

## THE DIGITAL TRANSFORMATION OF LEGAL INDUSTRY: MANAGEMENT CHALLENGES AND TECHNOLOGICAL OPPORTUNITIES

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### Abstract

The impact of technology on individual economic sectors has also reached the service industry. This article offers a discussion on the influence of information technologies (IT) and changes taking place as a result of the legal services market digital transformation. Thanks to the results of the qualitative study (questionnaire survey a technique of data collection) involving 451 respondents (attorneys and legal counsels) in Poland, it was possible to analyse *t* lawyers' attitudes towards particular IT tools and systems as well as the changes taking place in the field of legal services, the business models applied thus far and innovation factors.

The gained knowledge shows the current level of technology use in the daily work of lawyers and their attitude towards changes induced by omnipresent digitalization. The results offer vast opportunities for using the knowledge so acquired at academic and business levels, especially by providers of IT solutions for legal professionals.

### Keywords

Legal Technology, Legal Market, Poland, Lawyer, Professional Service

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### I. Introduction

The common use of IT tools and the digital transformation have changed the face of individual sectors of the economy, including services (Degryse, 2016), which – now delivered (partly or entirely) online – are an important object of research, as manifested by a wealth of academic and grey literature on the subject (Henriette, Feki, Boughzala, 2015; Leischnig, Ivens, Wöflf, Hein, 2017).

The studies conducted in that field to date have focused mainly on the theoretical aspects of the digital transformation (Wittkop, Zulauf, Wagner, 2018), analysis of individual sectors (Zhou, 2013), markets (Walwei, 2016), organizations (Gastaldi, Corso, 2012), or their constituent topics such as business models (Berman, 2012; Bouwman, Nikou,

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Molina-Castillo, de Reuver, 2018; Rachinger, Rauter, Müller, Vorraber, Schirgi, 2019), or operational processes (Isaksson, Harjunkoski, Sand, 2018).

This article belongs to the field of examining the digital transformation within a selected industry and is an elaboration of the results of a study on the level of IT use and changes taking place exclusively on the legal services market in Poland<sup>2</sup>. No academic studies have been conducted to date that would facilitate the evaluation of both the level of use of information technologies in lawyers' daily work on a given market, their impact, and utility on the one hand and exploration of new phenomena triggered by the common digitalization of the services in question on the other.

The subject discussed and the research area explored have conditioned the structure of the text. In Section II, I discuss the legal services market in Poland and its characteristics using statistical data. In Section III, I focus on the results of a systematic review of industry literature concerning the digitalization of legal services and the impact of technology on that industry in Poland. The following chapter contains an explanation of the research methods adopted as well as the modality and course of the studies conducted. I discuss the questionnaire structure, respondent profiles, and the methodology of quantitative and qualitative analyses. In Section V and VI, I describe in detail the results of the survey providing an in-depth analysis, also in the market context. The last chapter focuses on positing key conclusions and pointing out to directions of future studies planned.

The main value of the article is the presentation of the results of exceptional research carried out on the Polish market, allowing us to know the starting point. Repetition of the research will allow us to notice the trends taking place in such an important approach of lawyers to the use of information systems in their daily work. Moreover, the content of the survey itself may constitute a source of inspiration and motivation for subsequent researchers to study national markets from the same angle.

## **II. The Polish Legal Services Market**

For this article, I have used the scope of the domestic legal services market in the subjective meaning, covering entities authorized to provide legal services in Poland<sup>3</sup>.

According to European and Polish legislation, a regulated profession is a group of professional activities, the pursuit of which is subject to meeting qualification requirements and other conditions stemming from legislative, executive, or administrative provisions<sup>4</sup>. Among the professions providing legal services, the scope of the notion of regulated professions cover such legal ones as the attorney and legal counsel, and only partly patent agent and tax adviser<sup>5</sup>. Although under that terminological regime legal trainees preparing

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<sup>2</sup> Throughout the article, the terms 'information technologies' and 'IT' will be used interchangeably.

<sup>3</sup> As the legal services market is a field of the provision of trans-border services, services in Poland can be offered also by foreign providers without having to be domiciled or established in the country.

<sup>4</sup> Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications (OJ L.2005.255.22 as amended) and the Act of 22 December 2015 on the principles of the recognition of professional qualifications acquired in the Member States of the European Union (JoL of 2016, item 65, as amended).

<sup>5</sup> The professions of a patent agent and a tax adviser pursue their activities covered by the scope of the notions

for the profession do not pursue a legal profession, they can provide legal services in line with general principles stemming from economic activity and contractual freedom and as a result, have a major impact on the picture of the market in question<sup>6</sup>. Importantly, the professions mentioned above (attorneys, legal counsels, and legal trainees) are statutorily obliged to belong to a professional self-governing body<sup>7</sup>.

Legal services constitute an open catalogue of activities performed in pursuit of specific professions. Their scope covers the provision of both actual and legal activities, for instance representing clients' interests in and out of court, legal advisory services, or drafting legal opinions<sup>8</sup>.

At the time of the 1989 systemic transformation in Poland, the professions of the attorney and legal counsel authorized to appear before common courts were pursued by approximately 4,000 and 14,000 persons, respectively (Gray, Hanson, Heller, Ianachkov, 1992; Janson, Wrycza, 1999)<sup>9</sup>. In 2019, there were 18,600 attorneys and 35,200 professionally active legal counsels (Mrowczynski, 2016)<sup>10</sup>. Consequently, one can conclude that over the period 1989–2019 the number of attorneys and legal counsels in Poland increased by a factor of three.

