:⁷⁸

- The size growth of law firms requires a more capable operating system.
- The development of technology provides smooth and cheap access to online legal tools.
- The adoption of different forms of value billing is producing price transparency and improved productivity.
- ‘Billing for software’ replaces the billable hour system.
- Technology can increase work satisfaction, especially for millennials;
- The increasing amount of legal information demands more effort, and by using technology tools, the lawyers can fulfil their tasks effortlessly.
- Both digitalisation and globalisation trends are demanding a ‘based on technology’ business model.

Nevertheless, the new changes in the system are not perceived positively by the entire legal industry.

Most of the legal professionals feel overwhelmed about these challenges and the new demands. Lawyers are usually cautious and sceptical, seeing the Legal Tech market a threat to the traditional job description.⁷⁹

Indeed, Legal Tech puts pressure on the conventional business model of law firms, forcing them to improve it, or even change it entirely.⁸⁰

But the development of law firms is still challenging.

To enhance their legal advisory services delivery, the traditional law firms should implement technologies and change their project management, process management and inter-professional cooperation approaches.

⁷⁸ Lauritsen (n 48) 185-196.

⁷⁹ Markus Hartung, 'Thoughts On Legal Tech And Digitalization', in in M. Hartung, M. M. Bues, G. Halbleib (eds) *Legal Tech: How Technology is Changing the Legal World, A Practitioner's Guide* (CH Beck 2018) 13-14.

⁸⁰ *ibid.*

3. MAPPING THE LEGAL TECH LANDSCAPE

Legal Tech is a brand-new concept in the law industry which has disrupted the traditional functions and operations of the legal services. It is a massive enabler to improve the legal market.

As this paper shows, the developments of the juridical system worldwide leads to new opportunities for Legal Tech.

Nowadays, lawyers and software developers are working together to find new solutions for clients satisfaction and law firms' profitability.

The author considers crucial for a prosperous legal business to properly understand what Legal Tech is and how it works, as well as the impact, both positive and negative, of this technology on the juridical system.

This chapter will focus on the developments of the Legal Tech industry and will outline the main characteristics of this transformation process, as well as the primary legal issues that the industry encounters when using technology.

3.1. Legal Tech as a Tool and as a Service

Legal Technology or Legal Tech is a term that refers to the adoption of innovative technology in the law system to facilitate the delivery of legal services.

At first sight, there is not too much in common between Information Technology and lawyers.

Information Technology is fast, based on a robust framework and futuristic, while lawyers are precautionary, wordy and conventional. But in the last decades, the influence of information technology on the law system has increased significantly, and it started to play a central role in legal practice and research.⁸¹

Together with the developments of artificial intelligence and machine learning, the technology is now expanding in a range of legal fields, providing online platforms which can replace the routine tasks of a lawyer, making them more efficient and cheaper.⁸²

⁸¹ Hartung (n 79) 3-6.

⁸² Willem Ridder, 'Blog. The Future Of Legal Services. Part 6 Of The Series 'Disruption And New Business Models'' (*Futures Studies*, 17 April 2017) <<https://futuresstudies.nl/en/2017/04/17/blog-the-future-of-legal-services-part-6-of-the-series-disruption-and-new-business-models/>> accessed 17 May 2019.

Figure 10 describes the legal fields where technology is widely used based on their profitability.



Figure 10: Legal Tech Key Market Segmentation (\$M)⁸³

Most of the Legal Tech Software solutions are based on the latest information technology approaches, bringing five main benefits for law firms:⁸⁴

- Enable lawyers to be more efficient at legal advice delivery;
- Are cost-effective by replacing remunerated lawyer with software;
- Create process innovation and new business models for law firms;
- Improve the lawyer-client relationship by providing cheaper and faster legal services;
- Generate new legal fields, such as cybersecurity, data protection and new technology laws.

Usually, Legal Tech companies are startups founded with the purpose of replacement the operation of the traditionally conservative legal profession with improved and simplified legal counselling⁸⁵.

⁸³ Adapted from Hongdao and others (n 12).

⁸⁴ The Law Society of England and Wales, 'The Future of Legal Services' (*The Law Society* 28 January 2016) <<https://www.lawsociety.org.uk/support-services/research-trends/the-future-of-legal-services/>> accessed 17 May 2019

According to their ultimate purpose, these companies divide as follows:⁸⁶

- Legal Tech that supports lawyers in their work, for example, any software and tools that are maximising the professional productivity, by taking care of the daily repetitive tasks.
- Legal Tech used as a marketplace that brings clients and lawyers together, such as online platforms meant to find the lawyer that will suit the client's best interest.
- Legal Tech software meant to provide individual and autonomous legal services.

Based on the technology adopted and used, there are four categories of Legal Tech startups:⁸⁷

- Online legal services

This category includes startups that offer online legal services without the need to involve an actual lawyer for consultation and guidance process. A prosperous Legal Tech startup in this field is LegalZoom⁸⁸.

- Online matching platforms

These kinds of platforms are connecting the clients with the fitting lawyer, without the costly engagement of a law firm.

- Artificial Intelligence Tools

The third category consists of startups that are using artificial intelligence tools for time-effective legal research activities. LegalSifter⁸⁹ is an example of a device that assists the lawyer in reviewing contracts faster.

- Blockchain Technology

The startups based in blockchain technology aim to replace lawyers as intermediaries in certain types of transactions. The most powerful impact that blockchain startups can have on the legal system is their ability to substitute notary and registry services.⁹⁰

⁸⁵ Marcelo Corrales, Mark Fenwick, Helena Haapio, Digital Technologies, Legal Design and the Future of Legal Professions in M. Corrales, M. Fenwick, H. Haapio, *Legal Tech, Smart Contracts and Blockchain, Perspectives in Law, Business and Innovation* (Springer 2019) 1-14.

⁸⁶ Hartung (n 79) 7.

⁸⁷ *ibid.*

⁸⁸ LegalZoom is an online legal tech startup, founded in 2001 in California that provides help for creating a range of legal documents without the need for consulting an actual lawyer. <<https://www.legalzoom.com/>> accessed 17 May 2019

⁸⁹ LegalSifter is a Legal Tech startup, founded in 2013 in Pennsylvania, that helps reviewing contracts faster and with less risks, by using artificial intelligence. <<https://www.legalsifter.com/>> accessed 17 May 2019.

⁹⁰ Mark Fenwick, Erik P.M. Vermeulen, The Lawyer of the Future as "Transaction Engineer": Digital Technologies and the Disruption of the Legal Profession in M. Corrales, M. Fenwick, H. Haapio, *Legal*

According to the Tech Index, Legal Tech products can be summarised as follows:⁹¹

- Automated Legal Advice Products

These are well structured and automated companies that process and enforce claims. They offer legal services or legal documents easily rapidly and cheaply.⁹² The software is designed to map a ‘process and decision tree’⁹³ which will apply automatically on similar future cases. Flightright⁹⁴ is an example of an automated legal advice product, that takes care of the compensation claims for air passengers.

- Electronic Marketplace

These products help the clients to find the ideal lawyer for their cases when their needs are not fulfilled by the automated products. The providers offer particular additional legal services, standardised and at fixed prices.

- Legal Process Outsourcing

Outsourcing startups aim the lawyers and law firms, and not the end-user. They provide project lawyers, employed for specific projects. In these situations, technology comes into use when, through electronic platforms, clients and project lawyers can exchange legal information more easily.⁹⁵

- eDiscovery and Document Review

In the case of these systems, a large amount of data and documents can be analysed in a short time, with fewer errors. They have the purpose of helping lawyers by carrying out daily repetitive activities that take time and precise attention to details.

The automation and standardisation of the daily tasks will change the role of a lawyer. By outsourcing the legal work to software and robots, the role of a lawyer is becoming more business-oriented centred its attention on increased efficiency, enhance client services and cost-reductions.⁹⁶

Tech, Smart Contracts and Blockchain, Perspectives in Law, Business and Innovation (Springer 2019) 253-272.

⁹¹ Tech Index is a database maintained by CodeX Center for Legal Informatics at Stanford University, where all international Legal Tech companies are included. <<https://techindex.law.stanford.edu>> accessed 24 July 2019

⁹² Hartung (n 79) 7-8.

⁹³ *ibid.*

⁹⁴ 'Claim Your Right For Flight Delay Compensation, Flightright' (*Flightright.com*) <<https://www.flightright.com>> accessed 24 July 2019.

⁹⁵ Hartung (n 79) 7-8.

⁹⁶ *ibid.*

No matter if Legal Tech is used as a tool, in order to facilitate the lawyer daily work, as a product, provided by the law firm for the purpose to customize their practice, or as a service, replacing the thorough lawyer tasks, the development of new technologies leads to more creative and faster legal solutions.

Even though a wide range of practice areas are segmenting the Legal Tech market, this research will focus on the following relevant technologies which can improve a law firms' business model:

- Artificial Intelligence
- Legal Automation
- Document Automation and Smart Contracts.

