JULY 2021

Technology and Innovation in Legal Services

Final Report for the Solicitors Regulation Authority

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Suggested citation: Sako, M. & Parnham, R. (2021) **Technology and Innovation in Legal Services: Final Report for the Solicitors Regulation Authority**. University of Oxford. An electronic copy can be downloaded from here.

CHAPTER 3

Market Segmentation in the Legal Sector

INTERACTIVE CONTENT LINKS
3.1 PeopleLaw vs BigLaw
3.2 Regulated vs unregulated markets: a labour market perspective
3.3 Understanding the unregulated sector
Appendix to Chapter 3

What market segments in legal services are most likely to innovate? To answer this question, legal services markets may be segmented in different ways, depending on regulatory and other considerations.

In the face of market entry by alternative legal service providers and technology providers, there is a pressing need to develop a better understanding of the unregulated sector. This unregulated sector is potentially capable of being more innovative because of less restrictive regulation, and yet potentially at risk of causing consumer detriment owing to the relative absence of standards and regulation. What, then, are an appropriate regulatory principle and activities to be applied to promote innovation in the regulated sector?

Within, and separate from, the regulated vs unregulated market segmentation is the distinction between PeopleLaw and BigLaw. These segments represent individuals and small businesses on the one hand and large corporations on the other as their respective client bases. The last few decades have seen an increasing concentration of resources within the legal sector toward serving corporate clients, to the alleged detriment of individual and small business clients.[1] Will the adoption of legal technology level the playing field, lowering cost of access to legal services, thus equalising resources and meet needs in PeopleLaw and BigLaw?

1 John Armour and Mari Sako (2021) *Lawtech: Levelling the Playing Field?* SSRN working paper.

In order to be able to answer these questions in subsequent chapters, we aim in this chapter to present available evidence of recent developments in the market segments.

The chapter is structured as follows:

- The first section looks at market segmentation by client type - PeopleLaw and BigLaw - focusing on ways in which they differ.
- The second section shifts to market segmentation by regulation, contrasting the SRA-regulated and the non-SRA legal sectors from a labour market perspective. In particular, we analyse a large dataset of nearly 900,000 online job postings in the UK during 2014-2020, to identify variations in lawyer and non-lawyer jobs requiring lawtech skills as part of their job specification. Direct comparisons are made with the US. The term 'lawyer' is used here to refer to 'solicitors, barristers, and judges', and 'non-lawyer' refers to other jobs in the legal sector.
- The third section presents a way to consider the unregulated sector, by identifying layers of law, regulation, and standards. This framework facilitates the discussion of policies to promote lawtech startups in Chapter 5 and broader implications for policy and regulation in Chapter 6.

3.1

PeopleLaw vs BigLaw

The legal services market is commonly thought of as divided into two 'hemispheres'- the part of the legal sector that provides services to sizeable corporate clients - BigLaw - and the part that does not.

This divide was brought to prominence in the seminal work *Chicago Lawyers: The Social Structure of the Bar*,[2] which studied legal practice in the 1970s. In the United States, a number of commentators have since charted a decline over time of both the proportion of the total legal services market and, in recent years, the absolute dollar amount spent, attributable to PeopleLaw.[3]

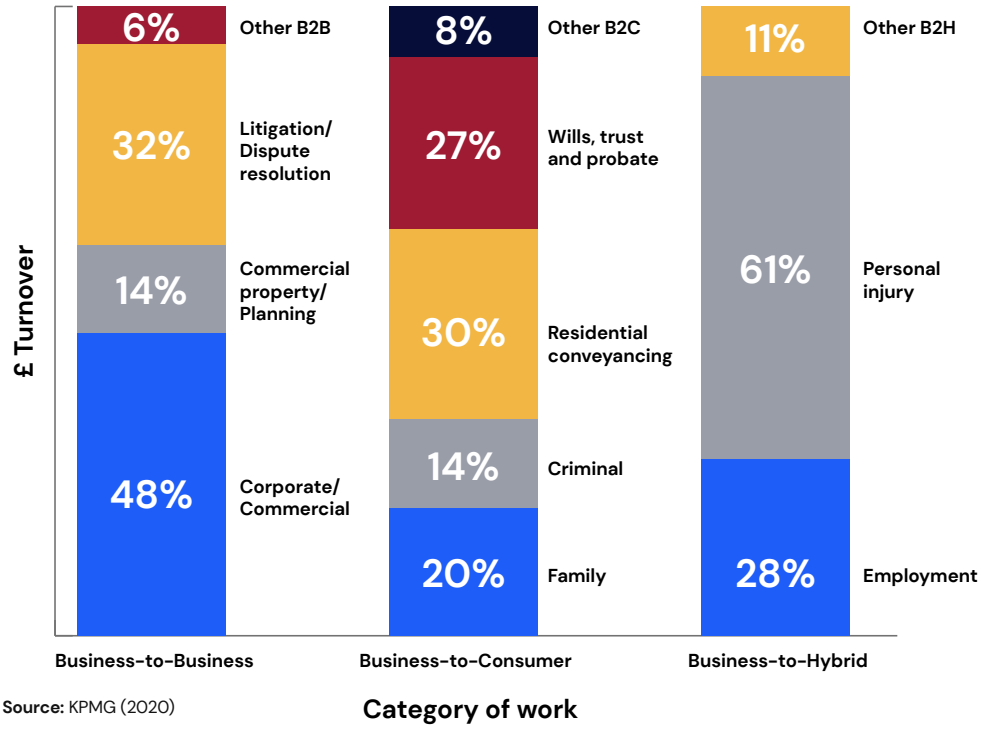
Law Society research. In order to shed light on whether or not the UK has seen a similar trend, national statistics unfortunately are not of use. The Office of National Statistics does not provide a sufficiently detailed industry classification to break down the 'legal activities' sector by class of client. There are past attempts at developing a methodology for market segmentation by type of consumer, type of consumer problem, and type of legal activity[4] but this exercise had the PeopleLaw sector as its primary concern, making it impossible to weigh the relative importance of the two sectors.

2 Heinz, J. P., & Laumann, E. O. 1982. *Chicago Lawyers: the Social Structure of the Bar*. Evanston: Northwestern University Press.
3 Heinz, J. P., Laumann, E. O., Nelson, R. L., & Michelson, E. 1998. The changing character of lawyers' work: Chicago in 1975 and 1995. *Law and Society Review*: 751-776. Hadfield, G. K. 2010. Higher Demand, Lower Supply - A Comparative Assessment of the Legal Resource Landscape for Ordinary Americans. *Fordham Urb. LJ*, 37: 129. Henderson, W. D. 2018. *Legal Market Landscape Report*: commissioned by the State Bar of California.
4 Oxera Consulting Limited (2011) Market segmentation - a framework to monitor the legal sector. Report for the Legal Services Board.

An alternative approach, given this data constraint, is to use law firm data analysed by the Law Society of England and Wales's research. This enables breaking down law firm turnover and headcount by areas of legal work. The areas of work are classified into B2C if they predominantly serve individuals (e.g. family law, criminal law, residential conveyancing, wills and probate) and into B2B if the areas serve corporate clients (e.g. commercial/corporate, litigation/ dispute resolution and commercial property and planning). A recent study by KPMG for the Law Society reports that, of the total of £24 billion in law firm turnover in 2016/17, 60% was in corporate client work (B2B) and approximately 20% in individual client work (B2C) (see Figure 3.1).[5] This 20% for B2C was as high as 50% in 1997/8, according to an analysis using the same Law Society data source (OFT (2001), page 44).[6] In 2016/17, although B2C accounted for only 22% of total law firm turnover, this market segment accounted for 33% of all law firms and 35% of solicitors, indicating that law firms are smaller and revenue per lawyer lower in PeopleLaw than in BigLaw (see Figure 3.2).

Moreover, the Solicitors Regulation Authority estimate that only 11% of law firm revenues in England and Wales come from work provided to vulnerable, or potentially vulnerable, individuals.[7] This is partly because much of this work is pro bono or funded by Legal Aid. Also, the transactions are numerous but of a much lower value than in corporate or commercial work. There has also been significant growth in the number of solicitors working in-house for corporations, rising from 16% of all solicitors in 2004 to 23% by 2019 (Law Society 2020). Because this growth is directed at corporate work, it is strongly suggestive of a decline in PeopleLaw's relative share of the overall legal services market. In short, over the last two decades, the share of PeopleLaw (as proxied by the only data available for England and Wales, namely the B2C share) in the total revenue generated by law firms declined, by an amount estimated to be from around 50% to 20%.

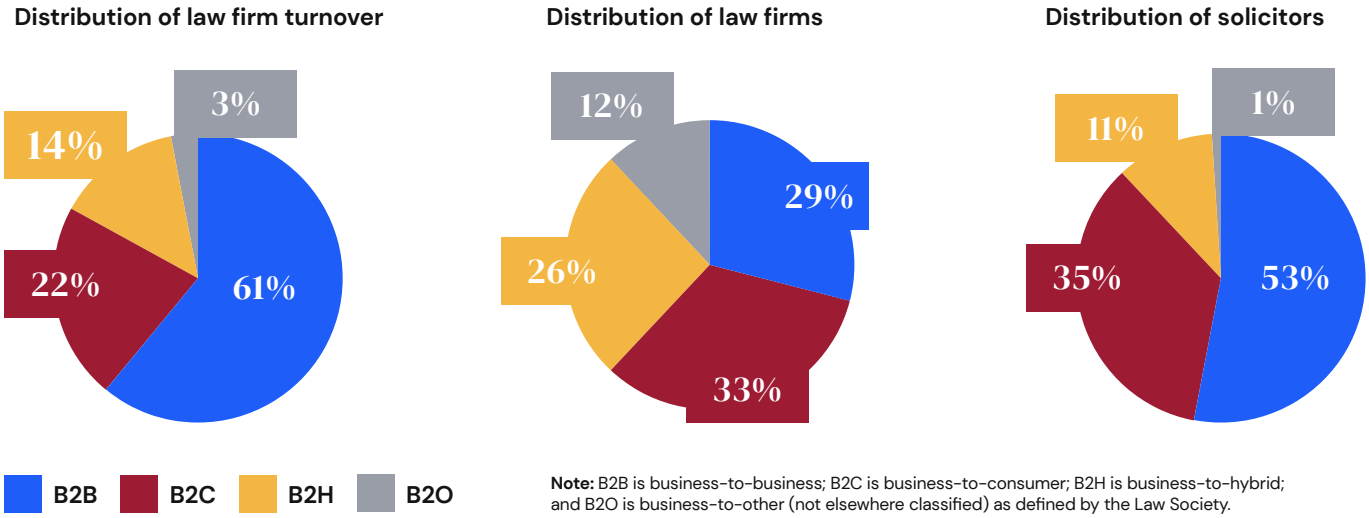
Figure 3.1: Law firm turnover by category of legal work in England and Wales



Source: KPMG (2020)

5 KPMG (2020) Contribution of the UK legal services sector to the UK economy. Report for the Law Society of England and Wales. PeopleLaw (B2C) clients are assumed to include individuals and small businesses. BigLaw (B2B) clients are primarily corporate legal departments and big law firms. A third category, HybridLaw (B2H), has as its clients the public sector (national and local governments), the judiciary, the not-for-profit sectors, and a combination of B2C and B2B clients, for example in the case of employment law applied to both employers and employees. The Law Society also created a fourth small category, B2O (O standing for others), when classification was difficult to make.
6 Office of Fair Trading (2001) *Competition in Professions*, A report by the Director General of Fair Trading, March.
7 Solicitors and Regulation Authority (2009) Changing legal services market.

Figure 3.2 Distribution of law firm turnover, law firms and solicitors in England and Wales, by category of legal work in 2016/17



Note: B2B is business-to-business; B2C is business-to-consumer; B2H is business-to-hybrid; and B2O is business-to-other (not elsewhere classified) as defined by the Law Society.
Source: Law Society of England and Wales.

Online survey evidence on PeopleLaw vs BigLaw

The online survey results highlight the following contrasts in the two market segments (see Chapter 2 for details).[8]

- **BigLaw firms have made more changes in the last 12 months**. In the last 12 months, firms serving large businesses as clients are found to be more likely than those servicing individual or small business clients to have 'introduced new services', 'introduced new technology' and 'improved or increased use of existing technology'.

- **Both segments adopt technology for similar purposes**. Among the current users of legal technology, 'improving service quality' and 'improving efficiency of workflows' are both more important purposes of adopting technology for firms with large businesses as clients than for firms with individuals or small businesses as clients.

- **Barriers to technology adoption are greater for PeopleLaw firms**. Specifically, 'lack of financial capital to invest in technology' is more important for firms whose clients are individuals (29.2% of respondents said 'very significant') or small businesses (12.8%) than for those with large business clients (7.1%). 'Lack of staff expertise to assess and implement technology' is also a PeopleLaw issue: 5.9% with small business clients, as compared to 2.3% of respondents with large business clients, said that lack of staff expertise is a 'very significant' barrier to tech adoption.

- **Regulatory uncertainty or barriers are greater for PeopleLaw firms**. Among those already adopting legal technology, 47.4% of respondents with individual clients, as compared to 32.5% of those with large business clients, find 'regulatory uncertainty or barrier' to be 'somewhat significant' or 'very significant'. Among the non-adopters of technology, 'regulatory uncertainty or barrier' is 'somewhat significant' or 'very significant' among 40.0% of respondents with individual clients, compared to 27.3% of those with large business clients.

