

Augmented Lawyering

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Business Law Workshop, 29 April 2020



**INDUSTRIAL
STRATEGY**

UK Research
and Innovation





I. Introduction

How will new technologies such as AI reshape the work of lawyers and the legal profession?

“[T]here is no obvious reason that many of today’s professionals won’t be displaced by increasingly capable systems and then fade from prominence, much as blacksmiths, tallow chandlers, mercers, and many trades became redundant in their day.” (Susskind, 2018)

“Even where automation has made significant progress, its impact has been less than the headlines would have us believe.” (Remus & Levy, 2017)



Mixed Methods

■ Qualitative

- 50+ semi-structured interviews with professionals involved in implementing, or overseeing the implementation, of AI in legal services in the UK (Jan 2019-May 2020)
- Grouped mainly in 12 organisational case studies – law firms, corporate clients, “alternative legal service providers” (ALSPs) (lawtech startups, ABS, big four, law companies etc)

■ Quantitative

- Anonymous survey of practising solicitors in England & Wales, run in conjunction with the Law Society (Dec 2019-Jan 2020)
- Distributed to >10,000 lawyers; 353 valid responses (3.5% response rate)

II. AI in Legal Services

III. AI Deployment and Organizational Form

IV. Quantitative Results

V. Implications for Law Firms and the Legal Profession

VI. Conclusions



II. AI in Legal Services



II.A Augmented lawyering



Impact of technology on work

- Technology has two effects
 - **Substitution**: technology *replaces* humans in some tasks
 - **Complements**: technology *augments* humans in some tasks
- Impact on workers/firms
 - Value of substitutable human capital goes down
 - Value of complementary human capital goes up



Which tasks are which? Impact of today's AI

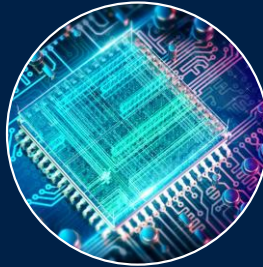
- Early 2000s: 'routine' (can be performed using an explicit set of rules) vs 'non-routine' (complex problem-solving)
 - “Navigating a car through city traffic or deciphering the scrawled handwriting on a personal check – minor undertakings for most adults – are not routine tasks by our definition. ... these tasks require visual and motor processing capabilities that cannot at present be described in terms of a set of programmable rules.” (Autor et al, 2003)
- Today: Machine learning means rules need not be written; just provide (lots of) relevant data
 - “[F]or the work of lawyers to be fully automated, engineering bottlenecks to **creative and social intelligence** will need to be overcome, implying that the computerisation of legal research will complement the work of lawyers in the medium term” (Frey and Osborne, 2017).



Applied to legal services...