3.2. Artificial Intelligence in Law Industry

Artificial intelligence is the theory and development of computer systems able to perform tasks usually requiring human knowledge, such as visual perception, speech recognition, decision-making, and translation between languages.⁹⁷

This technology has been seen lately as a vital tool able to transform different industries worldwide, including the legal market.⁹⁸

When it comes to the law, it represents a hybrid between artifice and evolution, and, similar to artificial intelligence, it involves the use of code as a core instrument.⁹⁹

But the use of artificial intelligence in this field is not a new topic. Legal work involves by its nature a vast amount of unstructured data, which makes it a target for implementing artificial intelligence tools.

Based on legal scholars opinions, the use of technology in the field of law can be both remarkably innovative and incredibly disruptive.¹⁰⁰

In its article based on the improvement of the legal system through technology, the futurist Ray Kurzweil explained that '[W]e have the opportunity in the decades ahead to

⁹⁷ 'Artificial Intelligence, Definition Of Artificial Intelligence In English By Lexico Dictionaries' (*Lexico Dictionaries English*) <https://en.oxforddictionaries.com/definition/artificial_intelligence> accessed 20 May 2019

⁹⁸ Micha-Manuel Bues, 'Artificial Intelligence in Law' in M. Hartung, M. M. Bues, G. Halbleib (eds) *Legal Tech: How Technology is Changing the Legal World, A Practitioner's Guide* (CH Beck 2018) 265-274.

⁹⁹ Marc Lauritsen, 'Artificial Intelligence in the Real Legal Workplace' in Arno R. Lodder, Anja Oskamp, *Information Technology & Lawyers: Advanced Technology in the Legal Domain, from Challenges to Daily Routine* (Springer 2010) 185-196.

¹⁰⁰ Bues (n 98) 265.

make major strides in addressing the grand challenges of humanity. Artificial intelligence will be the pivotal technology in achieving this progress.’¹⁰¹

On the other side, back in 2014, the physicist Stephen Hawking gave a warning regarding the use of artificial intelligence because:

[T]he development of full artificial intelligence could spell the end of the human race... It would take off on its own, and re-design itself at an ever-increasing rate. Humans, who are limited by slow biological evolution, couldn't compete, and would be superseded.¹⁰²

Rollo Carpenter, the creator of Cleverbot, a software designed to chat like a human, also uttered its concerns about the development of artificial intelligence, concluding that ‘we cannot quite know what will happen if a machine exceeds our own intelligence, so we can't know if we'll be infinitely helped by it, or ignored by it and sidelined, or conceivably destroyed by it’.¹⁰³

A stronger opinion against the use of artificial intelligence and its negative consequences was the technology entrepreneur Elon Musk’s warning ‘(...) with artificial intelligence we are summoning the demon’.¹⁰⁴

Back in 2013, as an overall perspective, researchers Carl B. Frey and Michael A. Osborne predicted that more than 45% of all jobs would be replaced by artificial intelligence by 2033.¹⁰⁵

In the present, the OECD Employment Outlook 2019 estimates that 14% of jobs are at high risk of automation, significantly fewer than the researchers’ predictions.

Undoubtedly artificial intelligence is a powerful tool, and its potential is vast, being able to change the way lawyers are providing legal services.¹⁰⁶

¹⁰¹ Ray Kurzweil, 'Don't Fear Artificial Intelligence' (*Time*, 19 December 2014) <<http://time.com/3641921/dont-fear-artificial-intelligence/>> accessed 17 May 2019

¹⁰² Rory Cellan-Jones, 'Hawking: AI Could End Human Race' (*BBC News*, 2 December 2014) <<https://www.bbc.com/news/technology-30290540>> accessed 17 May 2019.

¹⁰³ *ibid.*

¹⁰⁴ Matt McFarland, 'Elon Musk: *With artificial intelligence we are summoning the demon*' (*The Washington Post*, 24 October 2014) <<https://www.washingtonpost.com/news/innovations/wp/2014/10/24/elon-musk-with-artificial-intelligence-we-are-summoning-the-demon/?noredirect=on>> accessed 10 May 2019

¹⁰⁵ Carl Benedikt Frey and Michael A. Osborne, 'The Future of Employment: How Susceptible are Jobs to Computerisation?' (Oxford University 2013) <https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf> accessed 17 May 2019.

¹⁰⁶ Organisation for Economic Co-operation and Development, 'The Future of Work', OECD Employment Outlook 2019 (OECD 2019) <<http://www.oecd.org/employment/employment-outlook-2019-highlight-en.pdf>> accessed 22 July 2019.

But, considering that the use of technology in the law system is rapidly growing, it is crucial to understand how it works.

The use of artificial intelligence involves a wide range of methods, algorithms and technologies, such as:

- Machine Learning, discussed below.
- Machine Vision enables trained software to evaluate and recognise images.¹⁰⁷
- Natural Language Processing, discussed below.
- Robotics is the industry related to the engineering, construction and operation of robots.¹⁰⁸

From these techniques, the most used are Machine Learning and Natural Language Processing.

Machine learning comprises a range of algorithms that enable the system's capacity to automatically learn and improve from experience without having to be explicitly programmed.¹⁰⁹

Machine learning algorithms are trained to fulfil a specific purpose, not being able to perceive new concepts and ideologies or understand some human contexts.

Supervised machine learning represents the main field of machine learning, and has the ability to identify patterns in the data and form heuristics, showing that artificial intelligence also requires an anthropomorphic component for supervision.¹¹⁰ In other words, supervised machine learning aims to predict as accurately as possible a result, based on already known cases and collected data.

Applications of machine learning in the field of law can involve forecasting decisions, legal expert systems and argumentation or document modelling.

Different approaches to machine learning can be used to identify clauses or specific content within a text, such as deep learning, inductive logic programs or decision tree learning.

¹⁰⁷ 'What Is A Machine Vision System (MVS)?, Definition From Techopedia' (*Techopedia.com*) <<https://www.techopedia.com/definition/30414/machine-vision-system-mvs>> accessed 22 July 2019.

¹⁰⁸ 'What Is Robotics?, Definition From Techopedia' (*Techopedia.com*) <<https://www.techopedia.com/definition/32836/robotics>> accessed 22 July 2019.

¹⁰⁹ Bues (n 98) 267-268.

¹¹⁰ *ibid.*

- Inductive logic programs or inductive reasoning represents the main engine of machine learning systems. It is the use of evidence to propose a theory, relying on the given data which makes it probabilistic or uncertain.¹¹¹
- Deep learning is an album of algorithms used in machine learning for designing and training neural networks considered highly promising decision-making points.¹¹²
- Decision tree learning is a tool that provides analysis results based on the input data. Its purpose is to make rapidly correct decisions.¹¹³

Law is mainly formed by written words, and Natural Language Processing is playing a vital role in this field.

This technology enables computers to analyse, interpret and understand the human language, to have as the central task the detection of syntax, semantics, relationship extraction and speech recognition.¹¹⁴

Based on different natural language processing techniques, more approaches are developed and trained by researchers to make artificial intelligence able to understand legal content, such as information extraction or information retrieval.

Information extraction represents a natural language processing technique, able to extract automatically structured information from unstructured or semi-structured machine-readable documents.¹¹⁵

Information retrieval is the opposite of information extraction. This technique deals with the recovery of information matching words in the query against the database index and reviews the database using hypertext links.¹¹⁶

Information extraction draws facts, while information retrieval looks for relevant documents, and used together, they aim to be a powerful tool for legal professionals.

Even if the use of artificial intelligence in the legal field is still at the beginning, the combination of the two techniques has evolved in the last years developing tools able to

¹¹¹ 'What Is Inductive Reasoning?', Definition From Techopedia' (*Techopedia.com*) <<https://www.techopedia.com/definition/32950/inductive-reasoning>> accessed 27 July 2019.

¹¹² <https://www.techopedia.com/definition/30325/deep-learning> (accessed 27 July 2019) 'What Is Deep Learning?', Definition From Techopedia' (*Techopedia.com*) <<https://www.techopedia.com/definition/30325/deep-learning>> accessed 27 July 2019.

¹¹³ 'What Is Decision Tree Software?', Definition From Techopedia' (*Techopedia.com*) <<https://www.techopedia.com/definition/13879/decision-tree-software>> accessed 27 July 2019.

¹¹⁴ Bues (n 98) 267-268.

¹¹⁵ *ibid.*

¹¹⁶ *ibid.*

improve the search and discovery of legal content in databases, classification of documents and extraction of information, and prediction of individual decisions.

The legal system has adopted and implemented, based on the characteristics mentioned above, some use cases.¹¹⁷

- Legal Databases.

As a field mostly based on research, the legal system sheers a mass of content often unlabelled, unstructured and imprecise.

The development of machine learning and natural language processing enabled the implementation of legal databases with fast and reliable search results. The researchers are confident that in the future, artificial intelligence techniques can improve the search ranking, query understanding and user classification.¹¹⁸

Lexis Answer¹¹⁹, a software able to interpret searches and mining answers, is an example of legal databases enhanced with machine learning and natural language processing provider.

- eDiscovery

Electronic Discovery is formed by artificial intelligence codes for the purpose to seek, locate, secure and search data to use it as evidence in legal cases.

Being a form of supervised machine learning, eDiscovery applies certain predictive search logic to large data sets and to reduce the number of irrelevant and unfit documents.¹²⁰

- Legal Analytics

The law industry encounters three types of legal analytics: descriptive, predictive and prescriptive.