None of the above results might be surprising. Unless these barriers - lack of financial capital, lack of staff expertise, and regulatory uncertainty - are addressed, legal technology is unlikely to be a leveller of playing fields across the two market segments.

8 All variations by types of firms reported here are statistically significant at the 5% level, using the chi-squared test.

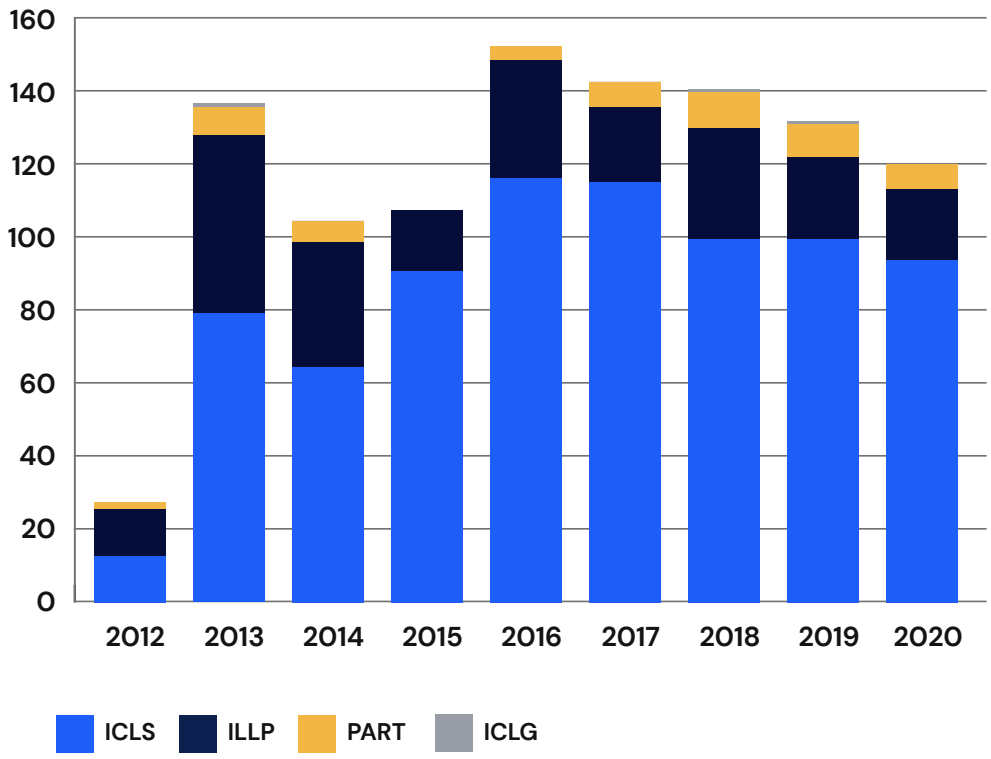
Alternative business structures

The introduction of alternative business structures (ABSs) was intended, among other things, to promote innovation and diversity in the provision of legal services. Since 2012, the SRA has approved ABSs, and in the first quarter of 2021 there were a total of 1,066 SRA-licensed ABSs (see Figure 3.3 for numbers approved over time). Taking account of the ABSs approved by other regulators such as ICAEW and CLC, the total number of ABSs in operation totalled 1,528 (see the Legal Services Board market structure dashboard) in the first quarter of 2021.

By organisation type, SRA-licensed ABSs are dominated by companies limited by shares, followed by limited liability partnerships.

With access to external capital and to non-legal managers and owners, ABSs have been regarded as a font of innovation and forward-looking adoption of legal technology. There exists evidence that ABSs are more innovative than non-ABS practices as early as in 2015 (in the SRA/LSB survey). In 2018, the LSB survey also found that ABSs were three times more likely to use technology. Our online survey finds similar trends, with ABSs being more innovative and more likely to have adopted legal technology (see Chapter 2 for details). In particular, ABSs (31.3%) are more than twice as likely to have introduced new services than non-ABSs (12.6%) in the last 12 months; ABSs (52.5%) are also more likely to have introduced new technology than non-ABSs (33.1%).

Figure 3.3: Number of ABSs newly licensed each year by SRA, by organisation type



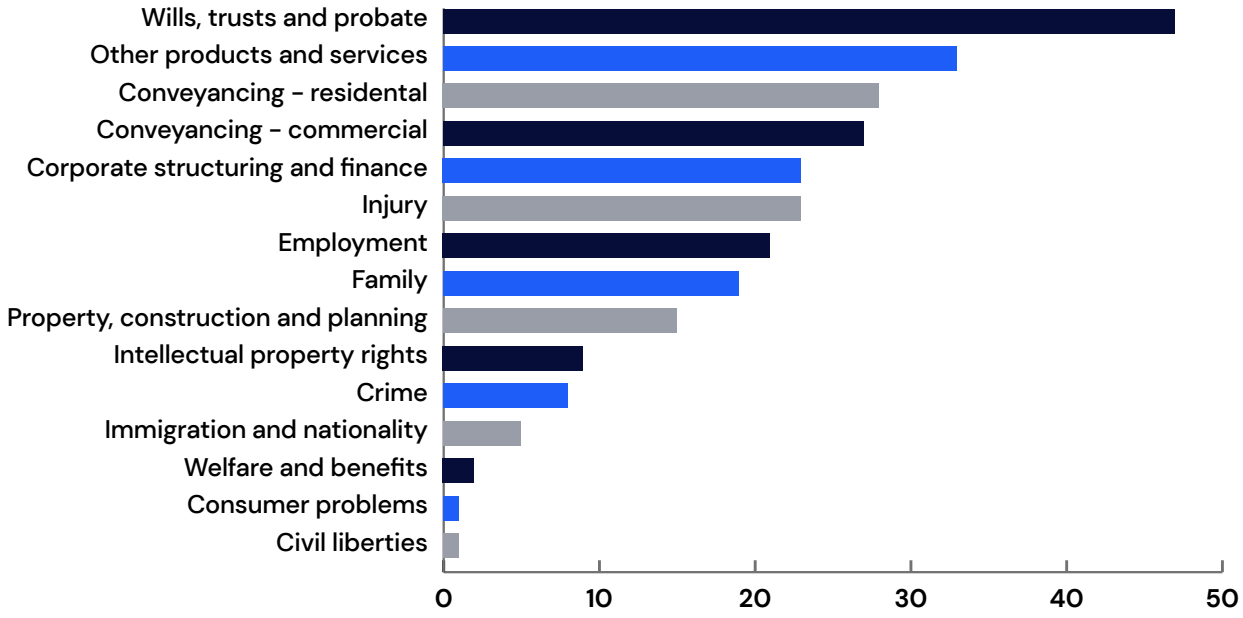
Note: ICLS: company limited by shares. ILLP: limited liability partnership. PART: partnership. ICLG: company limited by guarantee.
Source: Calculations based on data from the SRA's firm data web service accessed on 30/12/2020.

The overall picture of greater diffusion of innovation and legal technology among ABSs, however, should be modified by noting a different dynamic at play for ABSs operating in the PeopleLaw and BigLaw market segments. In particular, a majority of ABSs operate in areas of law for individual consumers - 47% of ABSs in a 2017 LSB evaluation study were found to be in wills, trusts, and probate, alongside conveyancing and personal injury (see Figure 3.4). The vast majority of law-firm-to-ABS conversions have been by small firms whose clients are individuals and small businesses rather than large businesses. At the same time, there are some large ABS entrants in both PeopleLaw (notably Co-op Legal Services) and BigLaw (notably the Big Four audit and accounting firms). ABS conversion by large incumbent law firms, such as DWF and Mishcon de Reya, has been very much the exception.

By 2021, therefore, it seems fair to state that there are two ABS hemispheres, namely PeopleLaw and BigLaw. ABSs are not a uniform population, but are divided into these two market segments, each with a different purpose. In BigLaw, ABSs are formed, adopting multi-disciplinary practices in some cases, to offer integrated business solutions - legal, accounting, tax, compliance etc. - to corporate clients. In PeopleLaw, ABSs may also be formed to deliver integrated solutions involving real estate, insurance, employment advice, etc., but also in order to access financial capital and non-legal managerial talent.

Figure 3.4: Areas of law for alternative business structures

% of total number of ABSs with revenue within service area
ABSs can be active in many services areas and therefore the percentages do not sum to 100%



Source: LSB (2017): Evaluation: ABS and investment in legal services 2011/12 - 2016/17 - Main report, p.16.

3.2

Regulated vs unregulated markets: a labour market perspective

In what ways do the SRA-regulated sector and the non-SRA sector differ? This section takes a labour market perspective to addressing this question, by analysing a database of digital job postings in a database hosted by Burning Glass Technologies. Burning Glass Technologies, an analytics software company, scrapes job postings from the internet.

Every day, they check more than 40,000 online job boards and company webpages to find new job vacancies (see the Chapter Appendix for further details about the database). Notable possible shortcoming include the exclusion of non-online vacancies,[9] and the changing share of jobs advertised online in total vacancies over time. Notwithstanding such shortcomings, we are able to count the number of online job vacancies advertised since 2010 in the United States and since 2012 in the United Kingdom for legal occupations and the legal sector.

Analysis approach

We compared approximately 900,000 job ads in the legal sector in the UK and a similar number of job ads in the US during 2014-2020. Extraction and filtering were conducted in three steps. First, we extracted all job ads in the legal services sector using the Standard Industrial Classification (SIC) Code 69.1 in the UK, and the equivalent North American Industrial Classifications (NAICS) code in the US. Second, we classify all job ads in the legal sector into occupational categories using the Standard Occupational Classification (SOC) codes for licensed solicitors, paralegals, etc. in the UK, and using its counterpart - O*NET - to achieve a similar classification in the US. In both countries, we classify job ads into lawyer jobs (for licensed lawyers (ie solicitors, barristers and judges in the UK)) and non-lawyer jobs (for all others excluding licensed lawyers) (Details of these classifications are in the Appendix to this chapter). Third, we identify jobs in which at least one skill required in the job listing contains one of the lawtech skills that we define. Here, we adopted a broad approach, to include digital skills in the use of package software as well as coding skills (for example data science, AI, python, SQL, etc.) (a full list of key words used to search for lawtech skills is provided in the chapter Appendix). In the UK, we also classified job ads into those occurring in the SRA-regulated sector and those in the non-SRA sector.[10] [11]

9 In legal services, senior associate roles are unlikely to be advertised, online or not online, owing to heavy reliance on internal promotion. Moreover, senior roles and equity partner roles are unlikely to appear in this database.
10 We therefore include, in our analysis of the unregulated (non-SRA) legal sector, job postings by firms which are regulated by front-line regulators other than the SRA. We nevertheless use the term 'unregulated' as a shorthand for the sector that is not regulated by the SRA, in this subsection.
11 We classify job ads as occurring in the SRA-regulated sector or not using a fuzzy matching technique. The firm names in the Burning Glass database and in the list of regulated firms provided by SRA and the Law Society of Scotland may be extremely similar but slightly different owing to inconsistencies in spelling, abbreviations, omissions and punctuation. Given that the matches are not perfect, we use an algorithm that takes advantage of a measure called TF-IDF and calculate the distance between firms' names in different databases. This technique allows us to measure the likelihood that two firms' identifiers are true matches.

Lawtech skills

What are lawtech skills?[12] The word clouds below (see Figures 3.5 to 3.7) for job skills and job titles bring to life the nature of the beast. The word clouds in Figure 3.5 are based on skills mentioned in legal jobs (for solicitors, barristers, judges, paralegals, and legal secretaries). Legal job ads specifying lawtech skills focus on skills ranging from Microsoft Office to software development. Notably, legal jobs both with and without lawtech skills also call for communication skills and teamwork collaboration.

A similar set of word clouds for non-lawyers (defined as all those who are not solicitors, barristers, judges, or other legal associate professionals) in the legal sector also reveal interesting contrasts. In particular, non-legal job postings that specify lawtech skills indeed mention data science skills, notably SQL, as well as Microsoft Office, whereas non-legal jobs without lawtech skills require skills in business development or human resources among other things (see Figure 3.6). The word clouds for job titles (Figure 3.7) reveal that job ads without lawtech skills are predominantly for human resources, and business development.

Job titles with lawtech skills include business analyst, system analyst, data analyst, software developer, and technology manager. Note that information technology (IT) appears in both job titles with and without lawtech, indicating that some IT refers to generic digital technology.