According to the 2018 European Commission report 'European judicial systems. Efficiency and quality of justice. 2018 Edition (2016 data)', the number of lawyers (legal counsels and attorneys) in Poland per 100,000 inhabitants in 2010 was 101, in 2012 – 114, in 2014 – 137, and in 2016 – 126<sup>11</sup>. The growing trend in legal services supply in Poland is due to systemic solutions in the form of a range of reforms of legal training entrance examinations and other paths leading to the acquisition of rights to pursue subjectively qualified legal services as part of public trust professions, as well as Constitutional Court

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discussed here exclusively within specialized fields – industrial property and taxation matters. The above solution concerns also notaries public, debt collectors, judges, public prosecutors and legal counsels of the General Counsel to the Republic of Poland, yet the relevant regulations exclude from the scope of the notion of regulated professions ones pursued for non-economic (non-commercial) purposes as well as ones consisting in the exercise of public authority.

<sup>6</sup> Constitutional Court ruling of 12 February 2013, K 6/12, ZU OTK 2013/2A/16.

<sup>7</sup> Membership of a professional self-governing body is obligatory for professionals working as attorneys, legal counsels, notaries public and debt collectors. The systemic principles of the functioning of self-governing bodies of legal professions stem from Article 1(1) of the Polish Constitution. See CC ruling of 18 February 2004, P 21/02, ZU OTK 2004/2A/9, CC ruling of 18 October 2010, K 1/09, ZU OTK 2010/8/76 and CC ruling of 12 February 2013, K 6/12, ZU OTK 2013/2A/16.

<sup>8</sup> The Polish Classification of Goods and Services uses the category 'legal services' rather than 'lawyer's services', yet for the purposes of this article I treat both notions as synonymous.

<sup>9</sup> The number of persons entitled to work as attorneys and legal counsels includes active professionals and ones not performing their profession but holding relevant qualifications. Data from the report 'Strategie konkurencyjnego otoczenia kancelarii radców prawnych. Jak rozwijać swoje praktyki w konkurencyjnym otoczeniu?' [Competitive strategies of individual law firms of legal counsels. How to develop your legal practice in a competitive environment?] written by a team headed by Prof. Ryszard Sowiński of the WSB University on the commission and in cooperation with the National Bar Council of Attorneys-at-Law. Link: <http://doc.kirp.pl/index.php/s/zX9RxC2GLXC9Lfr#pdfviewer> [accessed on 20 April 2020].

<sup>10</sup> On the basis of data from the Supreme Bar Council and the National Bar Council of Attorneys-at-Law.

<sup>11</sup> European judicial systems. Efficiency and quality of justice. 2018 Edition (2016 data): <https://rm.coe.int/rapport-avec-couv-18-09-2018-en/16808def9c> [accessed on 21 April 2020].

case law conducive to economic freedom as a natural basis of legal service provision<sup>12</sup>. As a result, the Polish legal services market has been divided into the regulated part related to the pursuit of specific professions and a non-regulated one related to the provision of legal services exclusively based on the principle of economic and contractual freedom (Kühn, 2011).

An important causal factor determining the contemporary shape of the legal services market in Poland is modern IT technologies, which have enforced the digital transformation. Their widespread use has led to changes in the traditional model of legal service provision based on individualized features of the service provider and their work, thus acquiring characteristics of commoditization. Commonly used systems for project, process, or HR management have irreversibly changed the business models at law firms and legal departments, as the survey described below confirms.

### III. Material and Methods

Qualitative methods allow for an in-depth examination of a problem defined by the researcher, thus contributing to the identification and analysis of its causes. They facilitate multi-layer content analysis not to be confined within quantifiable categories of quantity (Fowler Jr, 2013)<sup>13</sup>.

In the management sciences, the questionnaire survey is a technique of data collection and it's treated as belonging to the empirical group (Pinsonneault, Kraemer, 1993). The objective is to resolve a research problem focusing on experience, by creating conditions as close to reality as possible that facilitate the capturing of the subject analysed (Forza, 2002). Thanks to the nomothetic approach, generalizations of rules and principles can be made, based on inductive inference, while avoiding the formulation of preliminary hypotheses. The method requires the application of a specified methodological rigour that ensures relatively high correctness, reliability, and objectivity of the inferences.

One manifestation of the application of an appropriate methodological rigour is the selection and a correct presentation of research methodology, which (in general terms) means a set of directives that justifies the selection made and pointing out the scope and modes of actions leading to the resolution of a given research problem. It includes rules as to the ways to proceed, effective given the research objectives (De Leeuw, Hox, Dillman, 2008).

The scope of so understood survey research methodology has covered, first and foremost: (1) selection and presentation of the research methods and tools, (2) specification of the objectives and the subjective and objective as well as temporal and geographical scope of the study, (3) description of the rules for respondent selection and possibilities to

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<sup>12</sup> See Constitutional Court ruling of 26 November 2003, SK 22/02, ZU OTK 2003/9/97, the Act of 20 February 2009 on amending the Act on attorneys, the Act on legal counsels and the Act on notaries public (JoL No. 37, item 288) and the Act of 13 June 2013 on amending Acts regulating the performance of certain professions (JoL of 2013, item 829).

<sup>13</sup> In my study discussed here, I did not measure the Cronbach's alpha test score reliability coefficient as it is measured in cases of a questionnaire examining a variable by means of multiple questions. In my survey, each question examines something different and measures a different aspect, with no correlation between them.

generalize the results obtained, (3) description of the research process, (4) description of the method for presenting of the empirical material collected, (5) description of possible ethical issues and limitations of the research work performed (Sudman, Bradburn, Schwarz, 1997; Groves, Fowler Jr., Couper, Lepkowski, Singer, Tourangeau, 2011).