Descriptive analytics can be used by lawyers to develop legal strategies by applying historical data aggregation and mining. It helps to analyse the behaviours of participants in litigations, forecast litigation costs and timing and determine the likely outcomes of the case.¹²¹

¹¹⁷ *ibid* 269.

¹¹⁸ *ibid*.

¹¹⁹ The program is provided by LexisNexis Legal & Professional, an US leading global provider of legal, regulatory and business information and analytics. <<https://www.lexisnexis.com/en-us/home.page>> accessed 19 August 2019.

¹²⁰ Bues (n 98) 267-268.

¹²¹ *ibid*.

Predictive analytics uses statistical techniques to predict future trends and results. Even though it can't replace human judgment and experience, it helps to decipher patterns based on current data.¹²²

By using prescriptive analytics, lawyers can receive recommendations on legal strategies that can be adopted based on similar cases from the past. By using historical trends, this technique analyses future decisions and advises on possible outcomes.¹²³

- Document Analysis

Lawyers are spending a lot of time reviewing contracts, tending to miss relevant details due to the manual process of analysing that involves an increased concentration.

The legal content analysis includes several artificial intelligence techniques to better assess a text, to classify various types of documents and clauses and for named entity recognition.¹²⁴

The application of these algorithms is still a young practice, but promising to provide a more accurate approach of legal contract analysis.

3.3. Legal Automation or how to build a Robot Lawyer

Technology has changed the business landscape in the last decades, and even if the legal system has tried to adopt most of the digital tools able to facilitate a lawyer's work, the legal service delivery did not suffer any transformation.

Legal services are still hourly-billed and provided by lawyers in law firms, legal departments or institutions. For most of the legal professionals, the automation of the legal system involves the replacement of their professions with robots able to provide proper assessments and counselling.

The development of the automation tools is based on the idea that a small individual expert system can decrease complexity and effort, can accelerate legal analysis and facilitate proceedings.¹²⁵

But the automation of the legal system as a whole, the replacement of the human thinking process, is not an achievable goal.

¹²² *ibid*, 168-170

¹²³ *ibid*.

¹²⁴ *ibid*.

¹²⁵ Michael Grupp, 'How to Build a Robot Lawyer', in M. Hartung, M. M. Bues, G. Halbleib (eds) *Legal Tech: How Technology is Changing the Legal World, A Practitioner's Guide* (CH Beck 2018) 249-257.

Information technology possesses limited semantic comprehension and for legal application is required a semantic highly sophisticated understanding, which makes the formalisation of legal reasoning very difficult.¹²⁶

When it comes to formalising the automatic legal thinking, the researchers have encountered struggles, because legal reasoning involves general knowledge, common sense and sense of justice.¹²⁷

Proper automation tools are developed based on artificial intelligence, natural language processing, and machine learning, all adaptable to legal services, and they can access vastly amounts digitised data such as legal documents, legal journals and research and court cases.¹²⁸

According to the Deloitte Insight Report from 2016, 'profound reforms' will take place in the legal sector, and almost 40% of legal professions will be automated in the longer term.¹²⁹

The company further predicts that by 2025, the jobs in the legal system will encounter overwhelming changes due to technological development and a new lawyer-client relationship, the need to offer more value for money.¹³⁰

Robotic Process Automation is a new technology that has evolved lately, promising significant efficiency benefits for the legal industry.

The Institute of Robotic Process Automation and Artificial Intelligence (IRPAAI) defines robotic process automation as:

The application of technology that allows employees in a company to configure computer software or a 'robot' to capture and interpret existing applications for processing a transaction, manipulating data, triggering responses and communicating with other digital systems.¹³¹

¹²⁶ *ibid.*

¹²⁷ Grupp (n 125) 249-257.

¹²⁸ Judith Bennett and others, 'Current State of Automated Legal Advice Tools', Networked Society Institute Discussion Paper 1 (Networked Society Institute 2018) <<https://apo.org.au/sites/default/files/resource-files/2018/05/apo-nid143431-1220271.pdf>> accessed 18 May 2019.

¹²⁹ Caroline Hill, 'Deloitte Insight: Over 100,000 Legal Roles To Be Automated, Legal IT Insider' (*Legaltechnology.com*, 16 March 2016) <<https://www.legaltechnology.com/latest-news/deloitte-insight-100000-legal-roles-to-be-automated/>> accessed 18 May 2019.

¹³⁰ Peter Saunders, 'Developing legal talent: Stepping into the future law firm' (*Deloitte*, February 2016) <<https://www2.deloitte.com/uk/en/pages/audit/articles/developing-legal-talent.html>> accessed 18 May 2019.

¹³¹ 'Definition And Benefits' (*IRPAAI*, 2019) <<https://irpaai.com/definition-and-benefits/>> accessed 19 May 2019.

By applying specific technologies, the process automation is used to standardise tasks and automate routine, freeing lawyers from the tedious responsibilities that take too much time.

Further, the IRPAAI states the benefits of using technology, which can also apply in the legal system.¹³²

First of all, the use of robotic process automation creates cost savings. According to the IRPAAI, ‘a software robot can cost as little as one-third the price of a full-time offshore employee’.¹³³

Second, robotic process automation has proved higher efficiency. As opposed to lawyers, robots can work continuously and produce the same work as five legal professionals. The automation of the judicial system is expected to improve the legal advice delivery by increasing the accuracy and value of the provided information.¹³⁴

Another use brought by the automation process is advanced analytics. The facility of gathering and organising data to predict future outcomes, by using technology, can ensure ‘regulatory compliance, cost-effective growth and optimised operations’.¹³⁵

An experiment conducted by LawGeex, an artificial intelligence contract review platform, called *AI vs Human*, has proved a harsh truth: ‘AI outperforms human lawyers in reviewing legal documents’.¹³⁶

Twenty lawyers were asked to review five non-disclosure agreements, while, at the same time, LawGeex artificial intelligence program was doing the same. The study was held for two months, and in the end, the software finished the test with an average accuracy rating of 94% and a reviewing time of 26 seconds, while the lawyers achieved an average of 85% and needed an average 92 minutes for assessing the contracts.

According to the experiment, a lawyer had a rating of 97% accuracy for a single agreement, while the artificial intelligence program had 100%.¹³⁷

Unlike humans, robots are trustworthy and consistent, able to perform the same daily work without error or fraudulence, achieving higher performance and quality.¹³⁸

¹³² *ibid.*

¹³³ *ibid.*

¹³⁴ *ibid.*

¹³⁵ *ibid.*

¹³⁶ Kyree Leary, 'The Verdict Is In: AI Outperforms Human Lawyers In Reviewing Legal Documents' (*Futurism*, 27 February 2018) <<https://futurism.com/ai-contracts-lawyers-lawgeex>> accessed 19 May 2019.

¹³⁷ *ibid.*

The implementation of robotic process automation system in the law firms business model can offer two solutions: complete automation and hybrid automation.

Through complete automation, the entire legal activities will be done by the robot, which will generate solutions for the lawyer or the end client.¹³⁹

In the case of hybrid automation, the robot is just observing the tasks executed by the lawyer, as a virtual colleague, being able in the end to perform the repetitive tasks correcting the errors.¹⁴⁰

A notable example of robot lawyer is the artificial intelligence lawyer ROSS¹⁴¹, ‘the world’s first artificially intelligent attorney’ based on IBM’s cognitive computer Watson.¹⁴²

The program was designed to collect, analyse and understand the case law and legal literature, and then generate responses, faster, errorless and cheaper than a lawyer. ROSS is also able to learn from experience and gain knowledge through interaction.¹⁴³

3.4. Document Automation and Smart Contracts for Future Lawyers

Documents and contracts are probably the most popular product of legal work. The new technological tools are playing an essential role in the document creation, making it faster, more accessible and errorless.¹⁴⁴

The concepts of document automation and smart contracts mean that anyone can automatize the execution and enforcement of their legal obligations, ensuring at the same time better compliance with laws.

¹³⁸ Grupp (n 125) 249-257.

¹³⁹ Sriram Chakravarthi, 'Robotic Process Automation Comes To The Legal Industry' (*Linkedin.com*, 5 July 2017) <<https://www.linkedin.com/pulse/robotic-process-automation-comes-legal-industry-sriram-chakravarthi/>> accessed 19 May 2019.

¹⁴⁰ *ibid.*

¹⁴¹ ROSS Intelligence is a Legal Tech artificial intelligence solution, developed in 2014 in California. <<http://www.rossintelligence.com/>> accessed 17 May 2019

¹⁴² 'AI Lawyer “Ross” Has Been Hired By Its First Official Law Firm' (*Futurism*, 11 May 2016) <<https://futurism.com/artificially-intelligent-lawyer-ross-hired-first-official-law-firm>> accessed 20 May 2019.

¹⁴³ *ibid.*

¹⁴⁴ Braegelmann (n 148).