Figure 3.5: Word clouds of skills for legal jobs, with and without lawtech skills

without lawtech skills

with lawtech skills

Source: Author's calculations of 2021 Burning Glass data for: United Kingdom (2007 SIC '69.10', '69.10/2', '69.10/9', '69.1', '69.10/1', Lawyer Jobs -SOC '2413.0', '2412.0', '3520.0', '2419.0')

12 The label 'lawtech skills' is a shorthand for 'digital skills in the legal sector'.

Figure 3.6: Word clouds of job skills of non-legal jobs in the legal sector, with and without lawtech skills

without lawtech skills

with lawtech skills

Source: Author's calculations of 2021 Burning Glass data for: United Kingdom (2007 SIC '69.10', '69.10/2', '69.10/9', '69.1', '69.10/1', Lawyer Jobs -SOC '2413.0', '2412.0', '3520.0', '2419.0')

Figure 3.7: Word clouds of job titles of non-legal jobs in the legal sector, with and without lawtech skills

without lawtech skills

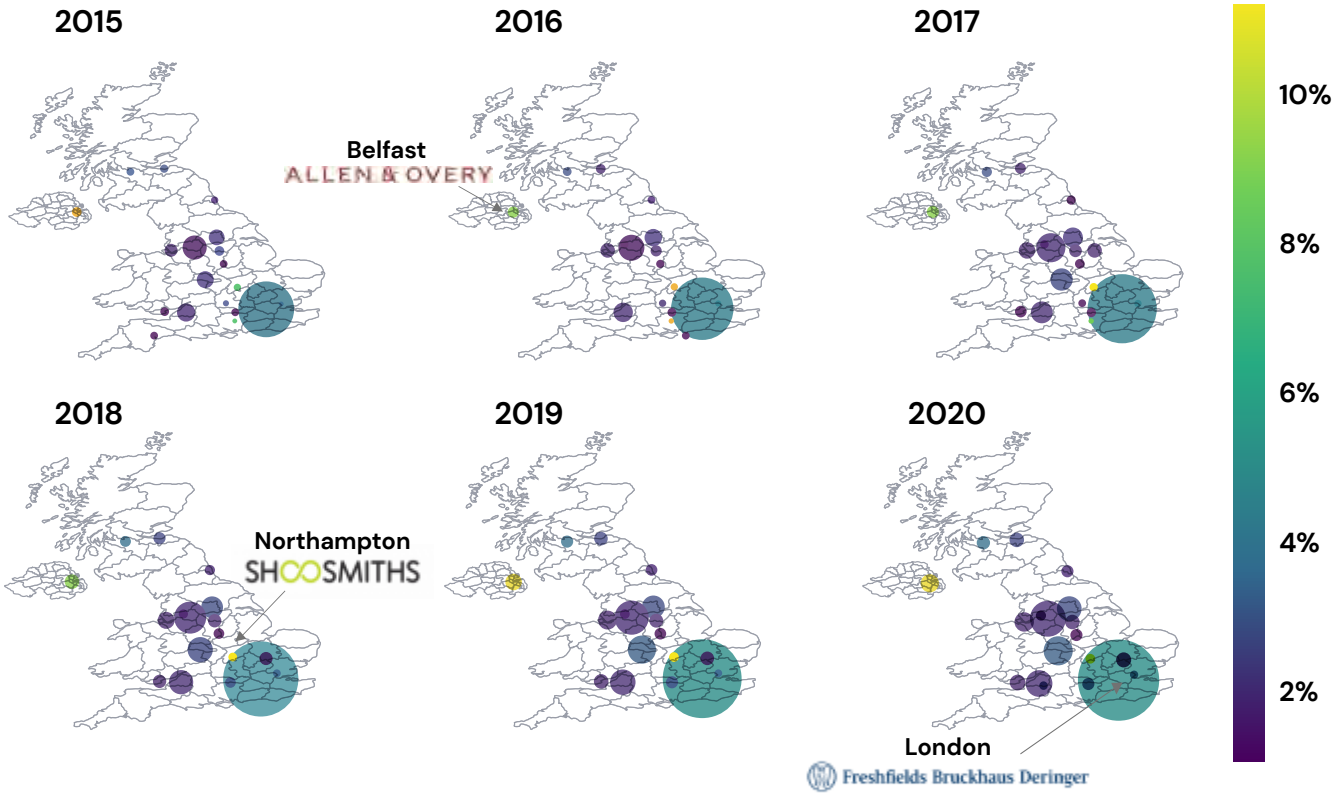
with lawtech skills

Source: Author's calculations of 2021 Burning Glass data for: United Kingdom (2007 SIC '69.10', '69.10/2', '69.10/9', '69.1', '69.10/1', Lawyer Jobs -SOC '2413.0', '2412.0', '3520.0', '2419.0')

Geographic distribution of job postings

Figure 3.8 shows the locations of firms with job postings, and how the locational distribution changes over time during 2015-2020. As is evident from the map of the British Isles over the years, London remains the location with the highest number of job postings (as indicated by the size of the bubble) and with a relatively high share of jobs with lawtech skills (colour-coded in green to yellow for high shares). After London, large bubbles - indicating the large absolute number of job postings in the legal sector - occur in cities such as Manchester, Birmingham, Bristol, Leeds, and Liverpool. Scottish cities of Edinburgh and Glasgow are also significant centres of legal sector jobs requiring lawtech skills. Lastly, Belfast is a notable location. The city has seen a rapid growth of legal job ads with lawtech skills - the bubble getting bigger and the colour shifting from yellow to green back to yellow - indicating that more than one in ten legal sector job ads (11.3% to be precise) in Belfast require lawtech skills, a proportion higher than in London (6.1%). The Belfast cluster, with nearshore centres of major law firms such as Allen & Overy and Herbert Smith Freehills, resulted from proactive regional policy.[13]

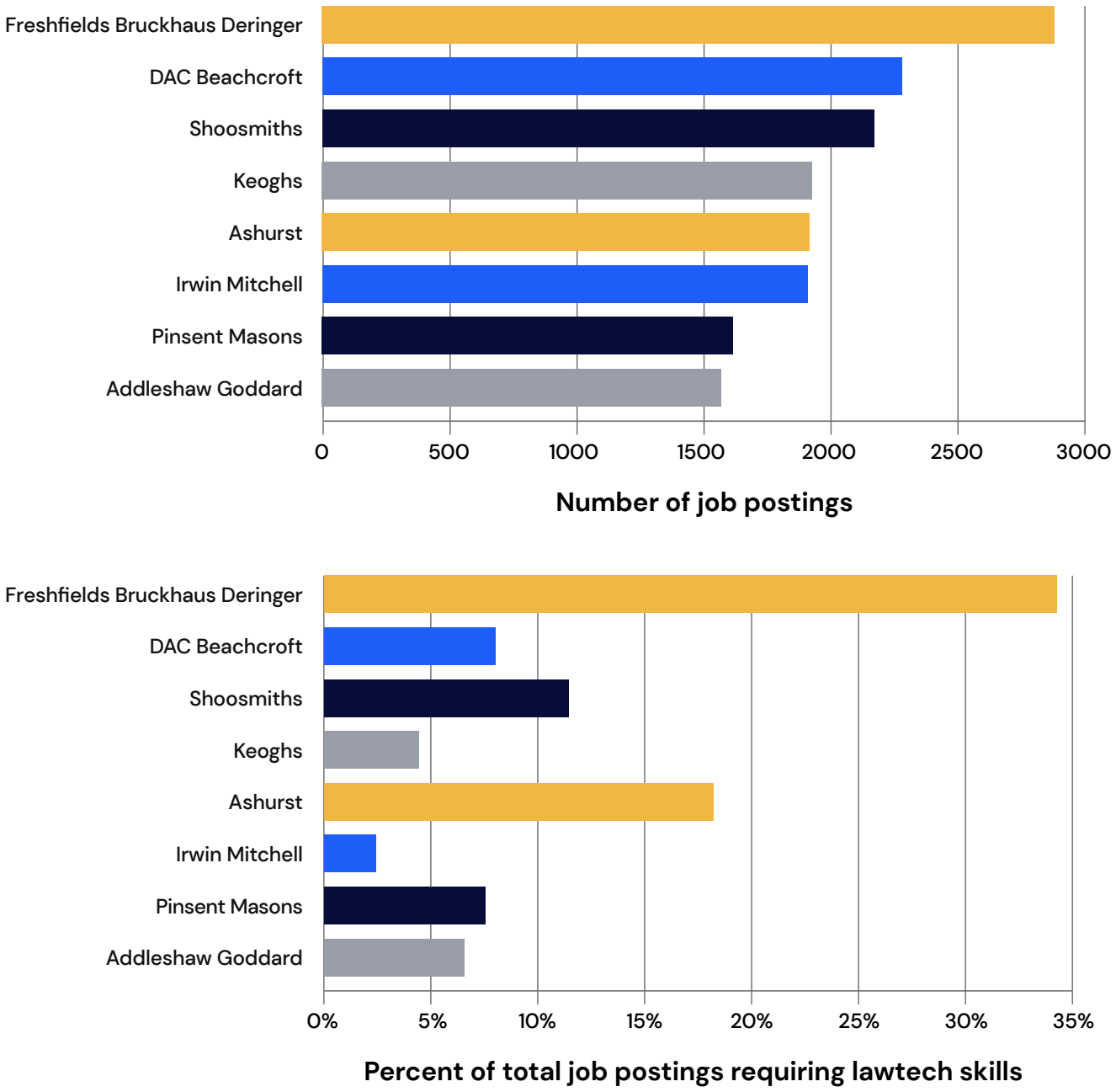
Figure 3.8: Geographic distribution of lawtech skills in the UK, 2015-2020



Size of the bubbles: number of job postings per city (top 20 cities by job postings)
Colour scale: share of jobs with lawtech skills

13 See promotion of legal technology and innovation by Invest Northern Ireland https://www.investni.com/legal-technology-and-innovation (accessed 28 May 2021).

Figure 3.9: SRA-regulated legal sector: the top ten employers in England and Wales



Source: Author's calculations of 2021 Burning Glass data for: United Kingdom (2007 SIC '69.10', '69.10/2', '69.10/9', '69.1', '69.10/1', Lawyer Jobs - SOC '2413.0', '3520.0', '4212.0')

SRA-regulated vs non-SRA legal sectors in the UK

We now turn to our central concern, namely the distinction between the SRA-regulated sector and the non-SRA legal sector. We classify job posting by firms regulated by the SRA as being in the SRA-regulated sector. We therefore include, in our analysis of the non-SRA legal sector, job postings by firms which are regulated by front-line regulators other than the SRA.[14]

First, we look at the top ten employers (ie those with the largest number of job postings over the entire 2014-2020 period) in the regulated sector (see Figure 3.9). This list is dominated by the top 50 law firms. The largest firm by both the total number of job postings and the share of lawtech job ads (ie job ads specifying lawtech skills) is Freshfields Bruckhaus Deringer, ranked sixth by revenue in The Lawyer's UK top 200 law firm list. The other nine are well-known law firms ranked in the top 50, namely DAC Beachcroft (26th), Shoosmiths (36th), the insurance-focused firm Keoghs (48th), Ashurst (12th), Irwin Mitchell (25th), Pinsent Masons (16th), and Addleshaw Goddard (23rd). [15] Among the top ten employers in the non-SRA legal sector - which include unregulated firms - are Grant Thornton, and legal recruitment agencies such as Errington Legal, RKRS, and Larbey Evans Ltd.

More job postings in the unregulated (non-SRA) sector, for both lawyers and non-lawyers

Next, throughout the period of analysis 2014-2020, there have been more job postings in the unregulated sector than in the regulated sector (see Figure 3.10). One might think that this is in part due to the fact that jobs for lawyers (ie solicitors, barriers, and judges) are less subject to online job postings than jobs for all others (which we label 'non-lawyers' to include paralegals, legal assistants, and non-legal employees).

However, focusing on job ads for lawyers only, comparing the dark blue line and the red line, the unregulated sector has had more lawyer job postings than the SRA-regulated sector, indicating a faster growth in employment in the unregulated than in the SRA-regulated sector. The unregulated sector growth outpacing the SRA-regulated sector growth is also evident if we look at non-lawyer jobs only, comparing the blue line and the yellow line; there have been at least three times as many non-legal job postings in the unregulated sector as in the SRA-regulated sector.

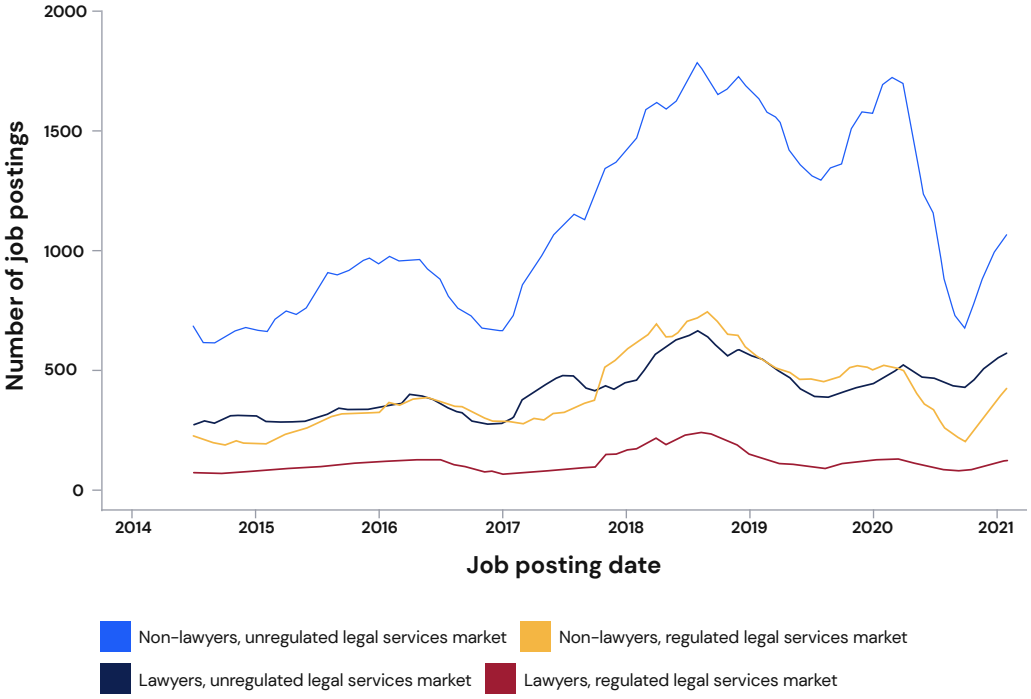
COVID-19 impact on jobs

A sharper fall in the number of job ads for non-lawyers during 2020 (blue and yellow lines in Figure 3.10) can only be attributed to the COVID-19 pandemic. As a consequence, the gap between the number of job ads for non-lawyers and that for lawyers narrowed considerably, presumably with a hiring freeze or furloughing of non-lawyers during the pandemic lockdown.