Complements:
traditional client
advice; one-
off/bespoke text-
based work



Substituted:
repetitive /
scalable text-
based work



New roles
needed to make
technical systems
work:
Complements

Traditional

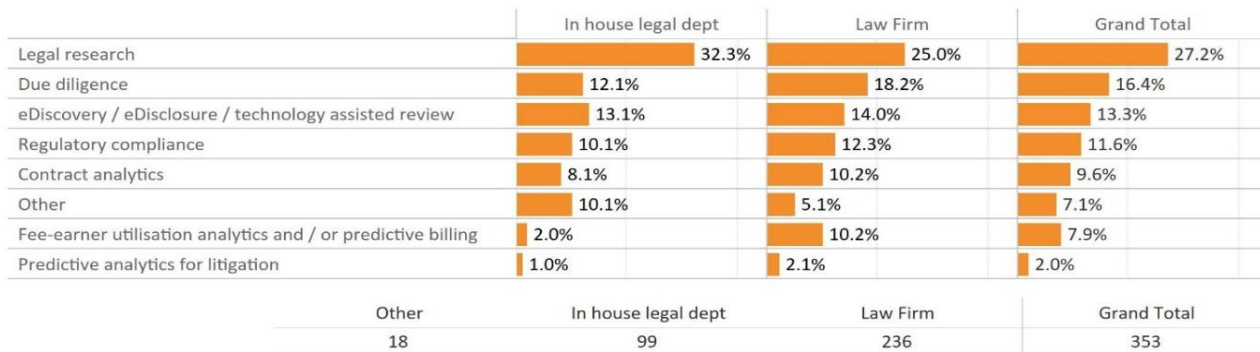
Novel



II.B AI use-cases in law

Survey Results: AI use-cases

Figure 4: Use of AI-assisted legal technology, by organisation type



*'Grand Total' includes all complete responses, including from respondents working at ABS and legal technology solutions providers.



AI use-cases (1): contracts

- Contract analytics (e.g. ThoughtRiver, RAVN)
 - Increase speed/reduce cost of generating and reviewing “business as usual” commercial contracts according to firm/context-specific “playbook”.
- Due diligence (e.g. Luminance, Kira)
 - Increase speed/reduce cost of reviewing large corpuses of contracts prior to an acquisition.



AI use-cases (2): disputes

- E-discovery (e.g. Epiq, Casepoint, OpenText)
 - Identify material relevant to a legal dispute that must be disclosed to the other side prior to proceedings.
 - ML model is trained for each new matter; particularly heavily used in US where discovery represents 70% of costs of litigation.
- Litigation analytics (e.g. Solomonik, Legal Analytics)
 - Predict outcome of dispute based on facts, prior precedents, decision history of judge, lawyers, etc {+ any other variables increasing predictive accuracy}
 - Increasingly available in US, also emerging in UK



AI use-cases (3): “business of law”

- Predictive billing
 - Accurate prediction of likely time input required to complete work – enabling piece rate pricing
- Capacity management
 - Predicting utilisation and optimising resourcing accordingly



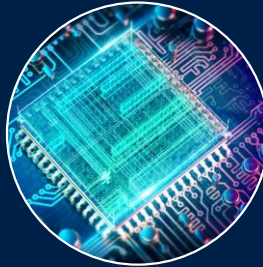
II.C Multidisciplinary teams



How do the pieces fit together?