3.4.1. Document Automation Software

Drafting legal documents such as contracts or other agreements involve extreme care and attention, and ‘efforts that were prone to introducing errors and took a great deal of time’.¹⁴⁵

In 2012, according to a report by Lumen Legal, was considered that the use of document automation by lawyers, to create documents and packages, can increase their effectiveness by 80%.¹⁴⁶

Until 2015, the existing document automation tools were difficult to use, and inefficient from the profitability point of view due to the billable hour practice. In the same year, Geoffrey Goldberg suggested that the:

[...] corporate clients continue to pressure their law firms to cut costs, increase efficiency and move to fixed fees and alternative fee arrangements. [...] Law firms are also grappling with partners and associates jumping from firm to firm, taking knowledge and clients with them. Document automation can help address all of these problems.¹⁴⁷

Document Automation Software plays an important role when it comes to Legal Tech solutions. This technique increases the quality and efficiency of legal work, generating legal documents in an effortless and faster way, with fewer errors. All the document templates are centrally managed, all the updates being available to all users.¹⁴⁸

Through this technology, it is expected an increase in the efficiency of lawyer work and a reduction of firms reliance on the billable hour resulting into significant savings for the clients, and increase profitability for the firm.¹⁴⁹

The program is designed to generate parts of a document which can be standardised and reproduced for each case, lawyers being able to dedicate more time on those parts that depend on their assessment.¹⁵⁰

¹⁴⁵ Geoffrey Goldberg, 'What Is Document Automation?' (*Law Technology Today*, 30 January 2015) <<https://www.lawtechnologytoday.org/2015/01/document-automation/>> accessed 19 July 2019.

¹⁴⁶ *How Law Firms Use Document Automation to Turn Today's Price Pressures Into a Competitive Advantage* (Lumen Legal 2012) <<http://www.lumenlegal.com/wp-content/uploads/2012/07/Legal-Document-Automation-Report.pdf>> accessed 19 July 2019.

¹⁴⁷ *ibid.*

¹⁴⁸ Tom Braegelmann and Markus Kaulartz, 'Smart Contracts for Modern Lawyers' in M. Hartung, M.M. Bues and G. Halbleib (eds), *Legal Tech: How Technology is Changing the Legal World, A Practitioner's Guide* (C.H. Beck, 2018).

¹⁴⁹ Goldberg (n 145).

¹⁵⁰ *ibid.*

Being a new practice, it encounters challenges when it comes to an understanding of how it works and how the lawyers can benefit by using this technology.

An automated document creation program works in general based on individual document templates, called programmed-templates.

First, to develop a programmed model, the existing templates will be included in a single pattern. Second, the obtained template will be algorithm-based, and, in the end, the model will be programmed.¹⁵¹

The first two steps have their bases on legal work that can be carried out by lawyers with specialised training. The final step involves specialists and a technical approach, which includes the use of variables and control commands founded on a specific programming language.¹⁵²

PerfectNDA is a software, developed by the Artificial Intelligence software platform Neota Logic System, that ensures correct non-disclosure template selection and automates non-disclosure document filing, based on the user's existing templates.¹⁵³

In the end, the user can fill in a non-disclosure agreement in 'six clicks', having more time to dedicate to the 'business at hand', thus providing efficiency for the professional and the firm.¹⁵⁴

The main achievement of the use of document automation is the reduction of the unrecoverable hours associated with document drafting, in this way helping the law firms to bring new clients, and to increase profits by combining better services at lower costs.¹⁵⁵

Another accomplishment can refer to knowledge management and retention. By using technical language, the lawyer's expertise is codified and maintained in the system, which helps the firm to reduce knowledge drains.¹⁵⁶

The lawyers should understand how to use the program based on their field of practice, and what tasks are appropriate for the use of templates, in this way a proper implementation of the software in the law firm structure leads to an efficient way of using it.

¹⁵¹ Braegelmann (n 148).

¹⁵² *ibid.*

¹⁵³ 'Perfectnda - Neota Logic' (*Neota Logic*) <<https://www.neotalogic.com/product/perfectnda/>> accessed 19 July 2019).

¹⁵⁴ Braegelmann (n 148).

¹⁵⁵ *ibid.*

¹⁵⁶ *ibid.*

3.4.2. Smart Contracts and Blockchain Technology

To understand how Smart Contracts work and how law firms and their clients can use them, the author considers it necessary to describe Blockchain technology and its features.

The Blockchain is considered a decentralised and distributed cryptographic digital ‘ledger’ used for recording transactions. This technology allows clients who do not know or trust each other to engage in an extensive digital record of ‘who owns what’ that enforces the consent of everyone concerned.¹⁵⁷

Blockchain technology represents a new infrastructure for data storage and software application management, decreasing the need for centralised control.¹⁵⁸ It constitutes a public database having the potential to store and transfer tangible assets such as physical properties, and intangible assets such as information, reputation or ideas.¹⁵⁹

This technology can be regarded as a robust public database with a high level of trust, which allows parties to send, receive and store information through a distributed peer-to-peer network of multiple computers. Every transaction circulates through the entire system and, when it ratifies the validity of the transaction based on past deals from the previous blocks, it is recorded on a ‘block’. Each block follows the other one successively, keeping the complete history of all transactions that have been done, not allowing the parties to erase or hide certain information.¹⁶⁰

The Blockchain purpose is to provide transparency, through a checkable way of keeping transactions, as everyone holds the ledger, and to present trust, for the distrustful parties when it comes to contracting without intermediaries, through the inflexibility of these transactions using a consensus protocol.¹⁶¹

By acting as a database that keeps every transaction executed in the network, it is trying to decentralise the certification process, providing a high level of security and protection for the parties.¹⁶²

¹⁵⁷ Corrales (n 85) 2-3.

¹⁵⁸ Primavera De Filippi, Aaron Wright, *Blockchain and the Law: The Rule of Code* (Harvard University Press 2018) 33.

¹⁵⁹ Corrales (n 85) 3.

¹⁶⁰ *ibid.*

¹⁶¹ Vanessa Mak, Then Foek Eric Tjong Tjin Tai and Anna Berlee, *Research Handbook In Data Science And Law* (Edward Elgar Publishing 2018) 159.

¹⁶² *ibid.*

The first Blockchain was an essential characteristic of Bitcoin, a cryptocurrency created by Satoshi Nakamoto¹⁶³ to prevent ‘double spending’, acting as an autonomous public recorder for all Bitcoin network transactions.¹⁶⁴

In 2016, the founders of Slock.it¹⁶⁵ launched the first decentralised independent organisation called ‘The DAO’, based on the blockchain platform Ethereum¹⁶⁶. This ‘employee-less company’ was entirely controlled by its shareholders and raised more than \$150 million US from the sale of the virtual tokens to them. More than that, the shareholders were able to sell their virtual tokens on a range of web platforms or to transfer these currencies on the Ethereum blockchain and redeem them through ‘DAO Entity ‘split’ process’.¹⁶⁷

In the same year, an anonymous ‘hacker’ succeeded to hack the system and, by using the terms and conditions of the smart contracts and truly understanding them. The hacker was able to design the program to give back multiple times the DAO’s currency¹⁶⁸ before the smart contract could update its balance and diverted between \$40 and 50 million US from the company fund.¹⁶⁹

Even though DAO was designed to be a fully decentralised peer-to-peer network company, its founders admitted that the members from the DAO’s community were looking for leadership.¹⁷⁰

Cryptocurrencies, based on the decentralised Blockchain technology, such as Bitcoin or Ethereum, have led to the appearance of Smart Contracts.

Back in 1996, Nick Szabo was the first one who approached the concept of Smart Contracts and defined a contract as ‘a set of promises agreed to in a meeting of the minds’, as ‘the traditional way to formalise a relationship’.¹⁷¹

¹⁶³ Satoshi Nakamoto is a pseudonym that refers to a person or a group of people, credited for exploring the first block of Bitcoin in 2008. <<https://nakamotoinstitute.org>> accessed 19 July 2019.

¹⁶⁴ Corrales (n 85) 4-5.

¹⁶⁵ Slock.it is an online company that works with startups and corporations worldwide to implement secure and functional blockchain solutions, <www.slock.it> accessed 19 July 2019.

¹⁶⁶ Ethereum is the world’s leading programmable blockchain, launched in 2015 by the programmer Vitalik Buterin, and has a native cryptocurrency called Ether. <<https://www.ethereum.org>> accessed 19 July 2019.

¹⁶⁷ Mak (n 159) 161.

¹⁶⁸ Samule Falkon, ‘The Story Of The DAO — Its History And Consequences’ (*Medium*, 24 December 2017) <<https://medium.com/swlh/the-story-of-the-dao-its-history-and-consequences-71e6a8a551ee>> accessed 19 July 2019.

¹⁶⁹ Mak (n 159) 161-162.

¹⁷⁰ Falkon (n 168).