The nature of the problem subject to examination conditioned the selection of the research method, which was a qualitative study in the form of a survey by questionnaire, involving 451 respondents (attorneys and legal counsels) in Poland. The study was carried out between 25 September 2019 and 25 December 2019, based on a public-access online questionnaire (with 14 closed and semi-open questions), distributed among attorneys and legal counsels of all national and regional bar councils and councils of attorneys-at-law in Poland<sup>14</sup>. In the article, I quote selected answers of the respondents to the semi-open questions and supplement that information with conclusions based on the knowledge acquired thanks to the prior literature review. The selected inductive method of thinking helped build a model answering the research questions posed later.

I decided to promote the survey as widely as possible but only in the community of lawyers, and focus on three activities: a. promotion during domestic legal conferences, b. mailing with a request to disseminate the questionnaire among all regional bar councils and councils of attorneys-at-law in Poland, c. grassroots online activities (e.g. promotion of the questionnaire on legal blogs).

Studying the notion of digitalization within the Polish legal services market, I posed the following research questions correlated with the division described above:

- Q1. Which information technologies are currently used in lawyers' daily work?
- Q2. What is the impact of selected information technologies on lawyers' work?
- Q3. What is the lawyers' opinion on using artificial intelligence (AI) in the provision of selected legal services?
- Q4. Which phenomena (trends) can be seen in the Polish legal services market?
- Q5. How are business models changing in the Polish legal services market?

### **Questionnaire structure**

The key research tool allowing me to obtain responses to the research questions posed above was a survey carried out based on an online questionnaire in Polish<sup>15</sup>.

The survey questionnaire included 14 closed and semi-open questions. It featured verifying questions, ones concerning respondent particulars, and those referring directly to the subject matter studied. A Likert scale was applied as an ordinal scale (Albaum, 1997; Joshi, A., Kale, S., Chandel, S., Pal, D. K. (2015).

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<sup>14</sup> The Polish system currently features 24 regional bar councils and 19 regional councils of attorneys-at-law.

<sup>15</sup> The survey titled 'Wykorzystywanie technologii informatycznych i zmiany zachodzące na rynku usług prawnych w Polsce' [Use of information technologies and changes taking place on the legal services market in Poland] was available at: <https://ankietalegaltech.startquestion.com> [accessed on 24 December 2019].

The survey was divided into three parts:

- I. first (questions 1–3), focusing on the current level of IT use by the Polish respondents, asking them to:
  - a. indicate IT tools used or not used (in the lawyer’s daily work),
  - b. rate the impact of IT used on their daily work,
  - c. give an opinion on AI use in the provision of selected legal services.
- II. second, focusing on changes taking place on the Polish legal services market, asking the respondents to:
  - a. assess selected phenomena occurring on the Polish legal services market,
  - b. give an opinion on the changes taking place on the legal services market (such as outsourcing of legal services, changes to the working time clearance system, or attitude towards the emergence of new specialties in the legal services industry) (questions 4–7).
- III. third, with questions related to the respondents’ demographic and social characteristics, such as gender, age, professional categories, workplace organizational format, enterprise size, a form of employment, and registered office of their employer (questions 8–14).

Due to a vast amount of information obtained in the entire survey, this article concerns exclusively the analysis of its first part.

## **Respondents**

My survey research is based on an online questionnaire for Polish lawyers available between 25 September 2019 and 25 December 2019. In its introduction, I specified the target audience, setting a framework for the cohort to be studied and asked verifying questions and ones related to respondent particulars in part three.

In the following step, I made an appropriate selection of a statistical sample that would best reflect and examine the given population. To indicate the precise framework for the cohort subject to examination, I specified its qualities. A permanent one was the respondent’s declaration of their profession to be a lawyer, which led to the criterion of belonging to the given cohort, specified already in the introduction to the questionnaire. The geographical criterion was defined in the introductory part of the questionnaire, which underlined that the assessment pertained exclusively to the Polish legal services market. Additionally, the questionnaire was available in Polish only, and its content was concerned exclusively with the Polish market. The time criterion was defined by me based the basis of constant monitoring of data increase levels.

The questionnaire was available online over the indicated period of three months (25 September 2019 to 25 December 2019), which led to the determination of the ultimate number of replies at 451, with 1,565 visits on the survey website<sup>16</sup>. The analysis presented below takes into account only fully completed questionnaires. The research sample is

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<sup>16</sup> The average time needed to complete the survey was calculated at 13 minutes and 34 seconds.

not fully representative. The number of professionally active attorneys and legal counsels in Poland was 53,800 in 2019, yet I assumed that the survey research would allow me to discover a significant trend indicator, the basis for further research of the sector in question. Moreover, as compared with studies of the Polish legal services market carried out to date, my research covered the largest number of respondents.

Most of the respondents were men (56.12%), with women accounting for 43.88% (number of replies: 450). The largest group identified themselves as aged 26–35 (38.67%), then 18–25 (23.56%) and 36–45 (23.33%), followed by 7.56% aged 46–55 and 6.89% aged over 55.

The largest responder groups indicated that their workplaces were located in the province of Lesser Poland (56.49%), Greater Poland (12.98%), Mazovia (10.69%), Silesia (6.36%), and Pomerania (6.36%)<sup>17</sup>. These data coincide with the list of the most populous Polish provinces according to 2019 data of the Central Statistical Office, which I assess positively in terms of the reliability of the results<sup>18</sup>.

The largest responder group belonged to the professional category of lawyers, working at a law firm daily (45.90%), as a well as university students of law (23.50%), those not belonging to these categories (13.30%), lawyers working in legal departments of enterprises or other organization/corporate lawyers/legal department heads (10.42%), persons in the course of their legal training (5.54%) and graduate lawyers (persons who have completed legal university studies and received the title of a Master of Law) – 1.33%<sup>19</sup>.