Complements:
traditional client
advice; one-
off/bespoke text-
based work



Substituted:
repetitive /
scalable text-
based work



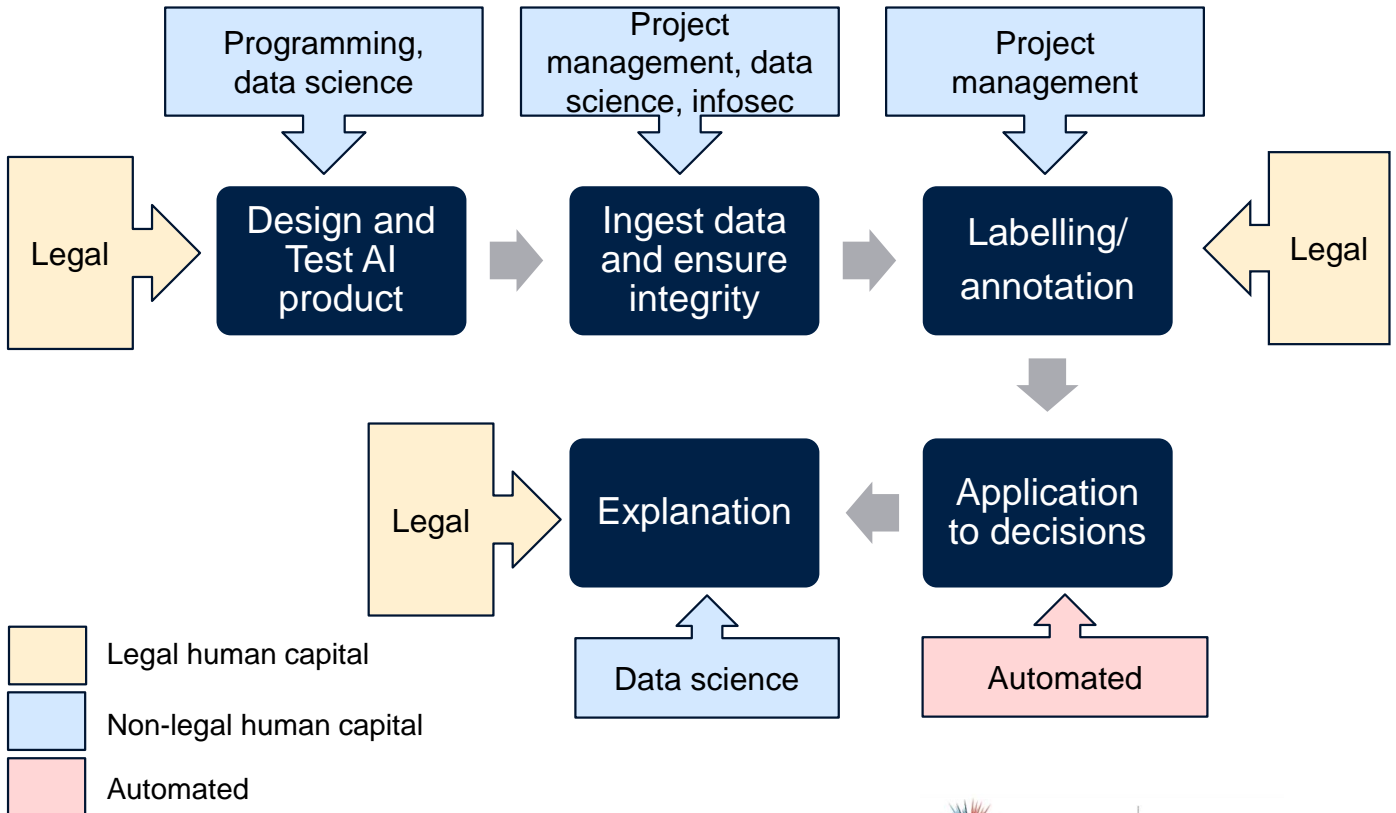
New roles
needed to make
technical systems
work:
Complements

Traditional

Novel



AI legal services pipeline



Interviewee perspective (1)

“The new business units in legal services businesses are going to have to look a lot more like business units in other modern non-legal businesses, that combine the skills of the truly vocational, in other words the lawyer, of which you need fewer and fewer I think over time, ... that combines those skills with a raft of other skills, including process skills, service transition skills, management information skills, and service management skills.” (Law firm interviewee)



Interviewee perspective (2)

“I think that .. the ‘death of the lawyer’ as an advisor is over-stated or prematurely predicted. But, in a managed services unit, you’re going to see a much different blend of people, who are qualified lawyers, other types of fee-earners, and a whole range of people used to delivering business processes efficiently, that ... you’d recognise if you walked into any... pharmaceuticals company, say, or retail[er] . If you went to a retailer, ... in the ... Buying Department, you wouldn’t just find buyers, you’d find a load of people who know how to run a buying function. Whereas, in our Real Estate Department, you’ve just got real estate lawyers...” (Law firm interviewee)

Hypothesis 1

- Successful deployment of (AI-based) lawtech is associated with assembly of multi-disciplinary teams (MDTs)



III. AI Deployment and Organizational Form



III.A Theory

Organizational complements

	Professional Partnership	Company
Decision-making	Decentralised, consensus-based	Centralised, managerial
Ownership	Partners (lawyers)	Outside investors and employees
Recruitment, retention and motivation	Works well for lawyers	Works well for multidisciplinary teams
Outside finance	Debt only	Debt and Equity

Interviewee perspective (3)

“We’re obviously a very good firm, with a good brand name associated, but in terms of access to young talent, in the software space, they normally don’t want to join a [traditional] law firm – they want to go and work for a cool software company.” (Law firm interviewee)

Interviewee perspective (4)

