

Opportunities and Challenges in the Legal Tech Services in the Italian and European Framework

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Abstract. After a succinct analysis of the legal tech sector, the aim of this Chapter is to highlight the main critical aspects as well as the evident opportunities which could arise from the introduction of these new tools throughout the legal market. The main critical aspects relate to the fairness and reliability of the algorithm, while there are opportunities to create an efficient, transparent and speedy process for receiving legal services which could translate into significant savings for public funds. The legal profession is at a critical juncture. Legal tech services, primarily involving the use of artificial intelligence, must not be overestimated, but neither should they be eschewed. The best policies must be introduced gradually because Italy and Europe are far behind the United States which has already gained considerable experience.

Keywords. legal tech, artificial intelligence, document automation, machine learning

1. Introduction

Over the last few years, the global legal tech market has grown exponentially, with a total of 3.81 billion US dollars invested between 2012 and 2018. The growth dynamics of investments in legal tech companies used to be low as investors were eyeing a fairly young business area and refrained from engaging in large transactions. In 2016, 224 million US dollars was invested in the industry; in 2017, 233 million US dollars was invested. 2018 saw explosive growth and investments became greater than ever, amounting to 1,663 billion US dollars [1]. However, there is a significant imbalance between the amount invested in the United States and the rest of the world: more than 3 billion US dollars in the United States, less than 200 million in Europe and less than 100 million in Canada. Interestingly, investment in Israel amounted to 12 million US dollars [2].

In Italy, legal tech is virtually non-existent with just a few companies included in the register of innovative start-ups at the Chamber of Commerce, whereas the total number at a global level is around 2,000. In any case, it is self-evident that the European market has not yet appreciated the potential for these services, unlike the United States where the common law system and the legal sector's enormous potential have fuelled a much more rapid increase.

Companies operating in the legal tech market offer different services to companies and law firms. With its CodeX¹ project, Stanford University in California has sought to divide companies into nine categories: 1. Marketplace; 2. Document Automation; 3. Practice Management; 4. Legal Research; 5. Legal Education; 6. Online Dispute Resolution; 7. E-Discovery; 8. Analytics; 9. Compliance. Currently the bulk of these companies provide Document Automation, Marketplace and Practice Management services but there is also significant growth in companies offering Compliance, Analytics and Legal Research services.

The various legal tech start-ups that fall into these nine categories must and will have to deal with the following 3 technologies that will inevitably change the legal sector.

First of all, the development of artificial intelligence has allowed some companies to promote software that can ‘understand’ a legal document. It is obvious that the level of understanding for now is limited to some very basic cognitive patterns which, however, for some sectors have already become essential. From this point of view, due diligence can be greatly helped by this software and some Italian law firms are already using software made in the United States to categorize and review a significant number of legal documents [3]. The same methodology can also be applied to the field of legal research with absolutely appreciable results [4]. The problem, as always in the field of artificial intelligence, is the quality and availability of the data to be analyzed. In Italy, for example, judgements are not always correctly digitalized in an interoperable format and the personal data present in these documents has not always been correctly anonymised. This makes it impossible to carry out an effective analysis in a legally correct manner that would allow the development of the predictive software already present in other jurisdictions.

Secondly, the use of blockchain in the legal sector will have and, in part, has already had a disruptive effect, even if the repercussions are not yet clear. However, the use of smart contract blockchain in complex markets such as international trade can ensure greater transparency, reduced costs and the guarantee of resolving any disputes in a much shorter time frame. The legal sector should work in the next years to employ and deploy smart contracts that could automate many functions. There is no doubt in fact that blockchain and smart contract are able to change our societal system and structures.

Thirdly, an extremely important and revolutionary aspect is legal design. Legal design has been defined as a human-centred approach to solving legal problems and legal innovation. This approach combines three different professional figures: the competence of the lawyer (legal), the mindset and methodologies of the designer (design) and, finally, the technological innovation of the computer engineer (tech) [5]. These three different figures have the possibility to create legal systems, services and processes, that are more usable, understandable and attractive. The role of legal design in the field of legal tech is fundamental, as the software has to standardize, as far as possible, particularly complex legal processes. To obtain this result, it’s important to consider an approach which is geared towards clarity and transparency.