Regarding smart contracts, he stated that:

I call these new contracts ‘smart’ because they are far more functional than their inanimate paper-based ancestors. No use of artificial intelligence is implied. A smart contract is a set of promises, specified in digital form, including protocols within which the parties perform on these promises.¹⁷²

Wattenhofer provides a definition that connects both Blockchain technology and Smart Contracts as ‘an agreement between two or more parties, encoded in such a way that the correct execution is guaranteed by the Blockchain’.¹⁷³

Since the first emergence of it, the concept of Smart Contracts has gone through development and innovation, nowadays it can be described as software that runs in a digital environment to generate and enforce legal agreements or statutory obligations.¹⁷⁴

Smart Contracts developers consider that ‘in many ways, smart contracts are no different than today’s written agreements’.¹⁷⁵

Figure 13 below describes, in short terms, how a Smart Contract is designed by using Blockchain technology:

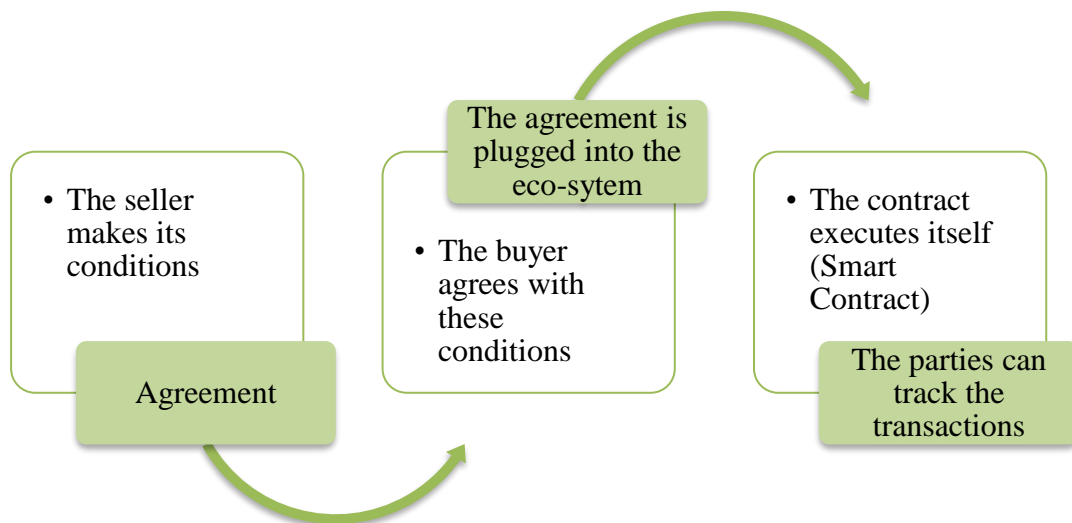


Figure 11: How Smart Contracts work?¹⁷⁶

¹⁷¹ Nick Szabo, 'Smart Contracts: Building Blocks For Digital Markets' (*Fon.hum.uva.nl*, 1996) <http://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo.best.vwh.net/smart_contracts_2.html> accessed 20 May 2019.

¹⁷² *ibid.*

¹⁷³ Roger Wattenhofer, *The Science of the Blockchain* (CreateSpace Independent Publishing Platform 2016) 88.

¹⁷⁴ Braegelmann (n 148).

¹⁷⁵ De Filippi (n 158) 74-75.

¹⁷⁶ Adapted Corrales (n 85) 21.

As shown in Figure 11, in order to execute a Smart Contract, parties have to negotiate first the terms of their agreement. Once agreed, the clauses are recorded in Smart Contract code, triggered by digitally signed Blockchain-based transactions. In case of disputes, parties can renegotiate the arrangement or address to a court or arbitration panel for compensations.¹⁷⁷

From the legal point of view, a Smart Contract is a software programmed to perform an obligation which has been already legally agreed outside of the code by the parties. The duties are not written in a common legal language. They are integrated into the system by using a programming language which offers the ability of a smart contract to enforce those obligations by using an autonomous system.

In other words, by using computer code, the parties can negotiate complex transactions, with reduced costs outcoming from the absence of third parties. Also, Blockchain is working continuously, thus with this technology, time and transaction costs are reduced, providing greater efficiency when doing long term business.¹⁷⁸

Figure 12 illustrates a comparison between the traditional use of contracts and the future applications of Smart Contracts in the legal system:

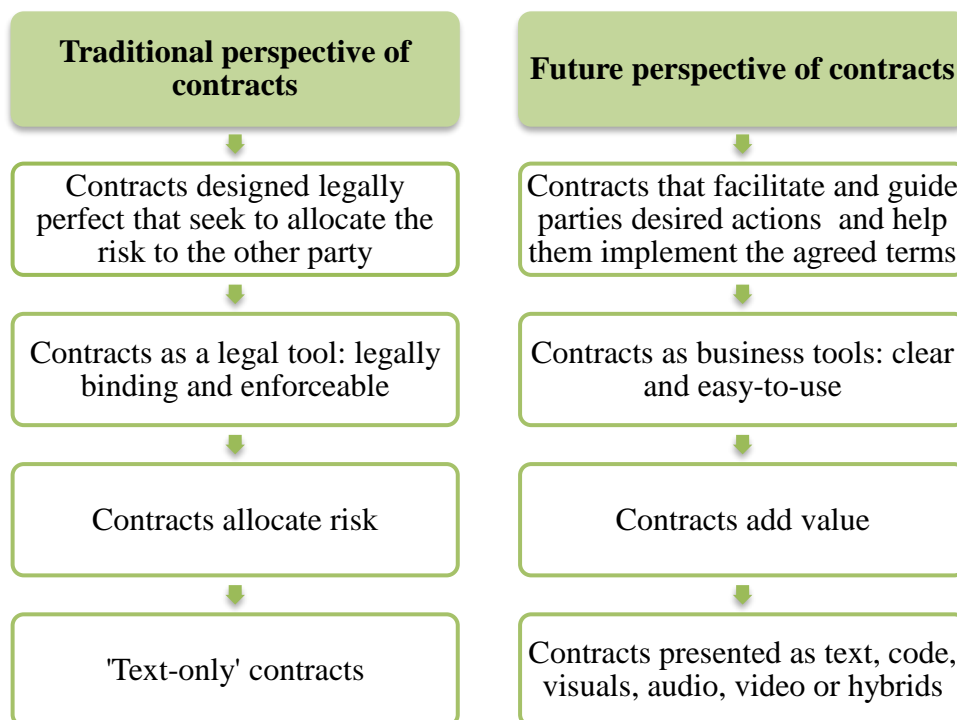


Figure 12: Future perspective of contracts¹⁷⁹

¹⁷⁷ De Filippi (n 158) 74-75.

¹⁷⁸ Corrales (n 85) 5.

¹⁷⁹ Adapted from Corrales (n 85) 9.

Even though the use of smart contract in the legal system is still rare, the European Parliament resolution from 2016 encourages this practice by ‘recognising (...) the potential of smart contracts combined with digital signatures, applications allowing for heightened data security and synergies with development of the Internet of Things’.¹⁸⁰

Since the Blockchain and Smart Contracts are new and disruptive technologies, the implementation in the legal field remains difficult. Understanding and using these solutions requires technical competence and skills and finding specialised personnel to adapt it within the structure of law firms can take time.¹⁸¹

One of the main issues of using Smart Contracts remains the difficulty to embed the laws into the digital code and to translate the technical language into an agreement. Because such language uses algorithms, lawyers or legal professionals should be able to understand coding and to learn how to code.¹⁸²

Another legal challenge appears to be the anonymity regarding the use of cryptocurrencies, which can facilitate criminal activities such as money laundering or selling prohibited goods online.

The lack of regulation in this field generates not only some legal concerns but also stagnates the development and adaptation of Blockchain and Smart Contracts.¹⁸³

¹⁸⁰ European Parliament Resolution of 26 May 2016 on virtual currencies [2016] (2016/2007(INI)) 2018/C 076/13.

¹⁸¹ Corrales (n 85) 6.

¹⁸² De Filippi (n 158) 191

¹⁸³ De Filippi (n 158) 192.

4. A NEW BUSINESS MODEL PROPOSAL

The legal advice delivery market is reshaped by the development of Legal Tech solutions together with new demands from modern clients, as shown in the figure below.

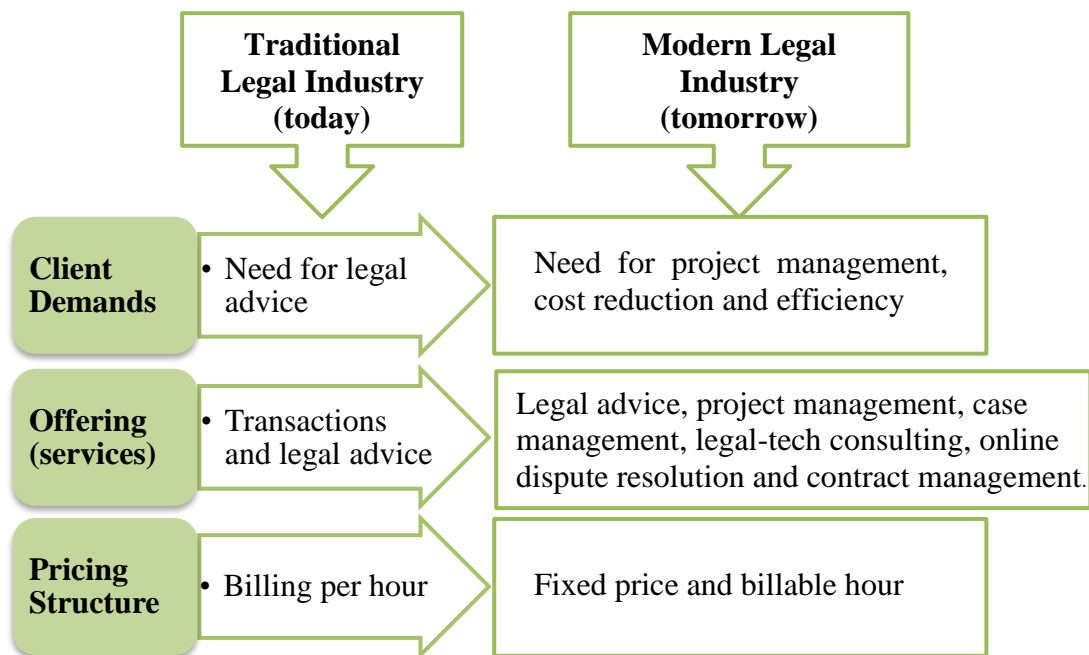


Figure 13: New demands of modern clients compared with traditional ones¹⁸⁴

At the beginning of 2019, the Legal Tech market was estimated to be a \$16 billion industry, providing solutions and tools for both law firms and legal departments.¹⁸⁵

This chapter will explore some changes that a law firm should implement to succeed in the new market hit by digital transformation.