“I think it’s going to have to change, ... the distinction between the fee-earners and non-fee-earners, because I think people in pure technology roles, who have never ... qualified as a lawyer, who are working on a solution that helps deliver a matter, are contributing to the revenue of the firm directly.” (Law firm interviewee)



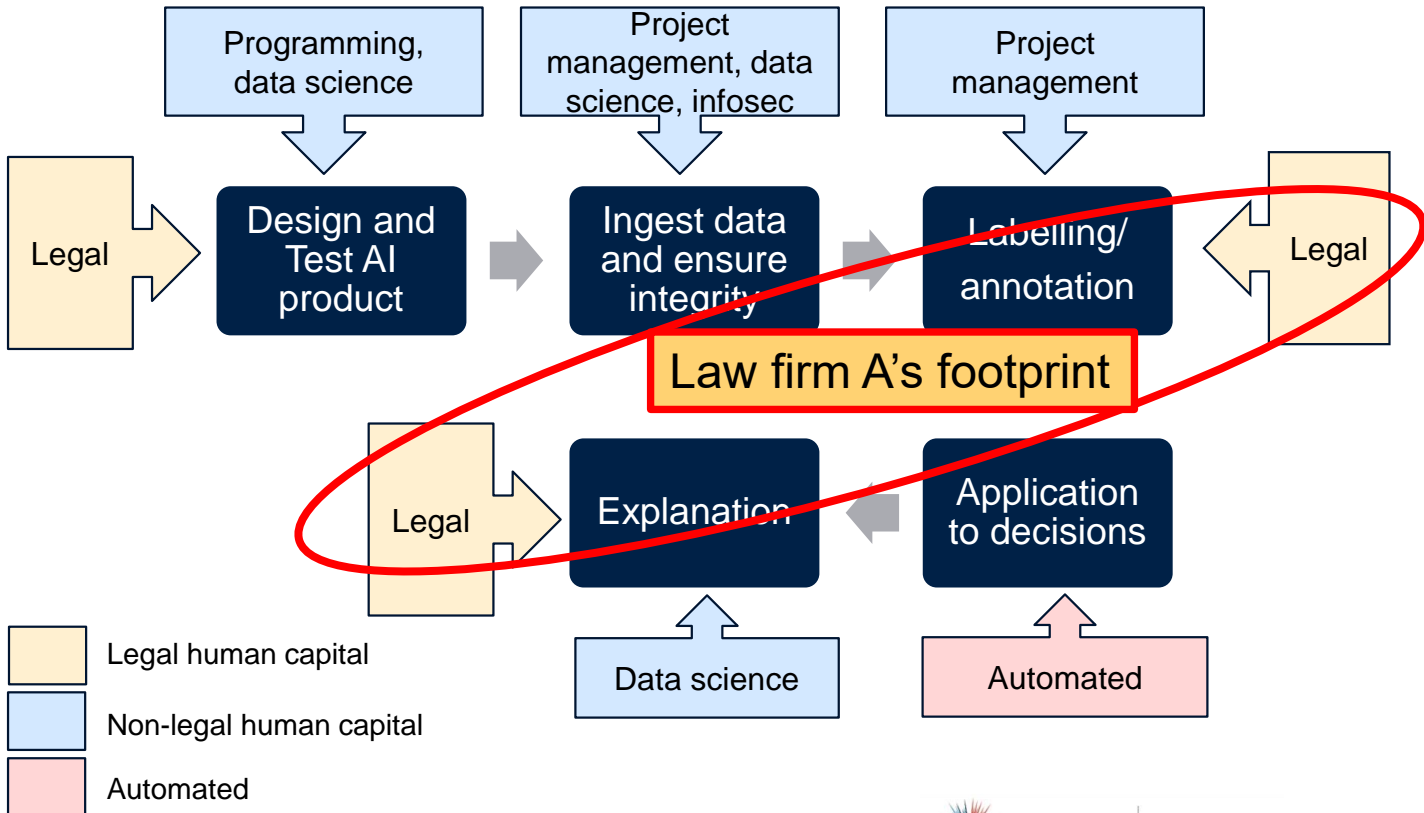
III.B Case study evidence



Case study 1: Law firm A

- Deploys AI in due diligence for M&A transactions
 - Licenses AI platform from vendor: capital costs minimised
 - A's personnel train the AI models: legal human capital
 - Non-legal human capital for MDT is largely sourced *outside* the organisation (from the vendor)
- Recruitment, retention and motivation of non-lawyers within law firm org structure is problematic
 - ⇒ MDT deployment requires coordination between lawyers employed by law firm and technical staff employed by vendor.