Given this succinct analysis of the related market and based on the practical experience gained by the author who recently set up a legal tech company², the aim of this

¹CodeX, Stanford Center for Legal Informatics, <https://law.stanford.edu/codex-the-stanford-center-for-legal-informatics>.

²The company is called LT42 S.r.l.

Chapter is to highlight the main critical aspects as well as the evident opportunities which could arise from the introduction of these new services throughout the legal sector.

2. The Main Critical Aspects of Legal Tech Services

2.1. Fairness and Transparency of the Algorithm

The first critical element stems from the risk that the algorithm may give false positives. One of the most dramatic examples is shown by the COMPAS system (Correctional Offender Management Profiling for Alternative Sanctions). Nationwide, many jurisdictions use statistical algorithms to assess the likelihood a defendant will fail to appear at trial or commit a future violent crime [6]. ProPublica analyzed 10,000 white and black defendants assigned scores in Broward County, Florida and they found that black defendants were far more likely than white defendants to be incorrectly judged to be at a higher risk of recidivism, while white defendants were more likely than black defendants to be incorrectly flagged as low risk [7]. More specifically: black defendants who did not recidivate over a two-year period were nearly twice as likely to be misclassified as higher risk compared to their white counterparts (45% vs. 23%). At the same time, white defendants were often predicted to be less risky than they were. Propublica analysis found that white defendants who re-offended within the next two years were mistakenly labeled low risk almost twice as often as black re-offenders (48% vs. 28%).

The false positive risk can also be found in other areas. St. George's Hospital in the UK developed an algorithm to sort medical school applicants. The algorithm was trained to mimic past admissions decisions made by humans [8]. But past decisions were biased against women and minorities. Whilst in the first example, the same rules determining the algorithm were by their very nature discriminatory, in the second case, the type of error committed is even more concerning as the algorithm codified discrimination.

The experiences described above concern borderline cases, but it is evident that whenever an algorithmic decision is applied to a legal process, problems can arise that impact the human rights and fundamental freedoms.

In this sense the European Regulation 679/16 (GDPR)³ has clearly provided that a decision based solely on automated processing of personal data is admissible only if:

- (a) it is necessary for entering into, or performance of, a contract between the data subject and a data controller;
- (b) it is authorised by Union or Member State law to which the controller is subject and which also lays down suitable measures to safeguard the data subject's rights and freedoms and legitimate interests; or
- (c) it is based on the data subject's explicit consent.

This safeguard offered by the GDPR becomes an obstacle which is not easily manageable for those who promote the development of systems capable of making autonomous decisions.

The real challenge of the future is the transparency and fairness of the algorithm. However, when we think about the various tools offered on the market, the trend seems to be going in the opposite direction to that envisaged by the GDPR.

³Art. 22, EU Regulation 679/16 (Automated individual decision-making, including profiling).

2.2. Mida Paradox

The second critical aspect can be summarised as the ‘Mida Paradox’ according to which “Machines take the law literally... Humans don’t” [9]. Within such a wide, complex panorama of information, it is quite possible that there are legal content losses in algorithmic translations of regulations. Any interpretation of the law presupposes not only knowledge of implicit information which is not contained within a document to be analyzed by artificial intelligence, but also the ability to perform assessments on the basis of a level of logical abstraction which it is difficult for a machine to attain. For example, any decision regarding a criminal defendant’s mens rea on the basis of whether or not he wishes to commit a particular type of offence entails an extremely complex decision-making process which is very hard to translate into an algorithm. This paradox is increasingly fading. Artificial intelligence systems are undoubtedly developing mechanisms to avoid discriminatory situations and/or in violation of the GDPR, but there is still a long way to go.

In addition, it is important to consider that by inserting a layer of inscrutable, unintuitive, and statistically-derived code in between a human decision-maker and the consequences of that decision, AI disrupts our typical understanding of responsibility for choices gone wrong.

AI introduces four concerns in terms of responsibility in the legal sector: 1) unforeseeability of specific errors that AI will make; 2) capacity limitations when humans interact with AI; 3) introducing AI-specific software vulnerabilities into decisions not previously mediated by software; and 4) distributional concerns based on AI’s statistical nature and potential for bias. On the basis of these concerns described in the interesting paper written by Andrew Selbst, we could use the provocative term ‘artificial negligence’ to describe the risks of a decision taken by an automated process [10].