A vast majority of the respondents (68.65%) quoted the law firm as the organizational form of their workplace, followed by a group declaring not to provide legal services or not to work as a lawyer (14.73%). This category includes mainly university students with yet no experience in the profession and is the second-largest among the survey respondents in terms of the profession as they are at the threshold of professional activity (graduation-year students). The third group declared to work in other enterprises, organization or institution – 10.21%, followed by public administration bodies – 3.8% and ‘other’, accounting for 2.61%.

The largest group of respondents declared that they worked at law firms, 59.31% with 1–5 employees, 16.33% at larger units with 6–20 employees. Collectively, micro- and small enterprises, with fewer than 50 staff, accounted for 80.51%.

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<sup>17</sup> Poland is divided into 16 provinces (voivodeships), which are top-level administrative division units and local government units.

<sup>18</sup> Central Statistical Office – Population structure. Link: <https://stat.gov.pl/obszary-tematyczne/ludnosc/ludnosc/ludnosc-stan-i-struktura-oraz-ruch-naturalny-w-przekroju-terytorialnym-w-2018-r-stan-w-dniu-31-xii-6-25.html> [accessed on 4 April 2020].

<sup>19</sup> The survey was carried out exclusively among university students of the fifth and final year of law studies who are obliged to take part in professional internships as provided in the study plan.

In conclusion, the largest respondent group was persons aged 26–35 (approx. 39%), yet there were as many professionally active students as persons aged 36–45 (approx. 23%). As for the workplace size category, around 81% of the respondents declared to work in micro- and small enterprises (up to 50 employees)<sup>20</sup>. In terms of geography, the respondents and their workplaces were based in Poland's most populous provinces.

### **Quantitative and qualitative analysis**

To perform a quantitative analysis, I isolated and examined the data obtained in the survey using SPSS Statistic Software that studies response frequency by cross-tabulations (Aljandali, 2016; Fetro, 2018). Thanks to the method, I acquired information on differences in replies of individual respondent groups<sup>21</sup>.

Additionally, I applied Factor-Analysis (FA) (Hussain, Khan, Al-Aomar, 2016). It is a statistical method for measuring quantitative data reducing many variables to a smaller number of independent key factors. That allowed me to synthesize key data thus minimizing the risk of ignoring variables of high research significance (Moffett, McAdam, Parkinson, 2002; Wang, Ahmed, 2004).

As for the responses to the semi-open questions, I applied a qualitative analysis based on an approach known from the grounded theory using coding allowing for a targeted categorization of a given material to create a conceptual map. I applied the thematic analysis method used to discover patterns (themes) in the responses to open questions (Braun, Clarke, 2006; Braun, Clarke, 2012). Thanks to the selection of the inductive approach, I was able to examine the entire set of data (the respondents' replies to the semi-open questions) and then to find thematic similarities between the extracted codes, without any preliminary theories or assumptions.

First, I isolated the entire set of data for a baseline excel (\*.xls) file. As the survey structure made it possible for the respondents to provide their replies to the semi-open questions, I added a table column marking such questions. Then, to apply the grounded theory-oriented method, I encoded the responses, assigning them to individual categories (themes). In this article, I focus on some selected results of the response analysis (Boyatzis, 1998). The rigour of the methodical TA research was based on the guidelines by Virginia Braun and Victoria Clarke (Braun, Clarke, 2006). Consequently, I divided my research work into the following stages: (1) Familiarizing with the data – a phase of multiple reading of the respondents' replies to the semi-open questions and making preliminary notes on coding, (2) Generating initial codes – a preliminary coding phase, (3) Searching for themes – a phase of categorizing codes into potential themes, (4) Reviewing themes – a phase of analysis of the themes introduced and generation of a thematic map, (5) Defining and naming themes – a phase of re-analysis of the themes and revision of their marking, (6) Producing the report – the final phase of the subsumption of the entire content.

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<sup>20</sup> Pursuant to Article 2 of Annex I to Regulation 364/2004, there exist categories of a small enterprise, which employs fewer than 50 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 10 million, and micro-enterprise, which employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million.

<sup>21</sup> IBM SPSS software: <https://www.ibm.com/analytics/spss-statistics-software> [accessed on: 3 January 2020].



### IV. Results

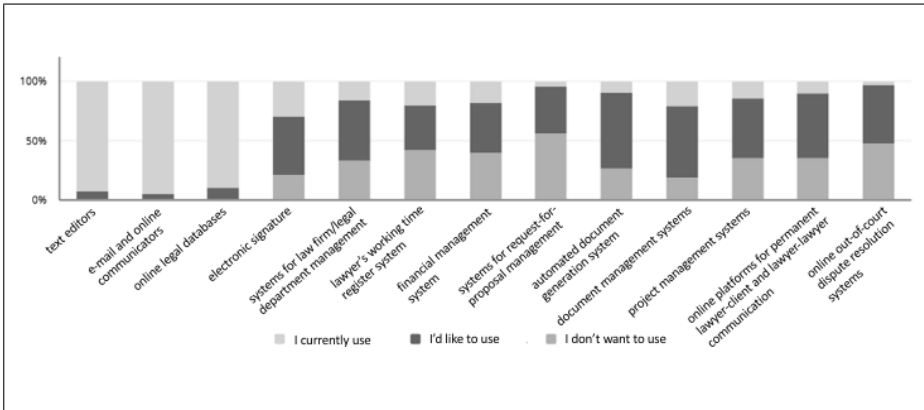
The objective of the survey was to examine two aspects: (I) the current level of IT use by lawyers (in Poland) and (II) changes taking place in the legal services market (in Poland). These two aspects were examined separately, hence the questionnaire structure with questions concerning aspect (I) (questions 1–3) and aspect (II) (questions 4–7). Questions 8–14 concerning respondent particulars.