A's footprint



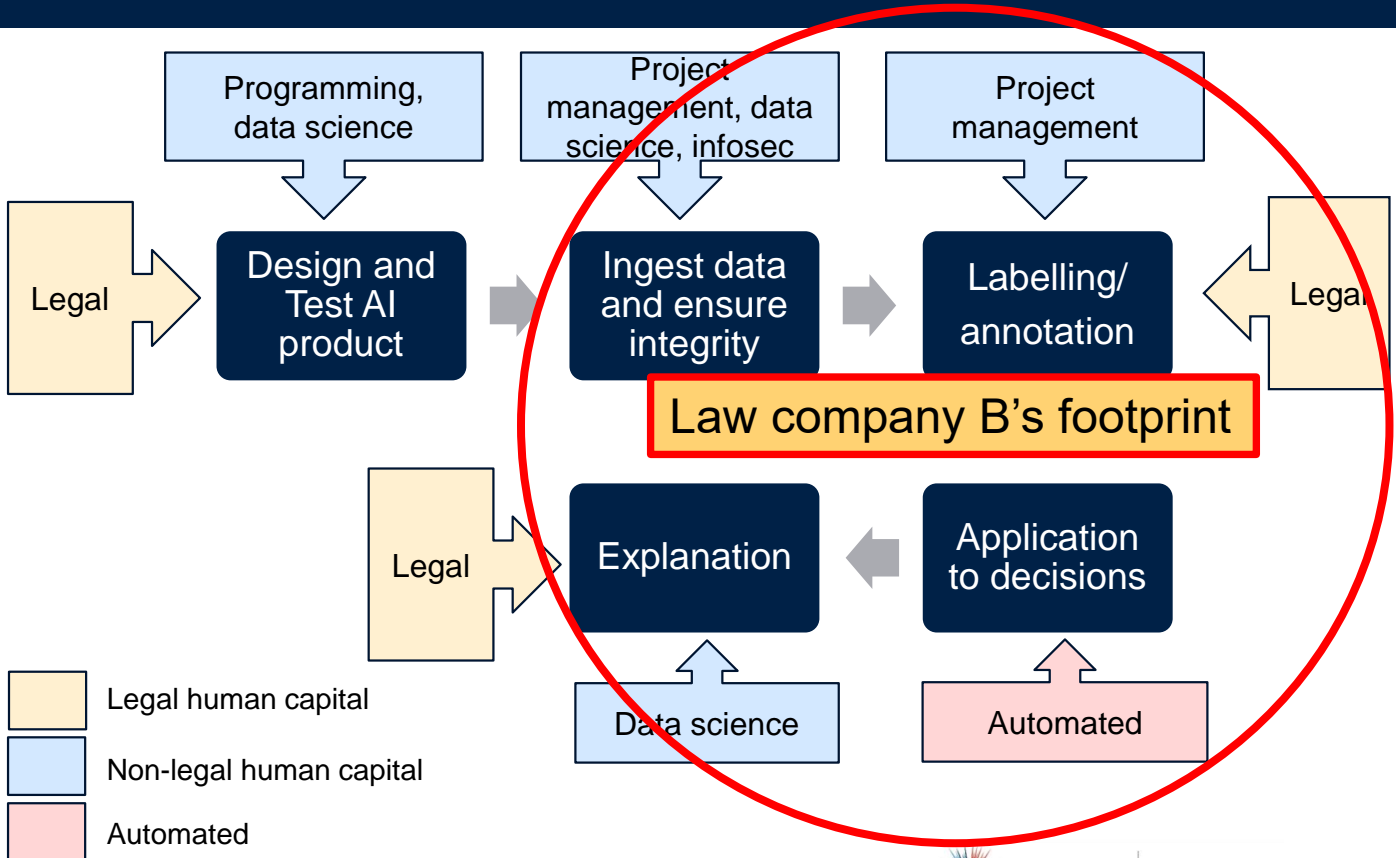


Case study 2: Law company B

- Deploys AI and other technologies in providing legal operations support to law firms and corporate clients
 - Licenses technology platforms from vendors but employs all relevant non-legal human capital for *deployment*
 - Assembles teams to work for clients, all personnel employed by B (lawyers moved from client to B)
- Recruitment, retention and motivation of non-lawyers within corporate org structure
 - B raises outside capital and commits to invest in technology
 - Employees offered equity in B