4.1. Improving Access to the Legal System through Technology

The digital transformation represents ‘the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business’.¹⁸⁶

The digitalisation of the legal industry involves the use of technology to improve productivity and add value to firms and to reduce the cost of legal services delivery.

¹⁸⁴ Adopted from The Boston Consulting Group and Bucerius Law School (n 19) accessed 17 May 2019.

¹⁸⁵ Kirk Mahoney, 'Legal Tech Market Overview, Catalyst Investors' (*Catalyst.com*, 29 November 2017) <https://catalyst.com/research_item/legal-tech-market-overview/> accessed 24 July 2019.

¹⁸⁶ Bues (n 3) 15-26.

To benefit from the new digital tools, law firms have first to change their mindset, business culture and models.

This change involves new adaptations, which will allow the legal professionals to investigate, experiment and embrace recently developed technologies. Enhancing the traditional business model based on new digital designs is required for the changing and challenging market environment.¹⁸⁷

Professor Jonathan Molot of the Georgetown Law School states in one of its studies that ‘the law firm partnership is a poor institutional choice for the delivery of legal services in today’s legal market. Its structure fails to serve virtually all of its stakeholders.’¹⁸⁸

Most of the worldwide law firms are structured in fixed departments, which control and organise the lawyers.

By using technology, the new structure will focus on project teams to achieve particular aims.

Also, in the traditional business model, every law firm bills its clients and compensates its lawyers based on the amount of time used to deliver the legal services.

An innovative structure will require a new billing system.

The new technologies, the automation of the services and the multi-sourcing have a clear objective, to reduce the amount of time and improve the productivity for delivering legal counselling.¹⁸⁹

To increase their profitability in a new digitalised market, law firms should rethink two elements: their value and their operating model.

First of all, to achieve a sustainable transformation, traditional law firms should aim the following goals:¹⁹⁰

- Understand how digital solutions can be utilised in daily work, to win market shares, add value, increase productivity, and decrease costs;
- Take a look at the clients’ demands and gain their insights into the new services;
- Obtain information about technologies that are threatening their business;
- Develop a business model which will address these opportunities and threats.

¹⁸⁷ *ibid.*

¹⁸⁸ Jonathan T. Molot, *What’s wrong with law firms? A corporate finance solution to law firm short-termism* (Southern California Law Review, Vol. 88:1, 2014) 4.

¹⁸⁹ Bues (n 3) 15-26.

¹⁹⁰ *ibid.*

To fulfil these goals, firms have to go through two steps.¹⁹¹

The first step involves the creation of a new vision by making research on the digital market.

The second point includes the establishment of precise goals by following the S.M.A.R.T. criteria, which means to set specific, measurable, attainable, relevant and time-bound goals.¹⁹²

4.1.1. A New Business Model

As mentioned in the previous chapters, the Legal Tech landscape includes three categories: enabler technology to facilitate the digitalisation, programs for support-process, and substantive law solutions.

Any legal business has to start its digital transformation by creating a clear strategy and vision. Legal Tech is an enabler of digital transformation, and together with a good tactic, strong leadership, and developed culture drives the business innovation and evolutions.¹⁹³

To survive in the new digitised legal market, and to generate and offer value, law firms should implement these approaches in their business model.

But the development of a new business model requires significant investments and alteration of the products and services offered.¹⁹⁴

By implementing new products and services, the firm should also find new ways of remuneration and revenue generation.

For example, a digital business model may include developing software and designing a new pricing model for an additional cost and offer value to clients. More than that, law firms can create digital platforms for legal advice, which will improve the platform value for clients.¹⁹⁵

In the new business model, law firms should reshape the value proposition by offering more than support on litigation and transaction cases. They can also provide

¹⁹¹ *ibid.*

¹⁹² *ibid.*

¹⁹³ Prasanna Kumar Illa, 'Integrations: Key Technology Enablers In Digital Transformation' (*DATAVERSITY*, 1 October 2018) <<https://www.dataversity.net/integrations-key-technology-enablers-digital-transformation/>> accessed 22 June 2019.

¹⁹⁴ *ibid.*

¹⁹⁵ *ibid.*

project management by creating a department dedicated to this new service to leverage legal technologies.¹⁹⁶

Also, they can implement in their practices, advanced legal analytics and decision-support solutions. Going further, the law firms can become intermediate between clients and Legal Tech providers, and guide clients to legal outsourcing partners to retain control over mandates and strengthen their business.

Scholars have developed three strategic growth paths for successful companies that can be implemented by the ambitious law firms, namely:¹⁹⁷

- Build Strategy
- Borrow Strategy
- Buy Strategy

Build Strategy involves the development of internal Legal Tech solutions inside of the firms. The design of new capabilities can be seen as a resource straining exercise, by using the software developers, data analysts and coders from different parts of the business can create the right environment for a law firm to explore this strategic option.¹⁹⁸

Borrowing Legal Tech solutions by contracting or signing partnerships with external Legal Tech startups may be another strategy for the law firms digital transformation.

Law firms can achieve this plan by following two paths: by licensing the Legal Tech solutions, either through strategic partnerships with Legal Tech entities.¹⁹⁹

The possibility of buying Legal Tech solutions is another strategy for the firms to integrate technology into their business model and practice.²⁰⁰

This research concludes four types of legal businesses that will exist in the future:

- Law firms. The already existing law firms, with the traditional mindset and business structure, that refuse to develop and struggles with the market competition.

¹⁹⁶ The Boston Consulting Group and Bucerius Law School (n 19) accessed 17 May 2019

¹⁹⁷ Laurence Capron, *Will Mitchell, Build, Borrow, or Buy: Solving the Growth Dilemma* (Harvard Business Review Press 2012).

¹⁹⁸ *ibid.*

¹⁹⁹ *ibid.*

²⁰⁰ *ibid.*

- New law firms. These are the existing law firms that are open to digital transformation and decide to implement technologies in their legal service delivery.
- Legal Tech firms. The Legal Tech startups that provide more accessible and cheaper access to legal information and legal aid.
- Corporate legal departments. The future corporate legal departments provide reduced legal costs, improved contract reviewing and drafting and contract management, and automated daily tasks run by Legal Tech tools.

4.1.2. An Innovative Business Structure

Digital transformation also has a massive impact on law firms structure, hierarchies and revenue.

The traditional pyramid model, in which the revenue is based on the daily associates' work and high hourly rates, will be replaced with the 'rocket-shaped model', in which clients will demand to pay fixed fees for legal services, and a partner will have fewer associates, who will be supported by software and digital tools, as shown in Figure 14.²⁰¹

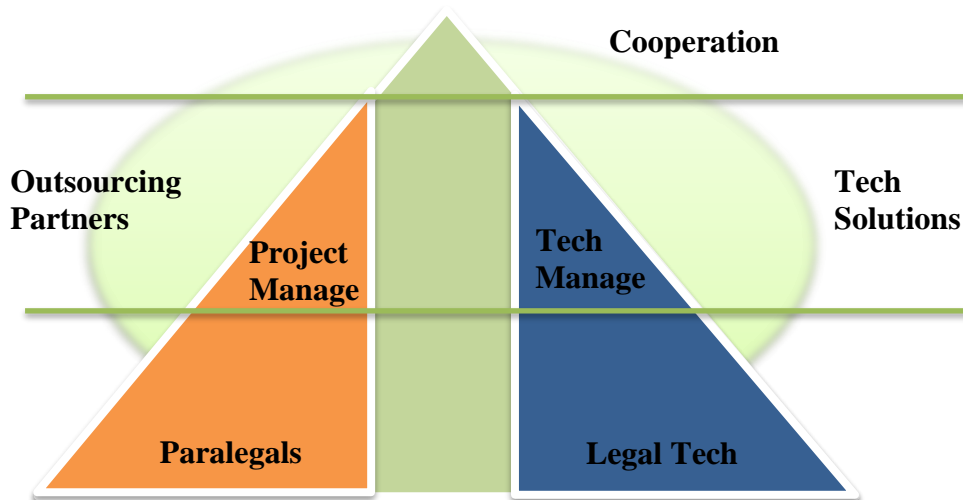


Figure 14: The pyramidal structure of the future law firm business model²⁰²

In the new model, a new hierarchy will be adopted due to the decrease in revenue generated by a partner.