2.3. Digital Divide

The first two critical aspects illustrate just how important it is to invest in the legal tech sector, not only in financial terms but also in skills. The challenges faced by the Italian university system are the following: language barriers, lack of interdisciplinary approach, lack of legal practice and resistance to technological innovation in teaching methodology. Legal informatics courses should be significantly changed because they have never been more important as in this specific period to understand the future of law.

Starting from the assumption that in many Italian universities this course is not even compulsory, there are two alternative solutions: on the one hand, to add a specific course in legal tech, or, on the other hand, to significantly upgrade the current course in legal informatics. In addition to the traditional subjects of the legal informatics program (e.g. telematic process, digital signature) the following subjects should be taught: Big Data and machine learning, regulatory and ethical impacts of AI, coding for lawyers, smart-contracts and blockchain, computational law, e-discovery and legal design.

At a European level, the University of Helsinki offers a course in legal design and has created the Legal Tech Lab⁴; the University of Swansea offers an LLM in legal tech⁵,

⁴<http://www.legaltechlab.fi>.

⁵http://www.swansea.ac.uk/postgraduate/taught/law/llmlegaltech/?utm_source=Artificial%20Lawyer&utm_medium=Legal%20Tech%20Education%20page.

while the University of Manchester offers a course entitled ‘Legal Tech and Access to Justice’⁶. At a national level, there are still no ad hoc university courses on legal tech, but there are important university initiatives that could lead to more structured courses⁷.

If we don’t make these changes promptly, the risk would be twofold: on the one hand, to create legal tech services based on the illusion of the Mechanical Turk⁸, whilst in reality legal work is still carried out by humans, on the other hand, to offer poor quality automated legal services which are not capable of meeting client needs.

3. The Main Opportunities Offered by Legal Tech Services

3.1. Access to Information

The computational capacity achieved in managing Big Data and machine learning systems makes it possible to provide the legal world with rafts of information which would have been inconceivable just a few years ago. Consider for example recidivism statistics or semantic analyses which can be run on judgements. Without wishing to enter the hazardous world of predictive justice [11], these types of instruments allow lawyers or judges to acquire a wealth of information which enables them respectively to defend their clients’ interests through in-depth legal research, and to hand down fair, correct decisions.

To give some concrete examples, Hague Institute for Innovation of Laws (HiiL) organized a competition entitled ‘Innovating Justice Challenge’ in 2018 which was attended by 33 African startups. ‘Gavel’, a Nigerian civic tech startup, aims to improve the pace of justice delivery through tech. Gavel does this by tracking criminal cases, and police brutality complaints. In addition, users are also connected to free legal aid lawyers through the platform⁹. Btrack Global is a Kenya startup that has developed tracking devices that enable motorcycle owners to easily track their motorcycles on their mobile phones in the event of theft¹⁰.

These initiatives demonstrate that legal tech and access to information have a major social impact not only in United States or Europe, but also in countries with lower rates of technological skills. The solutions proposed by the African startups did not focus on the use of AI, but on the resolution of very concrete problems through web-based applications which are not particularly complex, but definitely very effective.

3.2. Greater Efficiency in Legal Services

It is undeniable that legal tech services can render a country’s legal system more efficient, providing greater transparency and rapidity in the decision-making process. These

⁶<https://www.law.manchester.ac.uk/research/themes/law-money-technology/law-technology-initiative-2/>.

⁷In addition to the initiative *Law Via the Internet* of the Institute of Theory and Techniques of Legal Information (ITTIG), the initiative *Technological Innovation and Law (TIL 2019)* and the excellent work done in the last years by Profs Palmirani, Sartor and Ziccardi deserve to be mentioned.

⁸The Mechanical Turk was a fake chess-playing machine constructed in the late 18th century. It was a mechanical illusion that allowed a human chess master hiding inside to operate the machine.

⁹<http://www.gavel.ng>.

¹⁰<https://leap-2.com/en/projects/btrack-global>.

services are however seen by traditional law firms as competitors. Nevertheless, legal tech services should not be viewed as competing with law firms, but instead should be conceived of as the future of the legal profession. It is beyond doubt that the digital revolution has changed many market sectors (consider for example the tourism or transport sectors). Despite this, the legal profession is still closely tied to a fiduciary relationship which cannot be affected by artificial intelligence, provided that there is willingness to accept that certain legal activities which are not particularly complex (for example a lease agreement for a building) must inevitably be automated. Once this type of approach has been accepted, the legal profession of the future will be essentially based on a lawyer's strategic ability to choose the best from amongst the various solutions put forward by artificial intelligence [12].