B's footprint



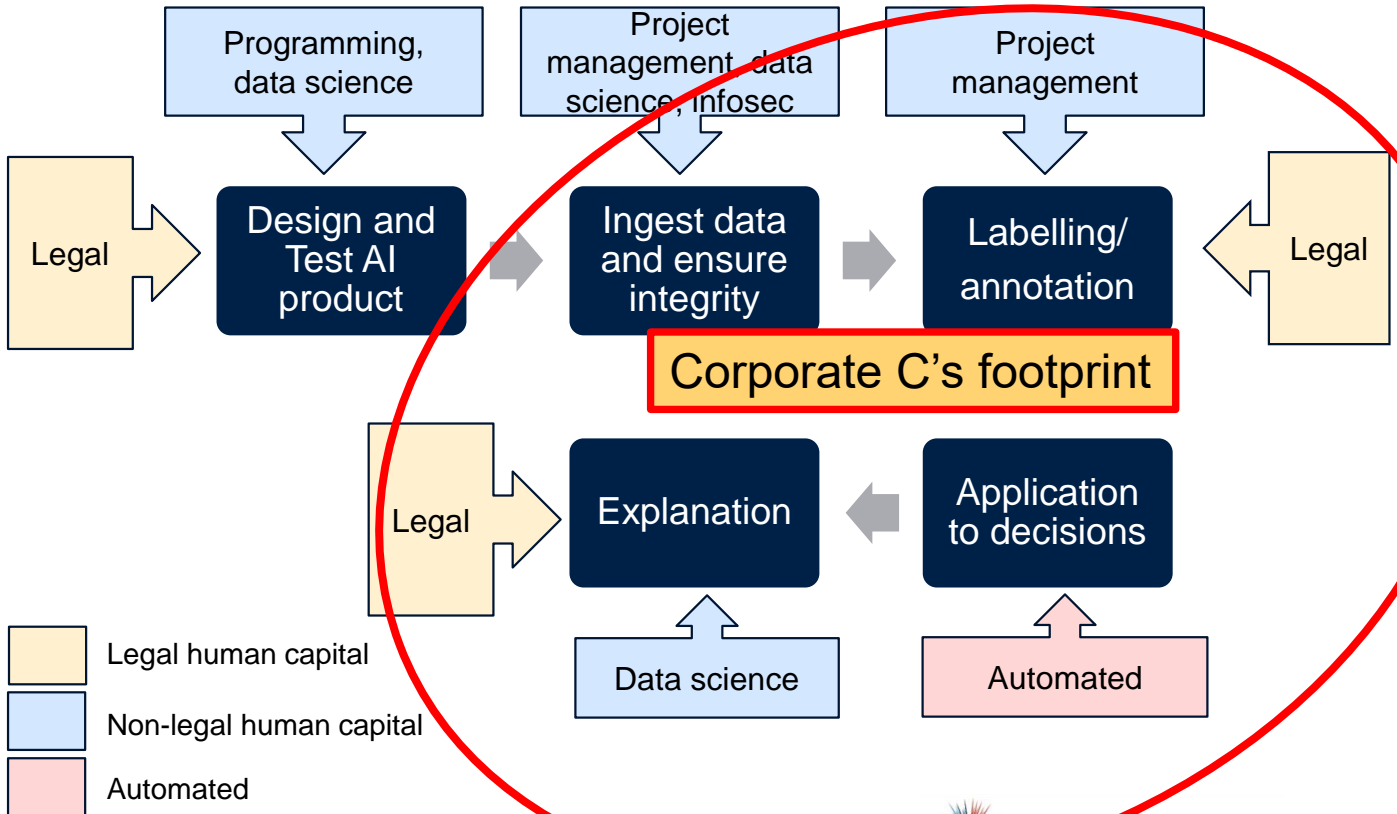


Case study 3: Corporate C

- Deploys AI and other technologies in providing legal operations support to own inhouse team
 - Licenses technology platforms from vendors but employs all relevant non-legal human capital for *deployment*
 - All relevant personnel employed by C
- Recruitment, retention and motivation of non-lawyers within corporate org structure
 - C raises outside capital and commits to invest in technology
 - Employees offered equity in C
 - But legal is a cost centre, so management are not as responsive as for activities that affect revenues directly



C's footprint





Hypothesis 2

- Successful deployment of MDTs is associated with use of corporate, rather than partnership, form.



IV. Analysis of Survey Results

Hypotheses