This narrowing of the gap is more sharply illustrated in Figure 3.11, which shows the shares of lawyer to non-lawyer job ads in proportionate terms. On the whole, lawyer job ads constitute around 20% of total job ads in the legal sector. The pandemic led to a higher proportion of lawyer to non-lawyer job postings in both SRA-regulated and unregulated sector, implying that, relative to non-lawyers, new hiring of lawyers continued during the pandemic. This trend was also more pronounced in the unregulated legal sector, which saw the proportion of lawyer job ads in the total listings rise to nearly 40%.

14 At times, we use the term 'unregulated' as a shorthand for the sector that is not regulated by the SRA, in this subsection.
15 See https://www.thelawyer.com/top-200-uk-law-firms

Figure 3.10: Job ads in the SRA-regulated and unregulated sectors compared



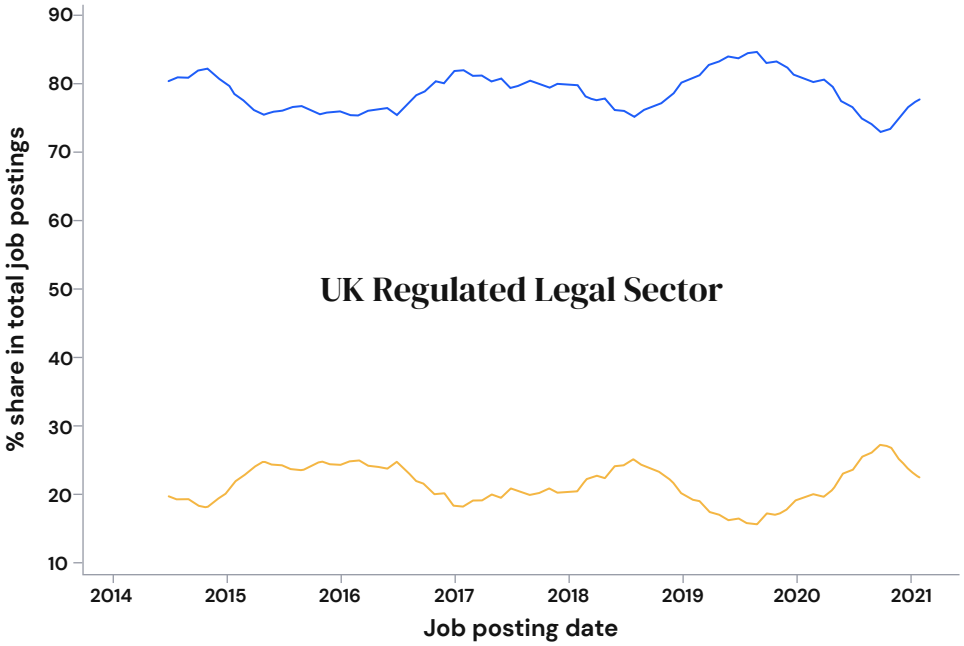
Source: Author's calculations of 2021 Burning Glass data for: United Kingdom (2007 SIC '69.10', '69.10/2', '69.10/9', '69.1', '69.10/1', Lawyer Jobs -SOC '2413.0' (solicitors), '2412.0' (barristers and judges))

Note: The graph shows the number of monthly job postings by job type (6-month moving average).

Key findings:

- In the UK, the unregulated legal service sector has more job ads than the regulated sector for both lawyers and non-lawyers
- Non-lawyers have a bigger share of job postings in both markets
- The pandemic decreased the difference in job postings between lawyers and non-lawyers

Figure 3.11: Comparing lawyer vs non-lawyer job ads, in SRA-regulated and unregulated sectors in the UK

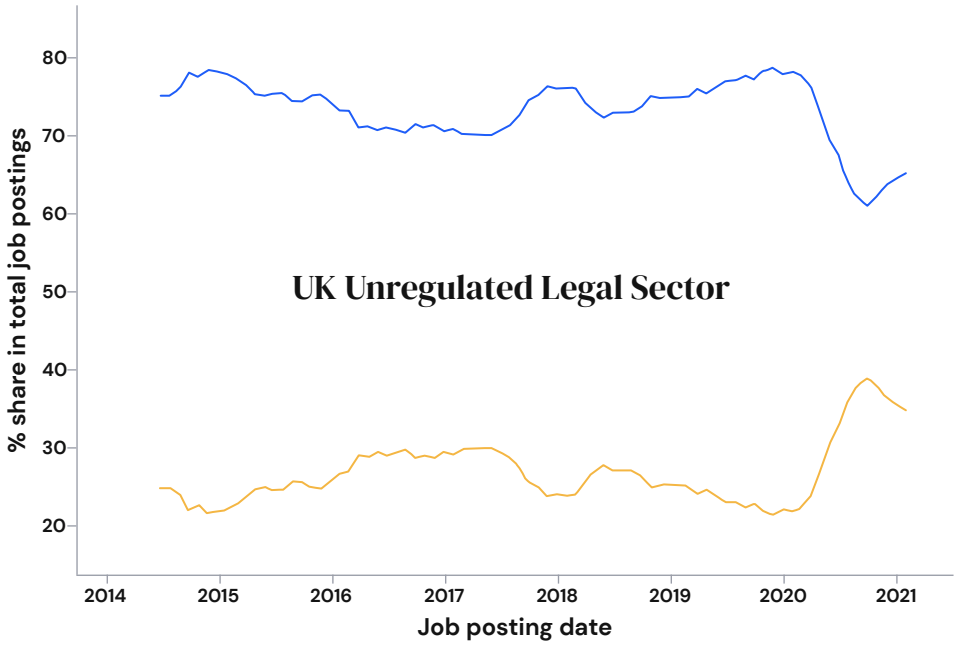


Job Type Non-lawyers Lawyers

Source: Author's calculations of 2021 Burning Glass data for: United Kingdom (2007 SIC '69.10', '69.10/2', '69.10/9', '69.1', '69.10/1', Lawyer Jobs -SOC '2413.0', '2412.0')

Key findings:

- In the regulated sector, in 2019 we see a big gap between the share of non-lawyer and lawyer jobs postings.
- In the unregulated sector, the gap starts widening in 2017.
- The pandemic decreased the difference in job postings between lawyers and non-lawyers, more so in the unregulated sector.
- In the unregulated sector, the pandemic decreased the difference further.

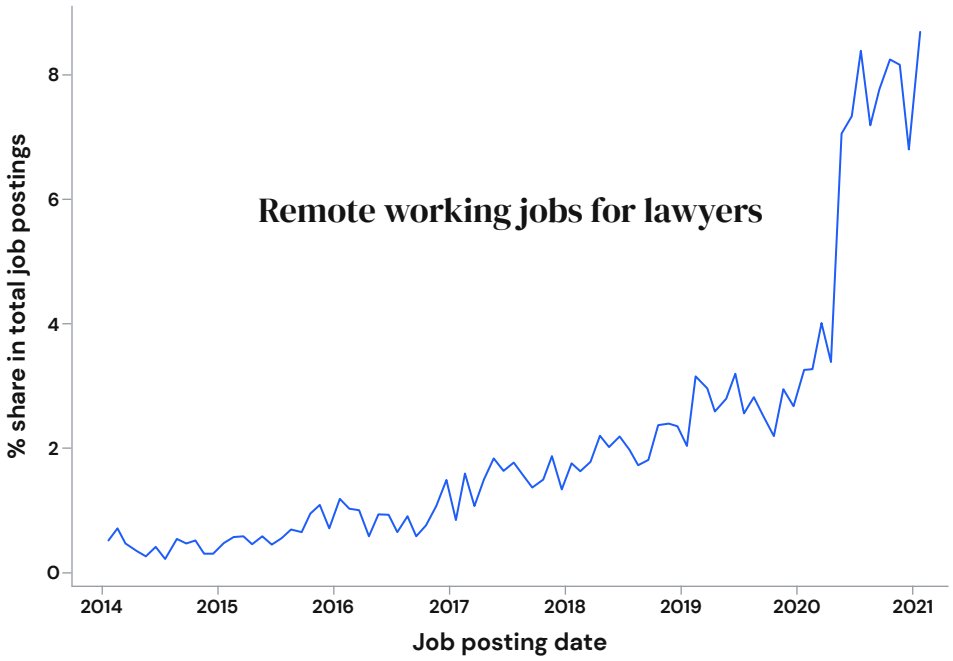


Job Type Non-lawyers Lawyers

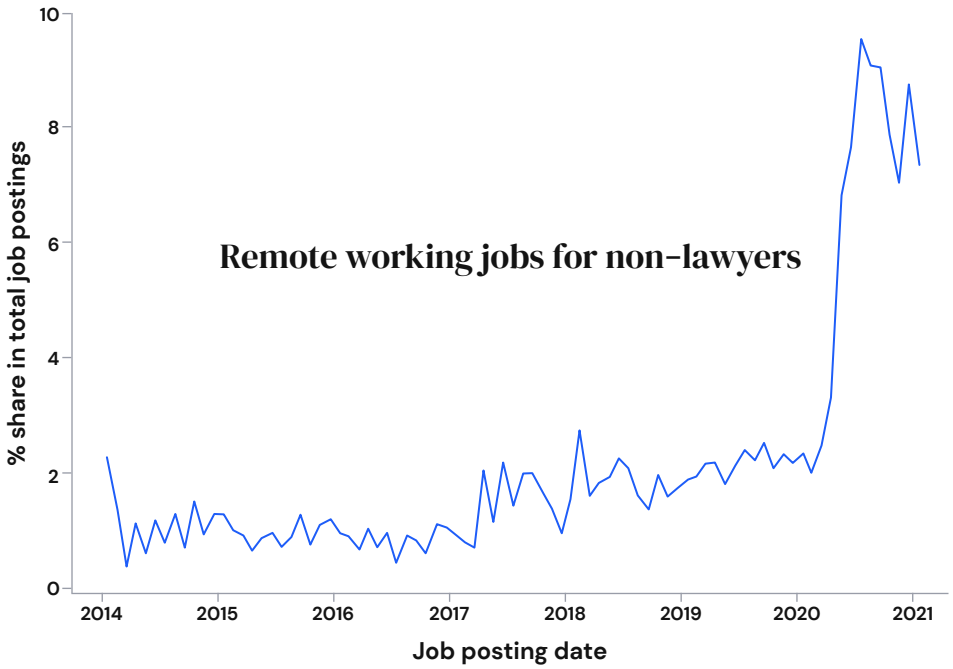
Source: Author's calculations of 2021 Burning Glass data for: United Kingdom (2007 SIC '69.10', '69.10/2', '69.10/9', '69.1', '69.10/1', Lawyer Jobs -SOC '2413.0', '2412.0')

Note: The graphs show shares of monthly job postings by job type (6-month moving average).

Figure 3.12: Impact of COVID-19 on remote working in the UK



Source: Author's calculations of 2021 Burning Glass data for: United Kingdom (2007 SIC '69.10', '69.10/2', '69.10/9', '69.1', '69.10/1', Lawyer Jobs -SOC '2413.0', '2412.0')



Source: Author's calculations of 2021 Burning Glass data for: United Kingdom (2007 SIC '69.10', '69.10/2', '69.10/9', '69.1', '69.10/1', Lawyer Jobs -SOC '2413.0', '2412.0')

Note: We calculate 3-month moving averages from monthly job postings by job type.