However, it is clear that the lawyer of the future will necessarily need to use these instruments with a level of competence that is not yet present at a national level. Access to information has always been a fundamental skill of the legal profession. The real challenge now will be to gain access to (profiled) information more quickly than one's competitors.

3.3. *Saving Public Funds*

One direct consequence of greater efficiency in a State's legal system is the opportunity to cut public expenditure. The introduction of the On-line Civil Trial system in Italy has enabled the state to achieve savings in the order of 178 million Euro over the last 3 years¹¹ and this result is only the start of the digitalisation process which will have beneficial effects on the entire judicial system.

One of the most frequent concerns of lawyers regarding the growth of legal tech is certainly to lower legal costs. However, this concern may turn into an opportunity: the lowering of legal fees could allow access to this type of service to a very different number of subjects (small enterprises, private citizens, non-profit associations, etc.) that currently cannot afford it.

Another concern is whether artificial intelligence will replace some legal services and consequently lead to job losses. A US study conducted in 2018 compared 20 well-respected corporate lawyers against an AI in an error-spotting test across a suite of non-disclosure agreements (NDAs). Responses were measured by time and accuracy. The human lawyers achieved an average accuracy of 85%, in an average time of 92 minutes. By comparison, the AI's success rate was measured at 92% in just 26 seconds¹². The experiments carried out so far do not seem reassuring, but it's important to consider that drawing up an NDA or carrying out due diligence is an activity which does not obviate the need for subsequent legal advice which may be carried out with more time and resources.

¹¹Report by the President Andrea Mascherin at the ceremony to inaugurate the National Forensic Council's 2018 judicial year, February 2018.

¹²Study conducted by LawGeek, one of the most famous legal tech companies in the United Kingdom, <https://www.lawgeex.com/resources/AIvsLawyer/>.

4. The Italian Scenario

After describing the opportunities and challenges faced by the legal-tech sector, an overview of the national scenario is appropriate, with a specific focus on the development of the most relevant technologies adopted in Italy.

As already mentioned above, Italy is lagging behind the rest of Europe, not to mention the United States. One of the main reasons is certainly the high number of lawyers practicing in Italy: in January 2018 there were 242,000 lawyers legally resident in Italy. On that date there were about 4 lawyers per 1,000 inhabitants. The income of a lawyer today is very different from 10 years ago, falling from an average annual income of 49,000 euros to 38,437 euros today¹³.

The steady decrease in income prevents lawyers from investing in the technology sector. In addition, in Italy we prefer 'boutique firms', which in some cases, especially in the provinces, means that law firms are composed of a single lawyer or at most 2 or 3 lawyers who have not even formed a professional association.

The reduced spending capacity prevents lawyers from investing in human resources by hiring young lawyers who are often more familiar with technology. Furthermore, another is a widespread prejudice against the use of new technologies resulting from a real absence of a generational change as the increase in the retirement age and the reduction in income have deterred many lawyers from retiring.

4.1. Artificial Intelligence Tools

In this complex scenario, artificial intelligence tools are a 'luxury' that only a few law firms can afford, also because today there are few legal tech solutions based on artificial intelligence created specifically for the Italian market. Consequently, the tools that are sold globally can only be purchased by law firms that have an adequate budget and whose clients are large multinationals which can appreciate the type of output that these tools are able to achieve (especially in the field of due diligence).

Even though this type of scenario is certainly not reassuring, it does offer a great opportunity, many International legal tech companies are trying to establish synergies with Italian law firms to adapt their technological solutions to the Italian legal context. This type of activity can be very instructive especially for young lawyers who often find it difficult to find employment in law firms and who may instead have the opportunity to develop professionally in a different context.

Another aspect of fundamental importance for the growth of AI tools in Italy is undoubtedly the lack of availability of data in an interoperable format. From this point of view, it is necessary to consider that machine learning can only work in the presence of a large volume of data.