²⁰¹ The Boston Consulting Group and Bucerius Law School (n 19) accessed 17 May 2019.

²⁰² Adapted from The Boston Consulting Group and Bucerius Law School (n 19) accessed 17 May 2019.

For example, central management that will execute complex decisions will replace the traditional decision-making power of the partner.²⁰³

The conventional career track will also be changed. Associates will no longer have the possibility to become partners because the number of partners will not increase. In this situation, modern law firms should find new ways to recruit young lawyers and compensate for this decrease in opportunity.²⁰⁴

Also, with the digitalisation of the law firms, the number of non-lawyers will increase by hiring digital, technological and operational experts. This significant investment in the workforce brings forth a new challenge for firms: to cede power to non-lawyer staff. Investing in software means that the non-legal departments will have a leading role in digital transformation, which leads to a new corporate structure where external investments and mitigation risks will rise.²⁰⁵

Another challenge for law firms is the pricing model. Traditionally, law firms have used as a pricing method the billable hour model.

According to the new developments, this pricing structure has to be changed and adapted to new clients demands.

To rethink the pricing approach, a law firm should follow some steps:²⁰⁶

- Get insight into clients price expectations;
- Analyse how their services are provided and what can be changed;
- Develop a cost structure based on each service delivered;
- Design templates for each task, level of fee earner and time required;
- Implement an automated management tool incorporating the template created.

As a new cost structure, law firms will move to a model based on wages and technology, which will bring cost-saving efficiencies.

Standard tasks will be handled by digital programs in a quicker and errorless manner, and by changing the revenue model to fixed pricing, the young lawyers will have a motivation to be more efficient and productive.

²⁰³ The Boston Consulting Group and Bucerius Law School (n 19) accessed 17 May 2019

²⁰⁴ *ibid.*

²⁰⁵ *ibid.*

²⁰⁶ Hodgar (n 26) accessed 21 May 2019.

4.2. The New Client's Relationship

For generating profit and creating value for the law firm, the new business model has to create value for the clients.

Firms must understand their clients' needs and what they expect from the legal industry to deliver legal services at the right price and with an increased value. But, complying with the clients' needs and demands presents the most challenging transformation for law firms.

Clients have started to ask for higher transparency on fees, quicker analysis of facts and better advice despite the quality of data at hand, and for delivering these requests, law firms should rethink the 'lawyer-client relationship'.²⁰⁷

A new dynamic relationship requires a business model adapted to the changes in the clients' operating environment, which can be achieved by supporting client value creation, through business development processes, client management processes, delivery of services, as well as pricing and revenue flows.²⁰⁸

While technology is developing fast, advice should be offered to the clients more proactively and preventatively, the human aspects remaining very important.

Lawyers should become more enterprising and provide a customised service to clients. As an example, client relationship management can be implemented in the firm structure, which will gain clients' support and understanding.²⁰⁹

According to BDO Report from 2017, to obtain a new relationship, the law firms have to approach the following changes:²¹⁰

- Improve connectivity and integration
- Price changes
- Less face-to-face interaction
- Closer partnerships
- Better collaboration between clients, law firms, and third partners

²⁰⁷ *ibid.*

²⁰⁸ *ibid.*

²⁰⁹ Sdu, 'European Legal and Tax innovation Study' (*SDU* 2018-2019) <https://www.sdu.nl/content/sites/default/files/PDF/Sdu_European%20legal%20and%20tax%20innovation_NL.pdf?utm_source=marketingmail&utm_medium=email&utm_campaign=innovationstudy&utm_content=bedankmail&utm_term=do> accessed 21 May 2019

²¹⁰ BDO, 'Report 4: Changing Client Relationship', Law Firm Leadership Series - Managing rapid change (BDO 2017) 1-10, (available: < <https://www.bdo.co.uk/en-gb/law-firm-leadership-series-2017/overview>>) accessed 21 May 2019.

Improved connectivity and inclusion requires a proper implementation process of technology between law firms and their clients, platforms for sharing data and management tools and a collaborative online workspace.

These transformations will give clients more control by having direct access to data and more transparency on their case progress and costs.²¹¹

Regarding the price changes, new fees should be designed to deliver clients more value and transparency, which will offer the ability to share more of the risks and reward with their law firms.²¹²

The ability to communicate with the clients using online tools will bring more flexible working arrangements for lawyers and lower costs for clients. Law firms should not forget to balance the capacity to work remotely with the necessity to build closer relationships with clients.²¹³

Finally, lawyers and other experts will have to learn how to work together to provide more advice and support to their clients.

A new relationship means ‘identifying those areas where we are able to make a difference and create value to our client's business - being trusted partners, and not just trusted advisors’.²¹⁴

4.3. The Law Firm and Lawyer of the Future

The development of technology has announced to bring changes in the future legal landscape. It will change the business model and structure of the law firms, will transform the pricing structure and will lower the number of legal professions by changing the nature of legal jobs.

The future law firm will be geographically broader, with offices and expertise worldwide, offering to their clients a more comprehensive range of legal services, provided with the help of technological solutions.²¹⁵

²¹¹ *ibid.*

²¹² *ibid.*

²¹³ *ibid.*

²¹⁴ *ibid.*

²¹⁵ The Law Society of England and Wales, ‘Capturing Technology Innovation in Legal Services’ (The Law Society 2017) <file:///C:/Users/Dobre%20Catalina%20Elena/Desktop/capturing-technological-innovation-report.pdf> accessed 21 May 2019.

Clients will expect an increase in advice delivery and more accurate information. Therefore the services provided by the law firm have to be easy-to-understand and easy-to-use.

In the legal business will appear narrower cylinder for lawyers, and ‘non-lawyers’ departments, while some tasks performed by full-time associates will be augmented by technology.

Another aspect of the future law firm is the concept of ‘data-driven business’. Law firms will operate based on data-supported knowledge of clients history, which will provide them access to information for consulting purpose.²¹⁶

The goal of the firm will change from ‘selling the diverse skills of a law firm’, to develop tailor-made offers based on knowledge and forecast of future client needs.²¹⁷

Implementation of technological services will lead to an extension of the labour division. The non-lawyers, such as programmers, data analysts, and legal technicians, will work next to lawyers, to design new legal products and services.

Also, new firm management will be implemented, consisting of partners and professional managers who will share responsibilities and be accountable for their fields.²¹⁸

For future law firms, another change is the opportunity to invest. For a full implementation of the digital transformation, the firm will have to invest in technology, training and more education.²¹⁹

Development of Legal Tech has a significant impact on future law firms. They will be based on a cooperation system between lawyers and non-lawyers, a client-centred design of new and user-friendly products and services, and increased efficiency and productivity.²²⁰

Future lawyers will be cross-competent leaders who will provide full services for their clients, and will combine human skills and digital skills.

²¹⁶ Hariof Wenzler, Big Law & Legal Tech in M. Hartung, M.M. Bues and G. Halbleib (eds), *Legal Tech: How Technology is Changing the Legal World, A Practitioner’s Guide* (C.H. Beck, 2018) 44-48.

²¹⁷ *ibid.*

²¹⁸ *ibid.*

²¹⁹ *ibid.*

²²⁰ Michele DeStefano, Erika C. Pagano, Transforming Lawyer-Client Collaboration and Creating Lasting Change Through LawWithoutWalls in M. Hartung, M.M. Bues and G. Halbleib (eds), *Legal Tech: How Technology is Changing the Legal World, A Practitioner’s Guide* (C.H. Beck, 2018) 207-212.

The Lawyer Skills Delta represents a new concept based on the most relevant skills that a future lawyer needs to possess to provide full-service-client-service, stratified into three levels.²²¹

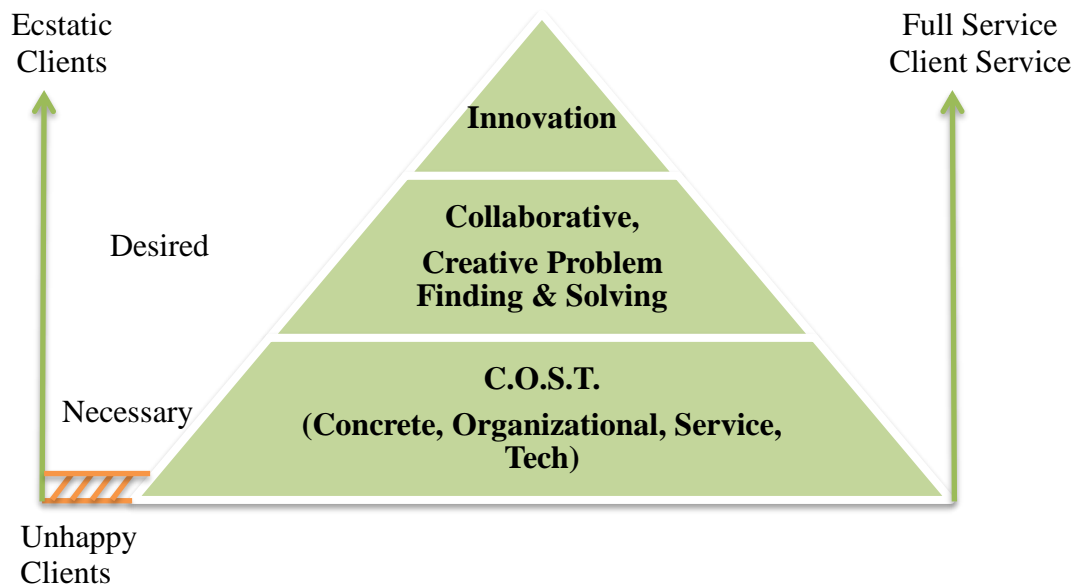


Figure 15: The Lawyer Skills Delta²²²

At the bottom of the pyramid are concrete, organisational, service-oriented, and technology-related skills (C.O.S.T. Skills), related to cost, in terms of time and money.²²³ The future lawyer will have to master these skills to be cost-efficient and time-effective.