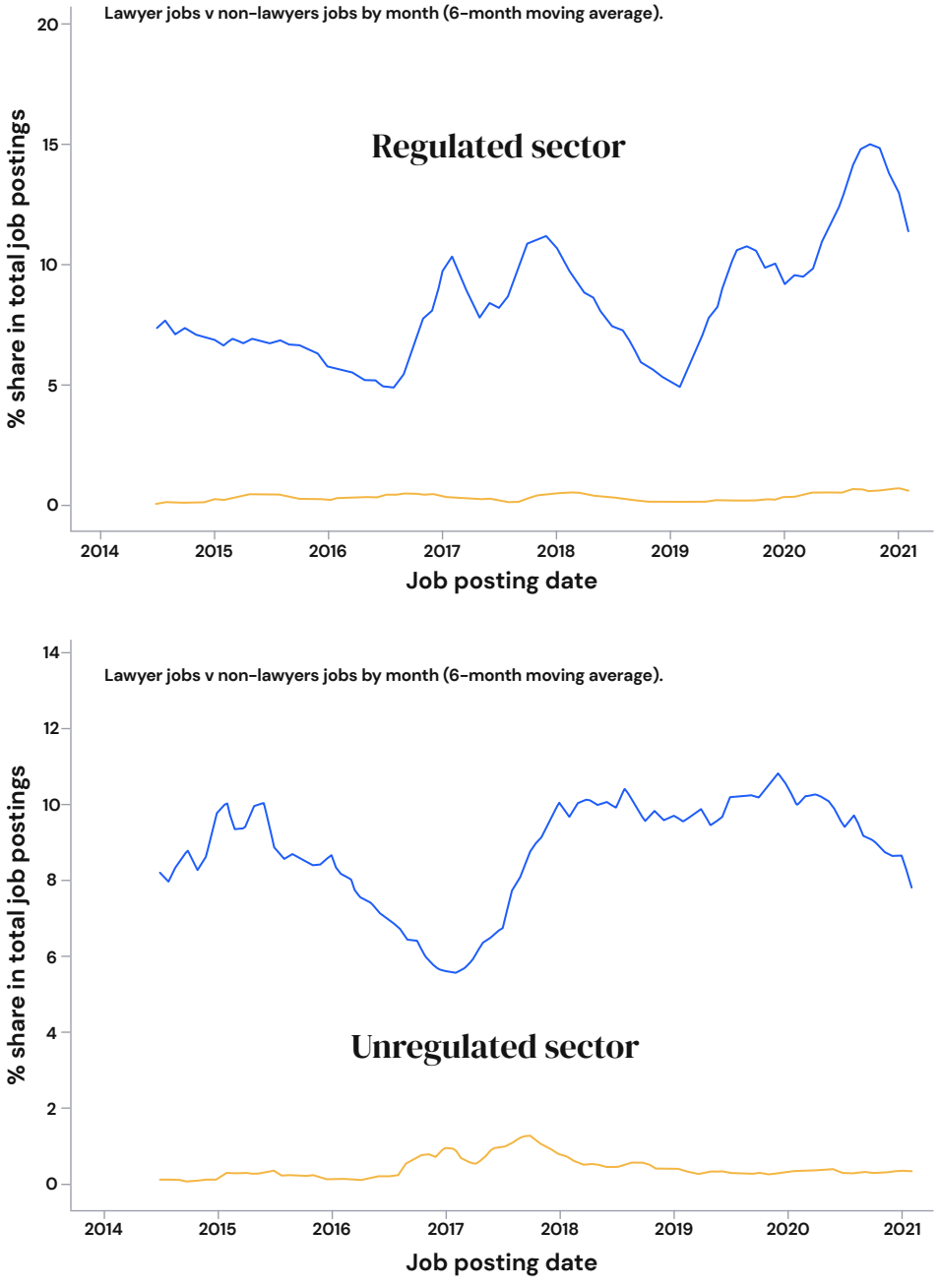
Key findings:

- For both lawyers and non-lawyers, job postings with remote working increased dramatically over 2020
- The share of job postings with remote working during 2020 are similar for lawyers and non-lawyers
- The gradual rise in remote working pre-dates the pandemic

Lawtech skills for lawyer and non-lawyer jobs

Focusing on the incidence of lawtech skills specified in job postings, lawyers (ie solicitors, barriers, and judges) have a low share of postings asking for lawtech skills throughout the 2014-2020 period - only 1-2% in both regulated and unregulated sectors. This low proportion remains, regardless of whether we look at just lawyers (defined to include solicitors, barristers and judges) (see Figure 3.13a) or at a broader category of legal professionals (that include lawyers as defined above, and other associated legal professionals and legal secretaries) (see Figure 3.13b). By contrast, the percentage of non-lawyer job postings asking for lawtech skills is much higher, starting from 5%, facing an upward trend, albeit with fluctuations, to 15%. On average, the SRA-regulated and the non-SRA sectors have similar shares of jobs requiring lawtech skills for both lawyer and non-lawyer jobs. This fact, together with a similar ratio of around four non-lawyers to every lawyer in both sectors (see Figure 3.11), implies that, proportionately, the SRA-regulated sector has the same level of access to lawtech skills compared to the non-SRA sector.

Figure 3.13a: Comparing lawtech skills in lawyer vs non-lawyer job ads, in regulated and unregulated sectors in the UK



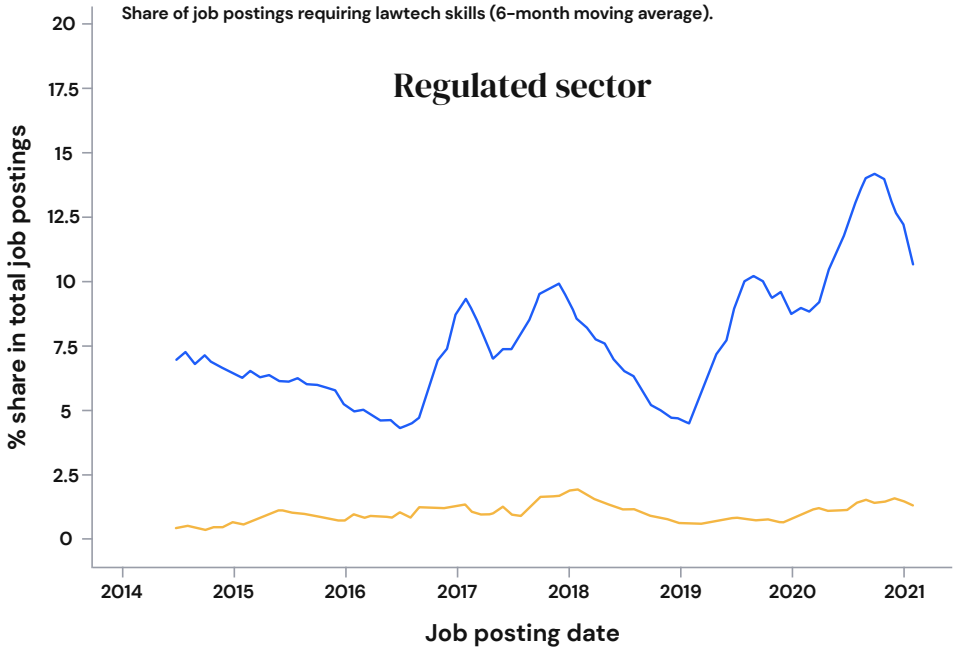
Key findings:

- In both sectors, lawyers have a low share of job postings requiring lawtech skills (around 1%-2%)
- The percentage of job postings requiring lawtech skills is much higher in non-lawyer jobs, in both sectors
- The regulated and unregulated sectors have similar shares of jobs requiring lawtech skills
- There is an upward trend in the percentage of non-lawyer job postings requiring lawtech skills (rising to 15%)

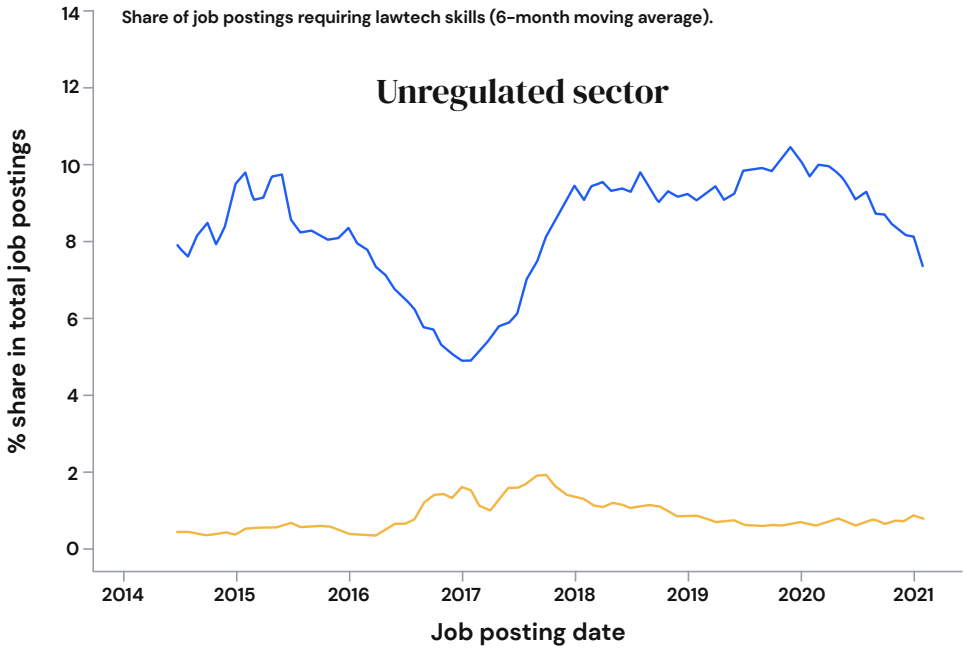
Job Type Non-lawyers Lawyers

Source: Author's calculations of 2021 Burning Glass data for: United Kingdom (2007 SIC '69.10', '69.10/2', '69.10/9', '69.1', '69.10/1', Lawyer Jobs -SOC '2413.0', '2412.0'))

Figure 3.13b: Comparing lawtech skills in jobs for legal professionals vs non-lawyers, in regulated and unregulated sectors in the UK



Note: legal professionals include solicitors, barristers and judges, plus paralegals and legal secretaries.



Key findings:

- In both sectors, legal professionals have a low share of job postings asking for lawtech skills (around 1%-2%)
- The percentage of job postings asking for lawtech skills is much higher in non-lawyer jobs, in both sectors
- The regulated and unregulated sectors have similar shares of jobs asking for lawtech skills

Job Type

Non-lawyers Legal professionals

Source: Author's calculations of 2021 Burning Glass data for: United Kingdom (2007 SIC '69.10', '69.10/2', '69.10/9', '69.1', '69.10/1', Lawyer Jobs -SOC '2413.0', '2412.0', '3520.0', '2419.0', '4212.0')

Comparisons with the United States

The Burning Glass database enables us to make comparisons between the UK and the US along a number of dimensions including geographic locations of job ads and types of occupation. Lawyers in the US are defined as those who are admitted to the bar, and therefore authorised to practice law. However, the US legal sector does not have the UK equivalent of a distinction between the SRA-regulated and unregulated sectors. We are also able to investigate whether or not lawtech skills command a salary premium in the UK and the US.

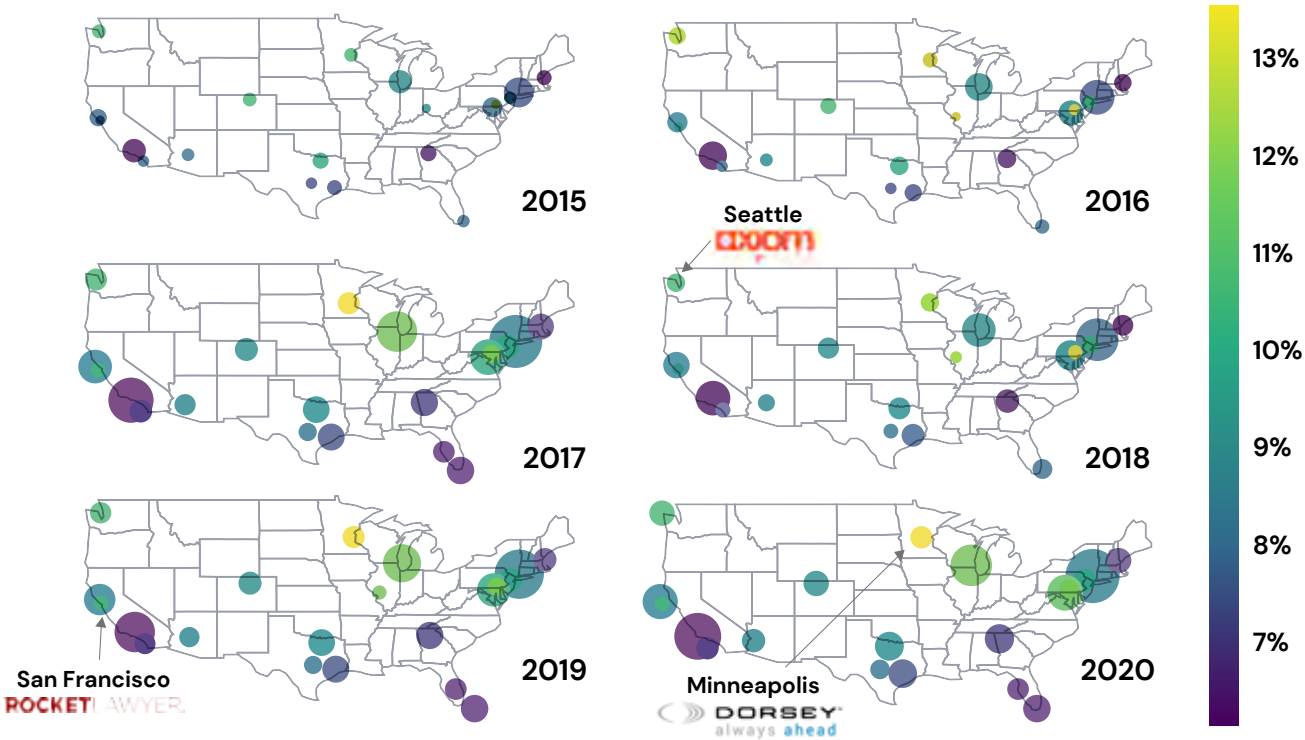
Geographic locations

The geographic distribution of job postings in the US legal sector is marked by legal services clusters in large cities such as New York City and Chicago (see Figure 3.14). Not surprisingly, San Francisco is marked with large bubbles (indicating large total numbers of job postings) and paler green colour (indicating a high share of lawtech skills in jobs). In terms of the share of legal sector jobs with lawtech skills, Minneapolis, which turns from green to yellow by 2017, has the highest concentration at 13.5%, followed by Baltimore (12.2%), Chicago (12.0%), Seattle (11.7%), Washington DC (11.6%), and Palo Alto (11.3%). These are locations with a good supply of technology skills, and are not necessarily large hubs of legal activity, except for Chicago and Washington DC.