In this article, I would like to focus on the analysis of the results of the study of the first aspect, i.e. the current level of IT use by lawyers on the Polish market. That is motivated by a vast number of highly interesting conclusions resulting from the (entire) research project.

#### Information technologies in the lawyer’s daily work

In the first question, the respondents were asked to list information technologies that they currently use as well as those that they would or would not like to use in their daily lawyer’s work.

**Chart 1: Structure of the respondents’ replies to the question ‘Which of the information technologies listed below do you currently use/would like to use/don’t want to use in your daily work as a lawyer?’ (number of replies: 448)**



Source: the author’s elaboration

The results let me see the picture of the real level of IT use as well as the respondents’ preferences as regards specific tools needed and redundant (according to them) in the lawyer’s daily work. The most frequently used tools were: e-mail and online communicators (94.17%), text editors (92.17%), and online legal databases (89.04%).

When analysing the weighted average of the value of the responses, I noticed that their closeness to 1 typically correlated with the most frequent ‘I currently use’ attitude on the part of the respondent to a given tool<sup>22</sup>. The closer they were to 2, the more frequently, on

<sup>22</sup> I calculated the average weighted value of the responses as follows: each of the variants of the respondent’s

average, the respondents answered 'I'd like to use' and the closer they were to 3, the more frequently, on average, they said 'I don't want to use'.

Analysing further responses, I was able to specify which tools belonged to those of high interest to the respondents. Such results indicate a strong market need and an important niche to be filled, particularly by the legal technology sector creating IT solutions for the legal industry. The said category includes document management systems (1.99), an electronic signature (1.92), and systems for a law firm/legal department management (2.17).

At the same time, the survey results indicate their unwillingness to use selected tools, such as systems for request-for-proposal management (2.52), online out-of-court dispute resolution systems (2.45), and online platforms for permanent lawyer-client and lawyer-lawyer communication (2.25).

The extreme values assigned to online out-of-court dispute resolution systems suggest lack of certainty on the part of the respondents, which could be interpreted as lack of readiness of the market for such solutions, a high level of misunderstanding among the respondents or doubts as to their true usefulness, despite a visible interest in the subject as such.

Applying the Thematic Analysis method following the rigour of the methodical research procedure proposed by Virginia Braun and Victoria Clarke, I analysed all the responses to individual questions in the semi-open part. As per phase one, I read all of them (responses for the semi-open part for the first question) looking for keywords or related terms, which allowed me to find links with various substantive categories. In phase two, I began content-coding, and then categorized the content into themes (phase three). Having performed a re-check, in phase four, I discovered thematic connections and created the ultimate thematic map. Then I renamed and redefined the final themes and moved to the last phase. Using the TA method, I managed to isolate six themes: 1. court IT systems, 2. online legal databases, 3. project management systems, 4. communicators, 5. dedicated tools, 6. carriers/media. Based on the respondents' replies, one can conclude that IT systems used by Polish courts are also an important field when lawyers use IT and need to be involved while Polish lawyers are largely dissatisfied with such solutions<sup>23</sup>.

### **Impact of information technologies on individual areas of the lawyer's work**

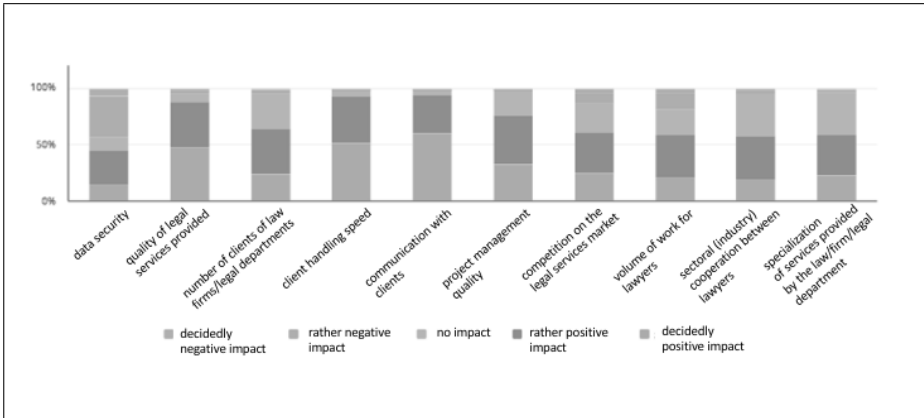
In the second question, the respondents were asked to assess the impact of IT use on particular areas of the lawyer's work. The results showed a highly interesting map of technological impact areas and the respondents' attitude superimposed over the lawyer's daily activity on many levels and in various processes.

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available replies has a value attached to it. For example, the respondent could respond to the first question of this survey using the following variants: I currently use (1), I'd like to use (2), I don't want to use (3). As each of the response variants has its percentage of selection by the respondents (also known as how many times the respondents selected given response variants), I assumed it constituted a weight in its own right. Consequently, the closer the response was to 1, the more frequent the 'I currently use' answer was and the closer to 2, the more frequent the 'I'd like to use' answer was, etc.

<sup>23</sup> A direct citation from one of the respondents' replies, to question 1: 'The system of online access to court cases – I currently use it yet not in all cases (the system's efficiency varies depending on the court)'.