The middle level contains skills related to the legal practice: collaborative, creative problem finding and problem-solving. Because the clients start to care more about the way that the solution is delivered, the future lawyer should be able to apply creative and collaborative problem finders and solvers, by showing empathy and cultural competency.²²⁴

At the top level of the pyramid are the skills related to innovation and entrepreneurship.

²²¹ *ibid.*

²²² Adapted from DeStefano (n 220).

²²³ DeStefano (n 220) 207-212.

²²⁴ *ibid.*

The future lawyer should be able to adopt a new mindset, based on innovation and creativity, opened to technology development and ready to adapt to the new transformations.²²⁵

4.4. The Challenge of Adaptation and Keeping Up

As mentioned in the previous sub-chapters, the transformation of law firms requires to comply with the needs and expectations of clients as shown in Figure 13.

For this accomplishment, legal businesses will have to reconfigure the employing, compensation and training system. But the biggest challenge for the law firms will be the adaptation to a digitized legal landscape.

Legal Tech tools are used in the legal industry to overcome the challenges that system has encounter and to offer sustainable solutions for law firms.

- Inflexible working

The legal profession is relying on accessing and analysing a massive amount of data and documents, which will limit the lawyer's flexibility to work.

The use of Legal Technology is bringing in the system 'remote working'.²²⁶ Due to the cloud-based file management system, lawyers can perform their tasks from anywhere.

- Data vulnerabilities

The legal system consists of a large amount of clients data, making it the aim of cyber attackers. To overcome this issue, some law firms have enforced, in their departments, cybersecurity teams, able to design solutions to tighten security.²²⁷

- Time-consuming process and research

Lawyers are spending a lot of time on the administrative and the routine low-skilled tasks. The implementation of process automation in the legal sector is a solution for time efficiency.²²⁸

²²⁵ *ibid.*

²²⁶ Melissa Taylor, 'How Legal Tech is Overcoming Challenges in the Law Industry' (*Luminous PR* 20 February 2018) <<https://luminouspr.com/legal-tech-overcoming-challenges-law-industry/>> accessed 21 May 2019.

²²⁷ *ibid.*

²²⁸ *ibid.*

By using technology to automate time-consuming daily tasks, the lawyers can focus more on creating value for their clients. However, these solutions are not yet flawless and have raised some legal matters.

The new developments of software and programs are bringing some concerns regarding the use of Artificial Intelligence, such as:

- Transparency.

Transparency is known as a fundamental principle of justice, and it is the demand to justify the reason for a decision. It applies across all the legal fields, both in public institutions and within corporations.

In the application of technology, this principle is challenged, as more innovative algorithms are designed, their inner workings become more complex and hard to make sense.²²⁹

Besides this, most of the software programs are self-organising, without having external guidance, which raises other issues around governance and liability, societal impact, and human rights.²³⁰

- Ethics

When it comes to ethics in the Artificial Intelligence field, the difficulty is that the software can teach itself most of the decision-making rules and the lawyers will not know how or why the program provides individual conclusions.

As mentioned in the previous chapter, a new challenge for lawyers is the learning of a minimum base about technology to fulfil the ethical standards.

- Liability

In all legal fields, the liability is an established principle, but in case of damages produced by software tools, assigning responsibility is a challenge. Artificial Intelligence systems are reliant of the data they were trained on, and in case of interaction with other networks, the concept of liability becomes difficult to be applied.²³¹

²²⁹ The Law Society, 'Artificial Intelligence and the Legal Professions' (*Academia* 2017) <https://www.academia.edu/36920594/Artificial_Intelligence_and_the_Legal_Profession> accessed 21 May 2019.

²³⁰ *ibid.*

²³¹ *ibid.*

In 2016, in a European Parliament resolution, an European Union committee concern by this liability issue argued that ‘traditional rules will not suffice’ because it is not possible to identify the responsible for the damages.²³²

Also, in the same resolution, the committee says that Artificial Intelligence systems are too vulnerable to hacking.²³³

The issue of liability around artificial intelligence solutions can increase the need for legal advice, but for that, the lawyers should be prepared to implement and monitor these technologies.

- Electronic personhood

In the same European Parliament resolution, The European Union committee also referred to the possibility of Artificial Intelligence and Robots to deserve ‘personhood’.²³⁴ They decided that rights and responsibilities have to be defined, similar to corporate personhood.

The committee added that this not means that robots will have rights, but a legal fiction will facilitate the application of current laws, and this can lead to a massive disruption to the traditional social and economic norms.²³⁵

As this paper showed, technology can lead to the democratisation of legal services, and even though Legal Tech is the solution for some flaws in the legal market, it also brings some challenges in the system.

Nowadays, Legal Tech puts pressure on the traditional law firms business model regarding the billable hour system, and transparency in both pricing and customer reviews.

Also, these developments, through the use of programs and robots, are taking the lawyer’s monopoly on legal knowledge and legal advice delivery, by decreasing the time spent on a case.

On the other hand, the demand of legal professionals on the market is continuously increasing, because no matter how skilled programs and software become, the use of Artificial Intelligence will not replace the need for legal experts.

²³² European Parliament Resolution of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics [2017] (2015/2103(INL)).

²³³ *ibid.*

²³⁴ *ibid.*

²³⁵ *ibid.*

Likewise, access to legal services is more accessible due to the development of platforms and fixed-price schemes, which can lead to more demand in the market.

CONCLUSION

The legal profession is one of the oldest occupations in the world, having a history for almost two thousand years, and well-established traditions and peculiarities.

During the years, the legal advice has been given by lawyers working in law firms, with a clear career path, having the opportunity to be promoted from junior associates to partners.

In the firm, the hierarchy was clear, based on pyramidal structure: lawyers, divided into partners and associates, were responsible for delivering legal services, while the other legal professionals, such as paralegals, had the duty to help the lawyer in their daily tasks. Based on this structure, the lawyers were in the top and middle of the pyramid, putting their expertise, skills, and experience in each case, aiming for a favourable decision.

Nowadays, the law industry is becoming more challenging. The information is becoming more accurate and precise, and the market is facing an increased amount of data to be analysed.

Today's clients are demanding high-quality legal services and lower prices for legal advice delivery. Also, they expect more collaboration between law firms and external parties, and implementation of technological tools, in order to provide certain information, faster, and in a transparent way.

As the author mentioned in this paper, the development of legal technology software and programs has the potential to achieve the clients' demands, ensuring cost and time efficiency and decision-making effectiveness. But, to implement all these benefits, law firms have to rethink their business model, including their field of practice and billable system, and to embrace the possibility to outsource time-consuming daily tasks.

For a system that suffers from slow change, but showing a desperate need for innovation, the implementation of technology requires changes in the traditional mindset of the legal profession, with respect to how a law firm should work, not only based on the power of lawyers, but also the cooperation between them and independent professionals.

Equally noticeable is some legal experts' willingness to adapt to a new system and to explore new perspectives, taking advantage of the possibility to determine the future of

the legal system and legal professions, by creating the modern law firm able to face the new challenges that technology will bring in the future.

On the contrary, if the law firms business model will not be reinvented and altered to the new technological conditions, it is likely the firm will suffer a decline or will have to compete, unprepared, with other firms better adapted to the new digital landscape.

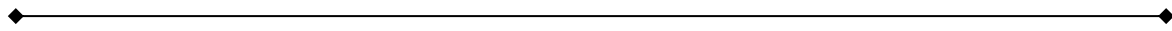
The future law firms have to see the lawyers as specialists, with newly developed skills, competent to fill in the gaps that technology is not able to address. This change requires the creation of a new career path with a different type of compensation system and an innovative pricing model.

Of course, no one can predict what the future will be like, but the existing legal system should be open to finding the best solutions to implement all the changes that technology has brought so far, and will bring in the next years.

ABBREVIATIONS

BDO	Binder Dijker Otte
C.O.S.T	Concrete, Organizational, Service-oriented, and Technology-related skills
FRA	The European Union Agency for Fundamental Rights
IBM	International Business Machines Corporation
IRPAAI	The Institute of Robotic Process Automation and Artificial Intelligence
IT	Information Technology
MV	Machine Vision
OECD	Organisation for Economic Co-operation and Development
RPA	Robotic Process Automation
S.M.A.R.T.	Specific, Measurable, Attainable, Relevant and Time-bound goals.

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