More job postings for non-lawyers than lawyers

As in the UK, there are more job postings for non-lawyers than for lawyers (see Figure 3.15). In the US, there is also a distinct time trend, with an increase in the number of job postings since 2018. Non-lawyer job postings have seen a particularly strong growth, of course reversed by COVID-19 in 2020. But unlike in the UK, where non-lawyer jobs were hit harder than lawyer jobs, COVID-19 led to a decline in job postings for both lawyers and non-lawyers in a more even-handed manner.[16]

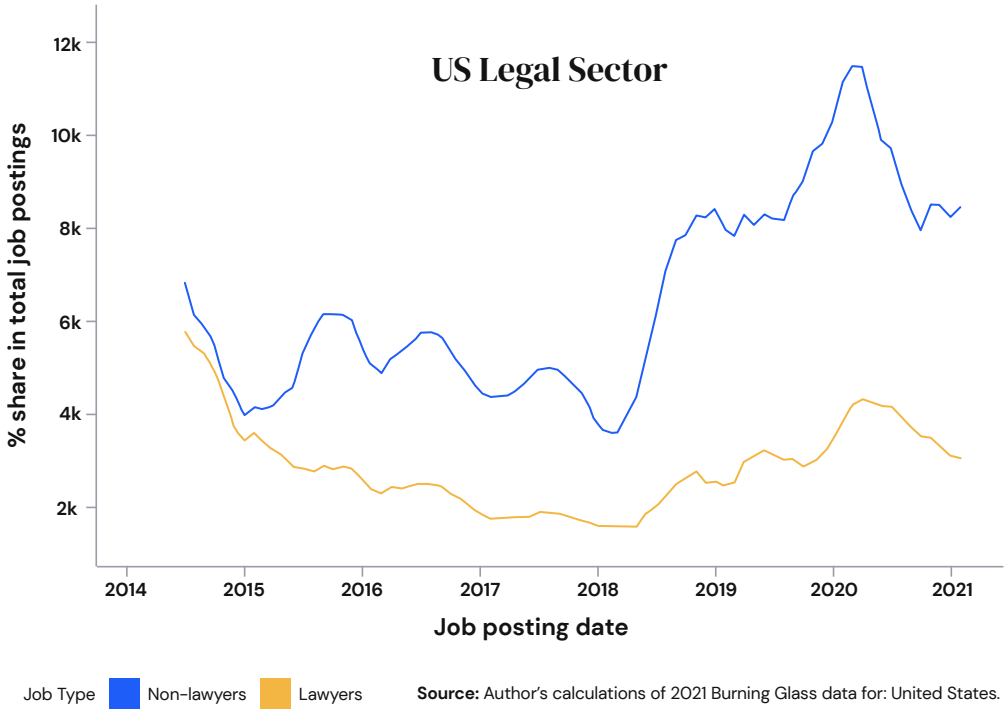
Figure 3.14: Locations of job postings with lawtech skills in the United States



Note: Size of the bubbles: number of job postings per city (top 20 cities by job postings). Colour scale: share of jobs with lawtech skills.

16 Burning Glass database does not collect data on remote working or working from home in the US.

Figure 3.15: Job postings for lawyers and non-lawyers in the US legal sector



Source: Author's calculations of 2021 Burning Glass data for: United States.

Note: The graph shows the number of monthly job postings by job type (6-month moving average).

Key findings:

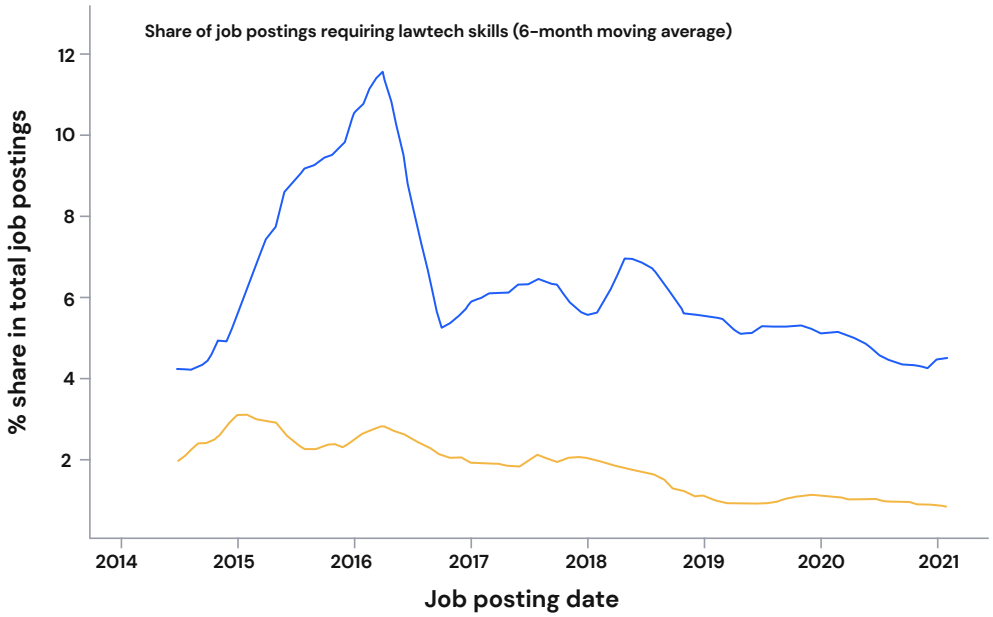
- Total job postings in the legal sector start increasing in 2018
- Lawyers have a smaller share of job postings in the market
- The pandemic decreased job postings for both lawyers and non-lawyers

Share of lawtech skills for lawyers and non-lawyers

In the US, the proportion of job postings specifying lawtech skills differs for different occupations, as in the UK. But the manner in which they differ varies from the UK. In the US, the proportion of job postings for lawyers (ie attorneys who are authorised to practice law) with lawtech skills is quite low - 2-3% (see Figure 3.16a) - not so different from the 1-2% in the UK (see Figure 3.13a). However, when we look at a broader category of legal professionals (ie lawyers as defined above, plus paralegals and legal assistants), the share of jobs with lawtech skills is considerably higher at around 5%, peaking to 8% in 2016 (see Figure 3.16b). This proportion was higher for legal professional jobs than for other jobs up until 2017. Thus, we can conclude that, until recently, US paralegals and legal assistants were asked to demonstrate lawtech skills at a level similar to others who had no legal expertise. This is in contrast to the UK, where paralegals and legal assistants were just as unlikely to be asked to demonstrate lawtech skills as lawyers (solicitors, barristers, and judges) (see Figure 3.16b).

Figure 3.16: Job posting with lawtech skills, for lawyers and non-lawyers in the US

3.16a: Using a narrow definition of 'lawyers'

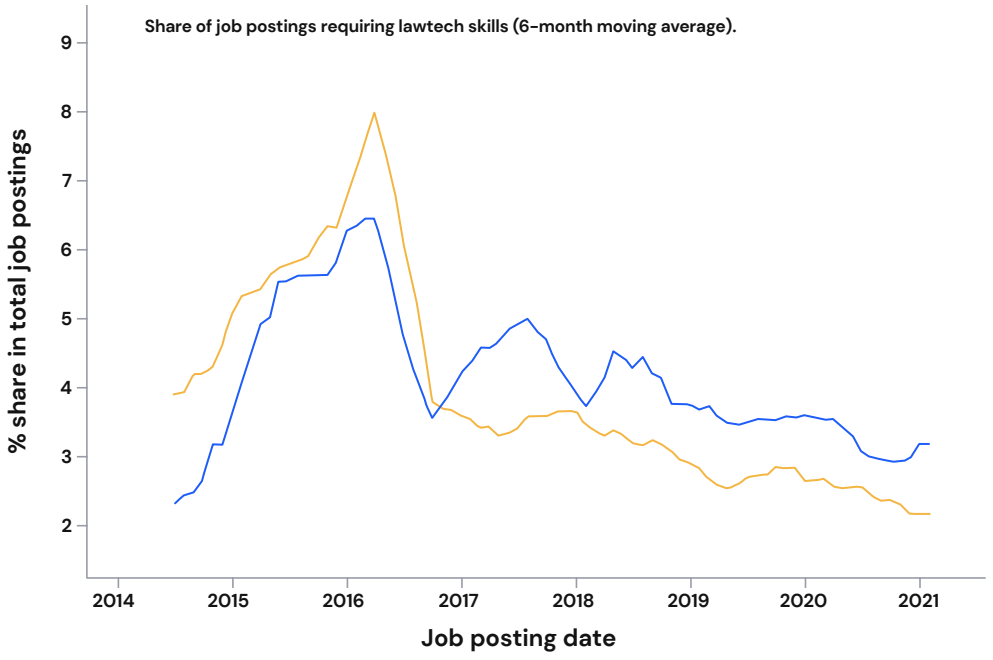


Source: Author's calculations of 2021 Burning Glass data for: United States.

Key findings:

- Share of lawyer job ads with lawtech skills are somewhat higher - 2-3%, but not considerably higher than 1-2% in the UK
- Share of non-lawyer job ads with lawtech skills is also similar in the US and the UK - less than 10%, though with a downward trend in the US

3.16b: Using a broader definition of 'legal professionals'



Source: Author's calculations of 2021 Burning Glass data for: United States.

Key findings:

- Share of job ads for legal professionals with lawtech skills are considerably higher than in the UK - up to 8% in 2016
- The share of job ads with lawtech skills is lower for legal professionals than for non-lawyers since 2017. Before 2017 it was the opposite

Comparing pay premia for lawtech skills

The last UK-US comparison is over the question of whether or not lawtech skills command a pay premium. We address this question by examining legal job postings by occupational classification and by job title.

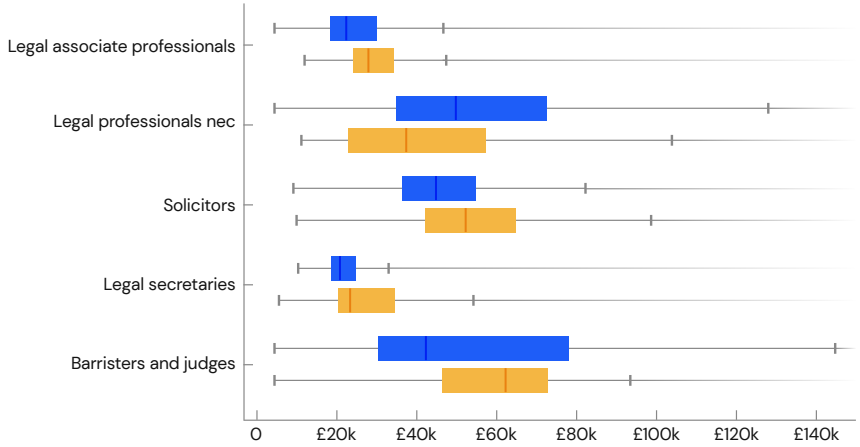
In the UK, legal professionals, as defined by standard occupations categories (SOC), command pay premia for jobs requiring lawtech skills compared to those that do not, except for legal professionals not elsewhere classified (see Figure 3.17). In particular, solicitors with lawtech skills would be paid £55,031 on average compared to £48,891 for solicitors without lawtech skills: a pay premium of 12.6%.

Pay premia exist by job title also. The largest premium for lawtech skills – £5,546 on average – is for paralegals; they are paid 25% more for having lawtech skills compared to if they applied for paralegal jobs without lawtech skills. This pattern indicates that in the UK legal sector, lawyers and other legal professionals are valued and rewarded for their knowledge of digital technology or data science.

The pattern is somewhat different in the US. As shown in Figure 3.18a, jobs requiring lawtech skills pay more on average than jobs not requiring lawtech skills, but this is not the case for lawyers and legal support workers. Using the O*NET occupational category, US lawyers with lawtech skills are paid $81,608 on average, compared to $101,172 for lawyers without lawtech skills, which amounts to a negative premium of $19,564.

Using job titles, attorneys with lawtech skills are paid $2,405 less on average than attorneys without lawtech skills. Similarly, litigation attorneys with lawtech skills are paid $10,155 less on average than litigation attorneys without lawtech skills. Further investigation is warranted in order to understand the reasons for this pattern. But one possible explanation may lie in tight professional control by the bar, which discounts lawtech skills as not being fully part of the professional knowledge base in the US. This empirical puzzle also sits alongside a rise in some law schools offering courses in data science, and a high level of venture capital investment into lawtech startups in the US (see Chapter 6).