The adoption of On-line Civil Trials has allowed the creation of a remarkable number of judgments in digital format. Now it is necessary for this volume of data to be used by a machine learning system which can process it with respect for the privacy and fundamental rights of the individual. When this process is completed, there will be a Copernican revolution in the field of legal databases that are no longer able to meet the needs of lawyers. The real risk of this backwardness is that young lawyers find information more

¹³Statistics from 'Cassa Forense Nazionale' (Italian Previdential Institute of Lawyer).

easily on Google than on legal databases with a real risk of then providing incorrect or superficial legal advice.

4.2. Document Automation

If artificial intelligence is a sector where in Italy the legal tech sector has not yet achieved significant results, the document automation sector is starting to produce interesting software which is appreciated by the legal sector.

In recent years, the legal publishing sector has understood how important it is to invest in the IT sector and some compliance tools have been developed with particular reference to privacy after the coming into force of GDPR. The software houses already present in the professional sector (legal, accounting and audit) have certainly implemented investments, creating increasingly efficient tools for practice management, compliance and accounting.

One of the reasons for the success of document automation tools is the growth of software as a service (SaaS), which has allowed the development of tools that can be updated without any effort by the software house. The updating of a legal tech software poses two levels of complexity: the first, common to all software, is platform updating and bug fixing. The second is legal updating: one of the many challenges that the sector will have to face in the near future will certainly be the continuous changes to the legal framework. In Italy, an average of 500 laws are passed every year, for a total of 110,000 laws issued and currently in force. Every single change to an article of one of the 110,000 laws could dramatically change the functioning of legal-tech software. For this reason, the possibility of a remote software update makes it possible to provide a service which is always in line with the regulations in force. A stand-alone software, on the other hand, would require the user to install the new update with all the well-known compatibility problems if the operating system were to be changed.

The advantage of software as a service, however, is counterbalanced by the need for more attention to compliance with the GDPR, as Client data is stored in the cloud.

A further advantage of document automation software is the simplicity of implementation, because it does not involve a complex development activity as in the case of artificial intelligence. There are 4 steps to creating a software of this type: (i) preparation of the legal output (document, contract, report) that the user must be able to receive; (ii) creation of a check-list of questions in which the objective is to ask the user in a simple and clear way for the information necessary for the creation of the final document; (iii) preparation of a flow chart if it is necessary to insert a variable in the logical path to be followed by the user when providing the requested information; (iv) preparation of an interactive guide in order to facilitate the user in filling out the check-list.

Such software can be designed to facilitate the professional activity of a lawyer or can directly address the final Client (whether a company or a natural person) in order to allow the production of a document that can be used by the latter. The results of such a strategic choice are not trivial: in the first case, the software has the sole purpose of making the lawyer's work more efficient. In the second case, however, such tools could progressively take away the lawyer's professional activity. For the reasons already mentioned above in the AI field, it is very unlikely that document automation software can replace a lawyer, but it is legitimate to wonder what could happen when a lease or a complaint to the judicial authority can be drawn up through an automated check-list.

In this scenario, there are many questions to ask: what guarantee of legal reliability can a document generated by an automatic tool offer? Will the Judicial Authority be able to accept legal documents (think, for example, of a divorce) produced by an automatic system?

There are many questions, but one fact is certain: the transformation of a legal service into an automatic or semi-automatic process has begun and it is still too early to obtain a final balance of advantages and disadvantages.

5. Conclusions

The legal profession is self-evidently at a critical juncture. Legal tech services, primarily involving the use of artificial intelligence must not be overestimated, but neither should they be eschewed. The best policies must be introduced gradually because Italy and Europe are far behind the United States which has already gained considerable experience. Therefore, the essential first step in order to develop the legal profession of the future is - where appropriate - to transform the legal service into an organised process. Once this transformation has occurred, it will be possible to appreciate which aspects can be automated and which areas, out of necessity, must remain within the remit of professional lawyers.

A young US researcher recently wrote that “Robots Will Help Lawyers, Much Like Autopilot Helps Pilots. During the 1940s many pilots were afraid that they’d lose their jobs due to the rise of autopilot technology. That didn’t happen though, as even 80 years later we still have pilots operating the airplanes even while autopilot helps them immensely” [13].

The future of our profession will not be very different: I imagine a scenario where a lawyer will have the task of monitoring the activity carried out by a computer, choosing from amongst the various options that the software will develop, the simplest, strategic and most convenient solution for the Client.

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