**Chart 2: Structure of the respondents’ replies to the question ‘What is your assessment of the impact of IT use on individual areas of the lawyer’s work?’ (number of replies: 447)**



Source: the author’s elaboration

Thanks to the use of a Likert scale which helps acquire knowledge of the respondents’ attitudes towards listed aspects, the survey results provided information on their positive or negative assessment concerning the impact of IT use on given areas of their daily work. Interestingly, the respondents, on average, did not indicate negative or rather negative impacts on any of the listed areas of their daily work<sup>24</sup>. The lowest weighted average value was 3.12 and pertained to data security. Communication with clients (4.53), client service speed (4.43), and quality of legal services provided (4.31) was assessed as areas of the highest level of decidedly positive IT impact.

As I found out, in the areas of sectoral (industry) cooperation between lawyers (38.59%) and specialization of services provided by the law firm/legal department (37.91%), the respondents most frequently opted for the ‘no impact’ reply. In my view, such results indicate a high level of ignorance as regards the multi-layer impact of IT on the legal services sector as well as the potential opportunities IT bring<sup>25</sup>.

Puzzling is the high percentage (30.96%) of responses that IT does not have any impact on the number of clients of law firms/legal departments. As the respondents do appreciate the rather positive and decidedly positive impact on the speed of handling their clients and communicate with them, that should translate into more clients to be served. This interesting conclusion requires further studying, yet it may suggest, for instance, a constant demand for legal services, not conditional (even partly) upon service quality.

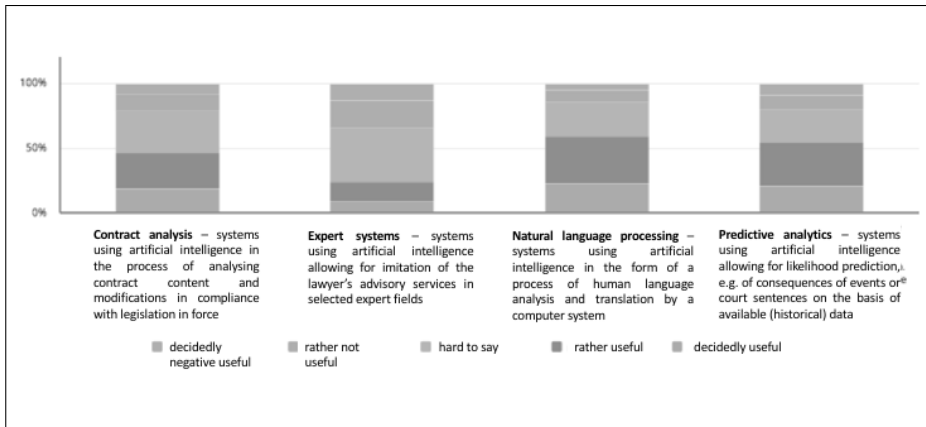
<sup>24</sup> With no variant did the weighted average of the response value reach the value lower than 3.12.

<sup>25</sup> As regards question no 2, six respondents provided their replies in the dedicated section of the questionnaire. They all included the response variants suggested previously. A direct quotation from a respondent’s reply: ‘better economy of the lawyer’s time equals better accessibility of legal services’.

**Evaluation of the usefulness of AI application for legal services**

In the third question, I asked the respondents to assess the utility of using artificial intelligence for a list of legal services. With a Likert scale again, I examined their attitude towards selected systems making use of AI aspects applied in the area of legal services (Ashley, 2017).

**Chart 3: Structure of the respondents’ replies to the question ‘What is your assessment of the utility of using artificial intelligence in the provision of the legal services listed below?’ (number of replies: 441)**



*Source: the author’s elaboration*

The structure of the responses given suggests a high level of the respondents’ ignorance as regards the listed systems, i.e. contract analysis, expert systems, natural language processing, or predictive analytics.

Only a single tool, an expert system, was found rather unhelpful, with a trend of ‘hard to say’ responses (average 2.86), which suggests a high level of lawyers’ uncertainty as to that solution and its future. The highest value was assigned to AI utility for natural language processing (3.64), yet also here the results are far removed from a positive assessment.

A relatively small discrepancy and the oscillation around the ‘hard to say’ response re-confirm my earlier premise that Polish lawyers do not know much about possible uses of artificial intelligence, and consequently legal technology solutions on offer.

## V. Selected Practical Implications for the Legal Services Market

A lawyer's work can be performed by pursuing one's activity mainly within the area shared by law firms on the one hand and corporate legal departments on the other (Lovett, 2015). In the questionnaire survey discussed here, more than 68% of the respondents declared to be working as lawyers at law firms, with 10.21% declaring their workplace to be some other enterprise, organization, or institution<sup>26</sup>.

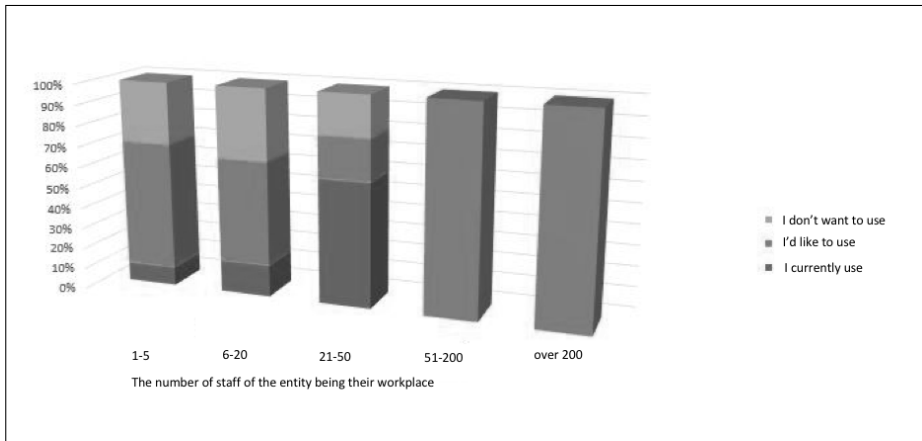
Characteristic of the industry, that division is of major importance for analysing lawyers' openness towards using IT in their daily work (Hill, 1995). The specific features of a given workplace define its modalities, resources, and standards (practices), thus exposing considerable differences between law-firm and in-house lawyers (Hackett, 2002). This, in turn, brings us to the legal tech industry, which should employ different strategies for selling their products and services depending on the target group.