Figure 3.17a: Pay premia for lawtech skills in the UK legal sector by occupation



Key findings:

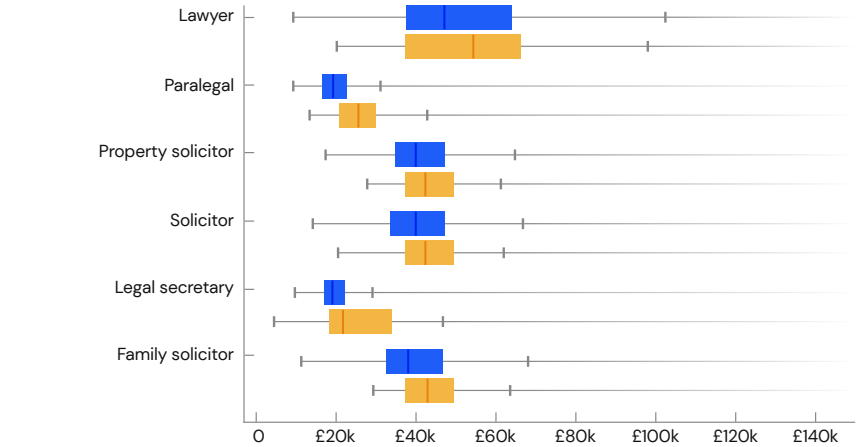
- Lawtech jobs pay, on average, more for all the SOC codes apart from legal professionals not elsewhere classified (nec)
- The biggest pay premium is for solicitors

Without lawtech skills
With lawtech skills

SOC Code	Lawtech sample (n)	Normal sample (n)	Mean Lawtech	Mean non-Lawtech	Difference
Legal associate professionals	1,406	69,421	£30,092	£25,866	£34,225
Legal professionals nec	216	21,938	£42,455	£55,149	-£12,694
Solicitors	2,017	235,156	£55,031	£48,891	£6,140
Legal secretaries	100	21,906	£27,593	£23,183	£4,410
Barristers and judges	21	53	£58,469	£55,588	£2,882

Source: Author's calculations of 2021 Burning Glass data for: United Kingdom (2007 SIC '69.10', '69.10/2', '69.10/9', '69.1', '69.10/1')

Figure 3.17b: Pay premia for lawtech skills for UK legal sector by job title



Key findings:

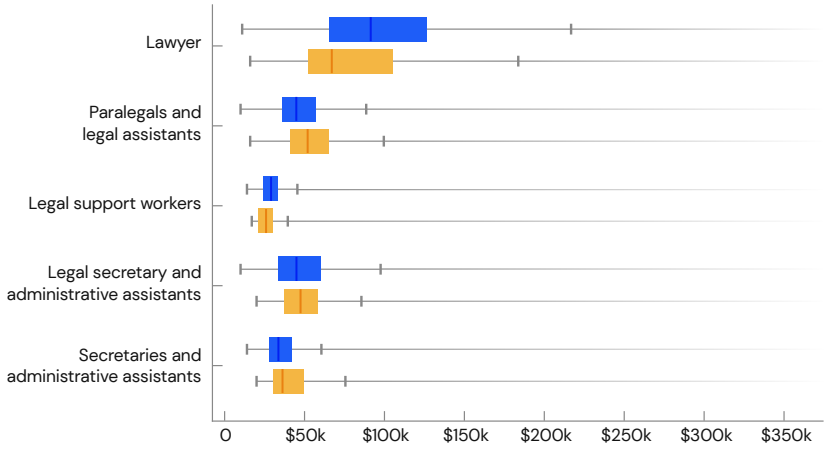
- Lawtech jobs pay, on average, more for all job titles
- The biggest pay premium is for paralegals

Without lawtech skills
With lawtech skills

Job Title	Lawtech sample (n)	Normal sample (n)	Mean Lawtech	Mean non-Lawtech	Difference
Lawyer	91	15,900	£15,900	£56,218	£1,631
Paralegals	178	15,006	£27,825	£22,279	£5,546
Property solicitor	67	22,126	£49,544	£44,806	£4,738
Solicitor	172	19,192	£45,394	£44,225	£1,169
Legal secretary	67	19,712	£27,005	£22,449	£4,556
Family solicitor	134	12,181	£48,410	£43,112	£5,298

Source: Author's calculations of 2021 Burning Glass data for: United Kingdom (2007 SIC '69.10', '69.10/2', '69.10/9', '69.1', '69.10/1')

Figure 3.18a: Pay premia for lawtech skill in the US legal sector by occupation



Key findings:

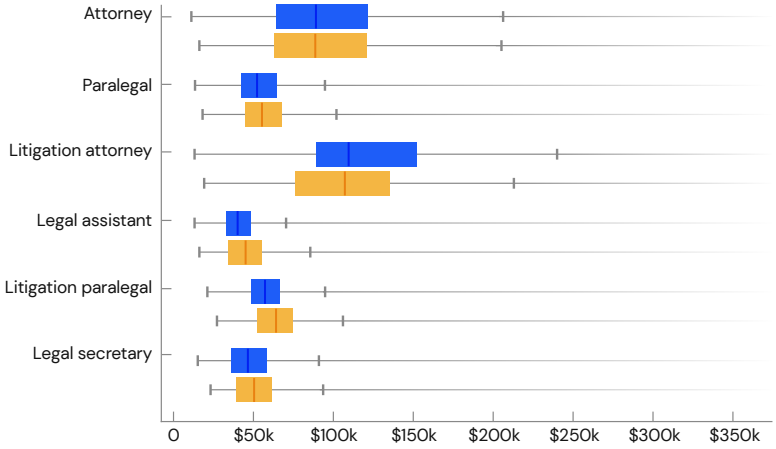
- Lawtech jobs pay, on average, more for all the O*NET occupations except for lawyers and legal support workers
- The biggest negative pay premium is for lawyers

Without lawtech skills
With lawtech skills

O*NET Occupation	Lawtech sample (n)	Normal sample (n)	Mean Lawtech	Mean non-Lawtech	Difference
Lawyers	3,672	41,767	$81,608	$101,172	$19,564
Paralegals and legal assistants	5,613	87,897	$54,578	$48,492	$6,085
Legal support workers	186	7,380	$28,497	$30,436	$1,939
Legal secretaries and administrative assistants	777	13,499	$48,550	$48,203	$347
Secretaries and administrative assistants	342	7,868	$42,972	$37,751	$5,221

No Lawtech Skills Lawtech Skills **Source:** Author's calculations of 2021 Burning Glass data for: United States

Figure 3.18b: Pay premia for lawtech skills in the US legal sector by job title



Key findings:

- Lawtech jobs pay, on average, more for all the job titles apart from for attorney and litigation attorney
- Lawtechskills lead to lower pay for litigation attorneys

Without lawtech skills
With lawtech skills

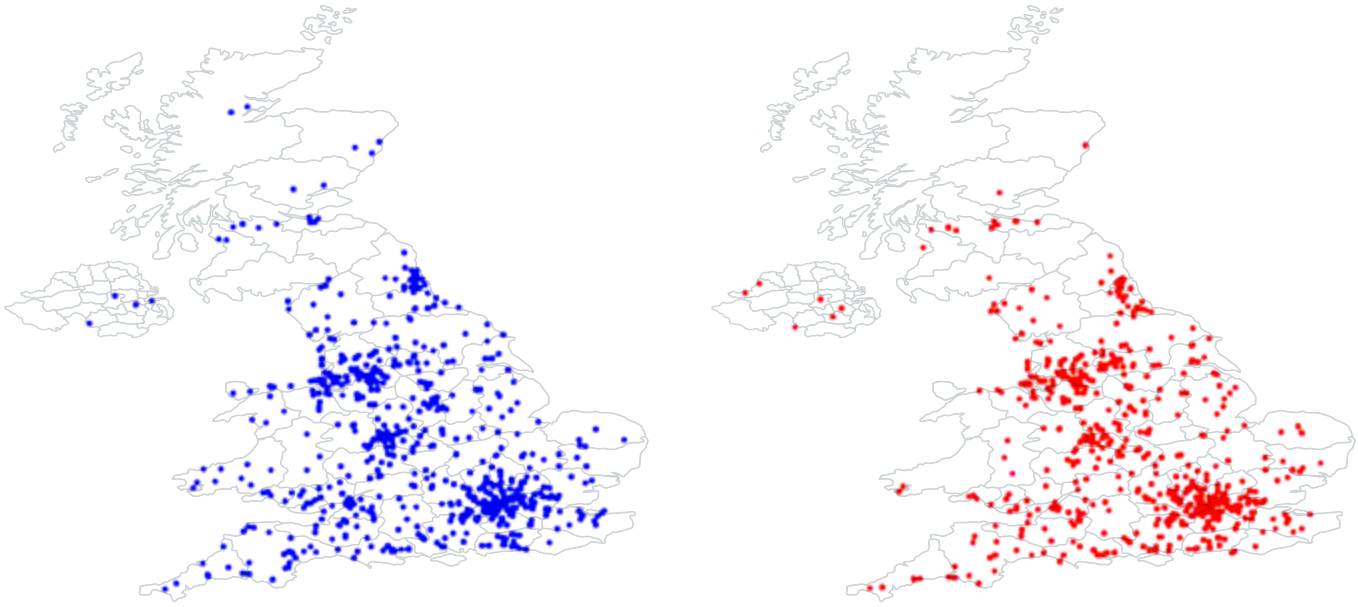
Job Title	Lawtech sample (n)	Normal sample (n)	Mean Lawtech	Mean non-Lawtech	Difference
Attorney	22,669	1,403	$89,405	$91,810	$2,405
Paralegal	28,159	2,584	$54,691	$51,612	$3,079
Litigation attorney	2,157	86	$102,538	$112,693	$10,155
Legal assistant	27,315	851	$43,615	$40,411	$3,204
Litigation paralegal	9,061	791	$60,892	$55,790	$5,102
Legal secretary	10,917	567	$48,391	$46,512	$1,879

Source: Author's calculations of 2021 Burning Glass data for: United States

Comparing job postings by ABS and non-ABS firms within the SRA-regulated sector

Lastly, we return to querying what is different about ABSs as compared to non-ABSs. We are able to address a number of questions using the Burning Glass database. First, where are job postings by the SRA-licensed ABS firms located in England and Wales? We show in Figure 3.19 that, judging from job postings, the location of ABSs have not changed much over time, comparing the two time periods 2012-15 and 2016-20. The wide geographic spread is a healthy sign of the availability of job opportunities in the legal sector across the country. Assuming that locations of job opportunities are correlated with locations of service delivery, ABSs appear not to have contributed as much to consolidation of the legal services market.[17] While consolidation brings benefits, it could also cause detriment to consumers wanting highly localised provision.

Figure 3.19: Locations of ABSs with online job postings in England and Wales over time



2012 - 2015 2016 - 2020

Note: There are some job postings by ABSs occurring in Scotland and Northern Ireland where ABS regulation does not exist. It is possible that this is due in part to remote working and related reasons.

Second, do ABSs have a greater proportion of non-lawyer job ads to total job ads than non-ABS firms? The answer is a resounding yes. Throughout the period of investigation (2014-20) using the Burning Glass data, ABS firms have, on average 58% of total job postings for non-lawyers, nearly twice as high as for SRA-regulated non-ABS firms. This result is expected, given that one of the primary reasons for establishing ABSs is to access non-legal talent.

Third, do ABS firms have more job ads with lawtech skills than non-ABS firms? The answer to this question is also yes. The proportion of job postings with lawtech skills has been quite low across all firms. But, within this low base, ABS firms are more than twice as likely to specify lawtech skills for non-lawyer jobs - at 7.2% of all non-lawyer job ads - as non-ABS firms, at 3.1% of all non-lawyer job ads. This is another indication of greater innovativeness among ABSs.

17 See for evidence on consolidation SRA (2014) Magnetic forces: Consolidation in the legal services market.

Lastly, do ABS firms pay a higher pay premium on average than non-ABS firms? Pay levels are on average lower at ABS firms than at non-ABS firms, and the pay premium for lawtech skills for non-lawyer jobs is just over £5,000 at both ABS and non-ABS firms. Thus, proportionately, lawtech skill premia are higher on average at non-ABS firms - 18% - than at non-ABS firms - 12%. The average salary for lawyers without lawtech skills is also lower at ABS firms (£32,838) than at non-ABS firms (£43,111). While non-ABS firms pay a small premium of £267 for lawtech skills, ABS firms actually pay £490 less for jobs with lawtech skills. This underpins the personnel principle that ABS firms rely on non-lawyers to source lawtech skills.

Section summary

The Burning Glass database analysis has its limitations. In particular, it allows us to look only at digital job ads without a full picture. We have no information on vacancies filled without digital advertising or without advertising at all. Moreover, there is no way to ascertain what proportion of the job postings actually lead to successful hiring. Notwithstanding these limitations, the analysis of the large-scale database for the 2014-20 period reveals the following patterns.

The SRA-regulated sector in the UK, as compared to the non-SRA sector:

- Is growing more slowly, at around a third of the pace, judging from the number of job postings for both lawyers and non-lawyers throughout the 2014-2021 period
- Has a similarly low proportion (1-2%) of lawyer jobs with lawtech skills
- Has a similarly higher proportion (5-15%) of non-lawyer job postings requiring lawtech skills.

Thus, one important finding from the Burning Glass database analysis is that proportionately, access to lawtech skills via lawyers or non-lawyers seems to be not all that different in the SRA-regulated sector compared to the legal sector not regulated by the SRA. Rather, it is the faster growth in employment in the non-SRA sector that enables this sector to better access lawtech skills compared to the SRA sector.