Analysing the results of the questionnaire survey looking at the differences between law firm and in-house lawyers, I have made several interesting observations. Most discrepancies in the respondents' replies were due to document generation automation systems. According to the results, that tool is currently used mainly by medium-sized law firms (21 to 50 employees) and legal departments of the largest companies (over 200 employees). One could conclude that medium-sized law firms lean towards automation, while the biggest ones are not that willing (open?) to embrace such solutions. It is likely that large law firms, particularly those with more than 51 staff, use less experienced employers to perform activities that could be automated in the future. In turn, legal departments of only the largest enterprises (over 200 employees) use automation.

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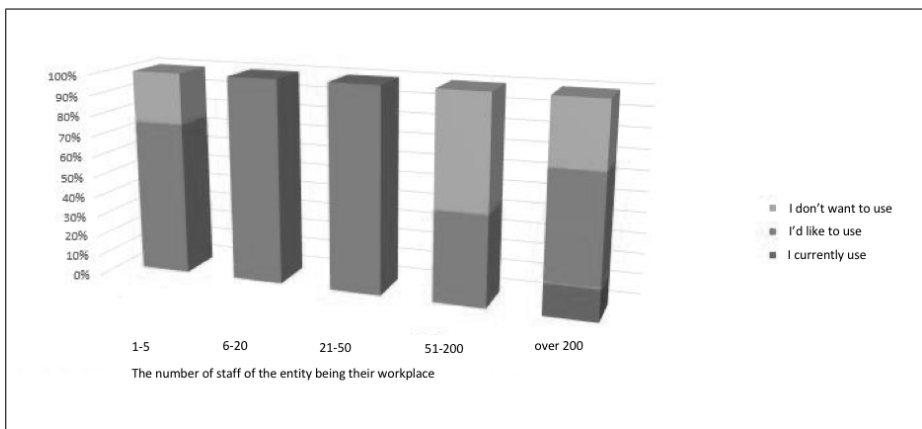
<sup>26</sup> 3.8% indicated a public administration body, 2.61% – other, while 14.73% declared not to provide legal services and not to work as a lawyer. That category included final-year university students, not yet working in their profession.

**Chart 4: Structure of the respondents' replies to the question 'Which of the information technologies listed below do you currently use/would like to use/don't want to use in your daily work as a lawyer?' concerning exclusively the tool 'automated document generation system'. Replies of respondents who declared law firms as their workplace (number of replies: 412)**



Source: the author's elaboration

**Chart 5: Structure of the respondents' replies to the question 'Which of the information technologies listed below do you currently use/would like to use/don't want to use in your daily work as a lawyer?' concerning exclusively the tool 'automated document generation system'. Replies of respondents who declared other enterprises, organizations, or institutions as their workplace (number of replies: 412)**



Source: the author's elaboration

An in-depth analysis of the results of the questionnaire survey conducted allowed me to discern different results depending on the respondents' age, particularly noticeable when it comes to their attitude to tools using artificial intelligence. Two solutions – the natural language processing and predictive analytics tools – received the highest number of positive views of the respondents declaring their 'rather positive' and 'decidedly positive' impact in the 26–35 age group, yet the lowest ('rather negative' and 'decidedly negative') in the 55+ age group (in case of either of the tools). Having less fear of technological novelties, the younger generation seems to appreciate a larger scope of possibilities offered by AI.

In summary, my in-depth data analysis has helped me draw several additional conclusions:

1. Young persons (aged 18–25) have a more positive view of the utility of applying artificial intelligence in legal services than older persons.
2. The age of the respondents has little bearing on their perception of data security.
3. The level of outsourcing use by lawyers working at law firms and legal departments is similar.
4. The larger the company, the higher the level of its specialization.

## VI. Conclusion

The results of the survey conducted in the area of the questions on the current level of IT use by Polish lawyers allowed me to obtain an important base containing information of particular value for successive stages of research to be done on the sector in question.

In their daily work, Polish lawyers mostly use very rudimentary information technologies such as email and online communicators, as well as text editors. The tools emerging as clearly needed in the lawyer's daily work are document management systems and electronic signature and it is just, they that the legal technology industry as well as national lawmakers responsible for solutions applied in the common court system should pay attention to.

The respondent's optimistic attitude manifesting itself in their positive evaluation of IT impact on individual areas of their daily work, particularly as regards communication with clients and speed of service provision suggests an ample market ready to embrace advanced technological solutions. Fear is certainly linked mainly to data security, which should be given the most attention, both in terms of technological solutions and educating the users of such systems (and most possibly their clients, too).

The use of artificial intelligence in the legal services sector is uncharted territory. The occasional expression of a rather low utility of expert systems in the lawyer's daily work suggests a high level of ignorance and most likely uncertainty on the part of the respondents.

Another research tier exposing a gap in the respondents' knowledge of the legal market is their assessment of the differences present in individual countries and possibly legal systems (e.g. common law vs civil law). As my research work aims at acquiring in-depth knowledge of the Polish legal services market, it is necessary to continue studying the currently observed changes and trends. Opening to modern legal industry solutions entails new fields of development for other sectors, including that of IT.

**References**

- Albaum, G. (1997). The Likert scale revisited. *Journal of the Market Research Society*, 39(2), 1–21.
- Aljandali, A. (2016). *Quantitative Analysis and IBM® SPSS® Statistics*. Springer International Publishing.
- Ashley, K. D. (2017). *Artificial intelligence and legal analytics: new tools for law practice in the digital age*. Cambridge University Press.
- Berman, S. J. (2012). Digital transformation: opportunities to create new business models. *Strategy & Leadership*.
- Bouwman, H., Nikou, S., Molina-Castillo, F. J., de Reuver, M. (2018). The impact of digitalization on business models. *Digital Policy, Regulation and Governance*.
- Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Thousand Oaks, CA: Sage.
- Braun, V., Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77–101.
- Braun, V., Clarke, V. (2012). Thematic analysis. In H. Cooper (Editor-in-Chief *APA Handbook of Research Methods in Psychology: Vol. 2. Research Designs*, 2012, the American Psychological Association.
- Degryse, C. (2016). Digitalisation of the economy and its impact on labour markets. *ETUI Research Paper-Working Paper*.
- Fетро, M. N. (2018). Book Review: *Adventures in Social Research: Data Analysis Using IBM SPSS Statistics*.
- Forza, C. (2002). Survey research in operations management: a process-based perspective. *International journal of operations & production management*.
- Fowler Jr, F. J. (2013). *Survey research methods*. Sage publications.
- Gastaldi, L., Corso, M. (2012). Smart healthcare digitalization: using ICT to effectively balance exploration and exploitation within hospitals. *International Journal of Engineering Business Management*, 4 (Godište 2012), 4–9.
- Gray, C. W., Hanson, R. J., Heller, M. A., Ianachkov, P. G. (1992). The legal framework for private sector development in a transitional economy: The case of Poland. *Ga. J. Int'l & Comp. L.*, 22, 283.
- Groves, R. M., Fowler Jr, F. J., Couper, M. P., Lepkowski, J. M., Singer, E., Tourangeau, R. (2011). *Survey methodology* (Vol. 561). John Wiley & Sons
- Hackett, S. (2002). Inside Out: An Examination of Demographic Trends in the In-House Profession. *Ariz. L. Rev.*, 44, 609.
- Henriette, E., Feki, M., Boughzala, I. (2015). The shape of digital transformation: A systematic literature review. *MCIS 2015 Proceedings*, 431–443.
- Hill, A. M. (1995). A Problem of Privilege: In-House Counsel and the Attorney-Client Privilege in the United States and the European Community. *Case W. Res. J. Int'l L.*, 27, 145.
- Hussain, M., Khan, M., Al-Aomar, R. (2016). A framework for supply chain sustainability in service industry with Confirmatory Factor Analysis. *Renewable and Sustainable Energy Reviews*, 55, 1301–1312.



- Isaksson, A. J., Harjunkski, I., Sand, G. (2018). The impact of digitalization on the future of control and operations. *Computers & Chemical Engineering*, 114, 122–129.
- Janson, M. A., Wrycza, S. (1999). Information technology and entrepreneurship: three cases from Poland. *International Journal of Information Management*, 19(5), 351–367.
- Joshi, A., Kale, S., Chandel, S., Pal, D. K. (2015). Likert scale: Explored and explained. *British Journal of Applied Science & Technology*, 7(4), 396.
- Kühn, Z. (2011). *The judiciary in Central and Eastern Europe: mechanical jurisprudence in transformation?*. Brill.
- De Leeuw, E. D., Hox, J. J., Dillman, D. A. (2008). *International handbook of survey methodology*. Taylor & Francis Group/Lawrence Erlbaum Associate
- Leischnig, A., Ivens, B., Wölf, S., Hein, D. (2017). Service digitization-review of the literature and research agenda. In *Dienstleistungen 4.0* (pp. 43–59). Springer Gabler, Wiesbaden.
- Lovett, S. L. (2015). The employee-lawyer: A candid reflection on the true roles and responsibilities of in-house counsel. *JL & Com.*, 34, 113.
- Moffett, S., McAdam, R., Parkinson, S. (2002). Developing a model for technology and cultural factors in knowledge management: a factor analysis. *Knowledge and Process Management*, 9(4), 237–255.
- Mrowczynski, R. (2016). Institutional professionalization of lawyers in state-socialism and post-socialism: Poland and Russia compared. *International Journal of the Legal Profession*, 23(2), 157–184.
- Pinsonneault, A., Kraemer, K. (1993). Survey research methodology in management information systems: an assessment. *Journal of management information systems*, 10(2), 75–105.
- Rachinger, M., Rauter, R., Müller, C., Vorraber, W., Schirgi, E. (2019). Digitalization and its influence on business model innovation. *Journal of Manufacturing Technology Management*.
- Sudman, S., Bradburn, N., Schwarz, N. (1997). Thinking about answers: The application of cognitive processes to survey methodology. *Psychcritiques*, 4
- Wang, C. L., Ahmed, P. K. (2004). The development and validation of the organisational innovativeness construct using confirmatory factor analysis. *European journal of innovation management*.
- Walwei, U. (2016). *Digitalization and structural labour market problems: The case of Germany* (No. 994936693502676). International Labour Organization.
- Wittkop, A., Zulauf, K., Wagner, R. (2018). How digitalization changes the internationalization of entrepreneurial firms: theoretical considerations and empirical evidence. *Management Dynamics in the Knowledge Economy*, 6(2), 193–207.
- Zhou, J. (2013). Digitalization and intelligitization of manufacturing industry. *Advances in Manufacturing*, 1(1), 1–7.