In other words, the lawtech skills share of the pie is the same in the SRA and non-SRA sectors, but the pie is getting bigger in the non-SRA sector relative to the SRA sector.

Within the SRA-regulated sector, ABS firms, as compared to non-ABS firms:

- Employ more non-lawyers relative to lawyers, judging from the number of job postings
- Have a greater proportion of non-lawyer job ads with lawtech skills
- Do not pay a higher premium for lawtech skills for lawyers.

These jobs aspects of ABSs provide a good explanation for the survey results - our online survey and prior studies - that ABSs are deemed to be more innovative and more likely to adopt legal technology. We will draw implications for what this means for the training and education of trainee solicitors and other associated professionals in Chapter 6.

Given that the legal sector which is not regulated by the SRA is growing around three times faster in terms of job postings than the SRA-regulated sector, it seems sensible to develop a better understanding of the unregulated sector.

3.3

Understanding the unregulated sector

Thus far, we treated the sector that is not regulated by the SRA as 'unregulated' to facilitate our analysis of the Burning Glass database. Obviously, this is not a wholly satisfactory approach.

For the overall purpose of this research, our starting point is the Legal Services Act (LSA) 2007, which provides an overarching framework for classifying providers of legal services into three categories:

- Those authorised and regulated by an approved regulator under the Act to provide legal activities.[18]
- Those that conduct specific legal activities that attract other forms of regulation such as immigration, insolvency and claims management.
- Those that provide legal activities outside of any form of legal services regulation.

Thus, a clear way of segmenting the legal services market already exists owing to the LSA, with a distinction between the LSA-regulated sector and the non-LSA unregulated sector. However, there are at least three reasons why we think that improvements are necessary to understand, or map, the unregulated sector. These reasons derive from demand characteristics, the supply of digital technology and data, and the nature of law and regulation.

First, before we can develop an understanding of the shape of the unregulated market, we need to define what is the scope of the market. But scoping is not an easy matter owing to the nature of demand. Consumers wish to access advice and services to resolve specific problems, and these problems tend to have a legal component and a non-legal component. Consequently, providers of integrated solutions for clients may straddle the legal sector and other sectors such as accounting, financial services, employment advice, and other types of advisory services. For financial services, there is a regulator in the form of the Financial Conduct Authority (FCA), but other services (e.g. human resource consultancy) would not have a sector-specific regulator. Thus, the alternative legal services market consists of providers that give housing advice (e.g. charities and local authority housing departments), employment advice (a HR company, trade union or insurance company), advice on house sales/purchase (by estate agents), insolvency advice, debt management, advice on funeral planning linked to will writing and probate matters, and advice on a diverse range of areas including health and social care, immigration, and asylum, which are given by the Citizens Advice Bureau or by law students in university law clinics.[19] Providers therefore straddle the legal services market by giving legal and non-legal advice.

Second, focusing on the supply of digital technology: technology more often than not is industry agnostic, with cross-sector use cases. Some technology suppliers provide an infrastructure such as cloud storage, cloud computing services such as Amazon Web Services (AWS) and Microsoft Azure, and standard software packages such as Microsoft Office.

18 The approved regulators include the Solicitors Regulation Authority, Bar Standards Board, Chartered Legal Executives (Cilex), Intellectual Property Board, Costs Lawyers Standards Board, Master of the Faculties, and the Institute of Chartered Accountants in England and Wales.
19 Solicitors Regulation Authority (2019) The Changing Legal Services Market.

Others provide software tools for customer relationship management (CRM) or for document analytics that have use cases in legal and non-legal sectors. Yet others provide platforms that enable matching demand and supply of lawyers, paralegals, and other personnel. Thus, many technology and data providers do not respect the boundary of the legal services sector. Our approach to mapping the unregulated sector is to be cognizant of these 'bridge providers' that straddle market boundaries, whether they are defined by demand or supply.

Third, we need to make explicit the distinction between general law and sector-specific regulation. Of course, all businesses have always been subject to compliance with relevant legislation including consumer law, data protection, and anti-money laundering. However, with the advent of digital technology, including artificial intelligence (AI), the salience of such general law has increased owing to privacy concerns in handling personal data, and the ethics of applying AI.

In order to take account of the above concerns, we suggest a way to consider mapping the unregulated sector with the following layers of law and regulation in mind. Figure 3.20 illustrates this mode of thinking and is not intended to be exhaustive. Our starting point is the top right in the diagram, with the LSA-regulated legal sector. The unregulated legal sector (ie not regulated by the LSA via one of the approved regulators) would include a variety of providers, including but not limited to:

- **Providers of services that include a legal advisory component**, such as housing advice, employment advice, advice on house sales/purchase, insolvency advice, debt management, financial and tax advice, advice on funeral planning linked to will writing and probate matters, health and social care, immigration, and asylum.

- **Providers of digital technology with a legal client base**, some of which specialise in serving the legal sector (providing legal project management tools, legal matter management tools, legal contract analytics tools, or platforms for on-demand lawyers and paralegals), and others that serve clients in the legal sector and beyond (providing contract analytics for financial and legal sectors, tools for electronic agreements including e-signature, customer relationship management software, cloud computing services, etc.).

Some providers may use digital technology to deliver services, thus creating an overlap between the two types of provider explained above. Many of them are young ventures, founded in the last decade by entrepreneurs who may be licensed lawyers, technologists, or with other expertise. Chapter 5 maps out the size and shape of this unregulated sector of lawtech startups in the UK and the US.

From the perspective of LSA-approved regulators such as the Solicitors Regulation Authority, the unregulated sector takes on a slightly different meaning once law and regulation beyond the Legal Services Act 2007 are taken into account.

The top row in Figure 3.20 focuses on sector-based regulation. At this level, the unregulated sector is the sector that is not subject to sector-specific regulation. Thus, if an unregulated service provider (ie not licensed by an LSA-approved regulator) is regulated, for instance, by the Financial Conduct Authority, the unregulated sector shrinks to exclude such a provider.

The second row in the Figure focuses on general law on specific issues, including but not limited to data protection, competition policy, consumer protection, and anti-money laundering. General law is embedded in aspects of LSA-approved regulators' regulatory guidance and compliance rules. Moreover, the LSA regulators are subject to carrying out the remit of reviews by the national issue-based regulators, as is the case with the Competition and Markets Authority (CMA)'s review of legal services.[20] To the extent that providers in the unregulated sector are subject to compliance in general law, it reduces the likelihood of unregulated providers causing consumer harm or other detriment.

20 Competition and Markets Authority (2020) Review of the Legal Services Study in England and Wales, December.

The third row on standard setting, with the British Standards Institution (BSI), Britain's national standard-setting body, is relevant to the unregulated sector to the extent that its technical standards and certification enhance consumers' information and trust in products and services. If consumer harm is a potential worry in the unregulated legal sector, BSI could play a role in enhancing both competition and consumer protection.

Another government action that enhances standard-setting and, consequently, technology adoption by legal service providers, takes the form of government-initiated portals. A notable example is the Official Injury Claims portal (a service operated on behalf of the Ministry of Justice), which enables citizens to claim for personal injury arising from road accidents free without legal help. Thus, technology standards from within the private sector, with providers of technology infrastructure (such as cloud computing services) and data providers taking a lead, are complemented by government standard-setting.

Chapter 6 returns to considering implications for regulation and policy to be applied to the unregulated sector, after an investigation of providers of unmet legal needs (in Chapter 4) and of lawtech startups (in Chapter 5).

Figure 3.20: Layers of law, regulation, and standards

Appendix to Chapter 3

About Burning Glass Technologies database

Burning Glass Technologies, an analytics software company, scrapes job postings from the internet. Every day, the firm checks a corpus of more than 40,000 online job boards and company webpages to find new job vacancies. Burning Glass then parses and deduplicates the job vacancies into a machine-readable form. This process extracts up to 70 standardised fields from vacancies, including occupation, geography, skill requirement, firm identifier and salaries.

The broad coverage of the database represents a significant improvement over single source databases, such as Reed.co.uk or the Labour Force Survey. But a notable shortcoming is the exclusion of non-online vacancies, and the share of jobs advertised online changes over time, with the corpus of job boards and company webpages that the firm collects data from also varying over time. Notwithstanding such shortcomings, we are able to count the number of online job vacancies advertised since 2010 in the United States and since 2012 in the United Kingdom for legal occupations and the legal sector.

Methodology for extracting job postings in the legal sector and legal occupations

We extracted nearly 900,000 job ads in the legal sector in the UK and a similar number in the US during 2014-2020. This method relies on both industry classifications and occupational classifications.

In the UK, with respect to industry, we filtered for the relevant Standard Industry Classification (SIC) Code 69.1 (legal activities sector). The following Standard Occupational Classification (SOC) codes are included:

- Code 69101: Barristers at law
- Code 69102: Solicitors
- Code 69109: Activities of patent and copyright agents; other legal activities nec

With respect to occupations, the following Standard Occupational Codes (SOC) are included for classifying lawyers:

- SOC 2413: Solicitors
- SOC 2412: Barrister and judges

There are other legal and non-lawyer occupations within the SIC 69.1 industry sector, as shown below.

Job Postings by Year

Year	Count of job postings	% of total
2014	104,456	12%
2015	131,598	15%
2016	121,780	14%
2017	139,523	16%
2018	156,068	18%
2019	123,568	14%
2020	114,637	13%
Total	**891,630**	**100%**

Job Postings by SOC Code

SOC Code Job	Count of job postings	% of total
Solicitors, Barristers and Judges	426,267	48%
Legal Associate Professionals	117,983	13%
Legal Professionals nec	42,579	5%
Legal Secretaries	34,693	4%
Other Administrative Occupations	12,445	1%
Others	257,663	29%
Total	**891,630**	**100%**

Note: Lawyers = solicitors, barristers and judges; non-lawyers = all other SOC categories

For the US, with respect to industry, we filtered for the relevant North American Industry Classifications (NAICS) Codes:

- Code 5411: Legal Services
- Code 541110: Offices of Lawyers
- Code 541199: Other Legal Services
- Code 541191: Title Abstract and Settlement Offices

With respect to occupations, we use the following O*NET codes to determine lawyers:

- Code 231011: Lawyers
- Code 231023: Judges

There are other legal and non-legal professionals in the legal sector as follows.

Job Postings by Year		
Year	Count of job postings	% of total
2014	120,011	15%
2015	96,988	12%
2016	87,567	11%
2017	73,259	9%
2018	110,010	14%
2019	150,231	19%
2020	151,204	19%
Total	**789,270**	**100%**

Job Postings by O*NET Code		
O*NET Code Job	Count of job postings	% of total
Lawyers and Judges	244,884	31%
Paralegals and Legal Assistants	229,306	29%
Legal Secretaries	39,800	5%
Secretaries and Admin. Assistants	17,407	2%
Receptionist and Information Clerk	13,763	2%
Others	244,110	31%
Total	**789,270**	**100%**

Note: Lawyers = lawyers and judges; non-lawyers = all other O*NET categories.

List of key words used to classify lawtech skills in job ads

We identify lawtech skills in job posting by searching the job ad text for key words which indicate digital skills. The full list of words used is provided below.

"artificial intelligence" "AI" "machine learning" "deep learning" "data science" "data scientist" "accountant engineer" "accountancy engineering" "accountancy tech" "accountancytech" "natural language processing" "NLP" "semantic analysis" "decision tree" "document analysis" "document review" "contract intelligence" "case prediction" "neural networks" "neural nets" "full stack" "developer" "automate" "API" "data architecture" "micro-services architecture" "technology stack" "DevOps" "Net Core" "Docker" "Kubernetes" "Azure Cloud" "Chef" "Java" "Python" "Angular" "coding" "testing" "deployment" "Agile Kanban" "RESTful API" "SOA" ".NET" "JavaScript" "C#" "SQL" "continuous integration" "test automation" "automated configuration" "relational database" "non-relational database" "SOAP" "REST" "software design" "data extraction" "data visualisation" "data visualization" "workflow" "rules based analysis" "Margin Matrix" "technology" "technologies" "tech" "material efficiencies" "document management system" "3E" "Epic" "Peoplesoft" "data mining" "data modelling" "artificial intelligence technologies" "data collection plan" "structured data" "structured sources" "unstructured data" "unstructured sources" "data exploration" "hypothesis testing" "statistical modelling" "data analysis" "POCs" "data cleaning" "statistical analysis" "algorithm" "algorithms" "algorithm development" "tableau" "SAS" "big data" "sql server reporting services (ssrs)" "data warehousing" "teradata dba" "transact-sql" "microsoft sql server integration services (ssis)" "microsoft sql" "microsoft c#" ".net" "asp.net" "asp.net mvc" "active server pages (asp)" "statistical analysis" "statistics" "statistical reporting" "microsoft powershell" "data verification" "relational databases" "software engineering" "software development" "system design" "hypertext preprocessor (php)" "sap" "web application development" "nunit" "kanban" "scrum" "c++" "linux" "sql server" "hardware and software installation" "enterprise resource planning (erp)" "cognos impromptu" "microsoft sharepoint" "visual studio" "microsoft active directory" "data manipulation" "data management" "data quality" "metadata" "database design" "data collection" "extensible markup language (xml)" "object-oriented analysis and design (ooad)".