H1: Successful deployment of (AI-based) lawtech is associated with assembly of multi-disciplinary teams (MDTs)

H2: Successful deployment of MDTs is associated with use of corporate, rather than partnership, form.



IV.A Univariate results



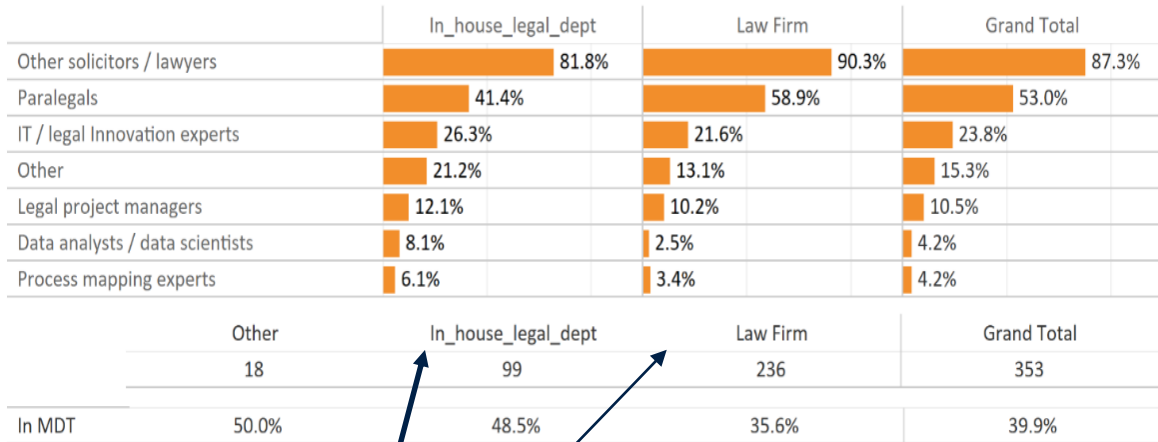
MDTs and AI adoption

		Uses any AI lawtech		
		No	Yes	Row Totals
Works in MDT	No	132	98	230
	Yes	32	65	97
Column Totals		164	163	327

Consistent with H1

MDTs and organisational type

Figure 18: Working in MDTs, by organization type



*'Grand Total' includes all complete responses, including from respondents working at ABS and legal technology solutions providers.

Δ consistent with H2



IV.B Multivariate results



Control variables

- Age of respondent (proxied by years since qualification)
- Use of non-AI lawtech by respondent
- Lawtech training received by respondent in previous 3 years

Table 1: Determinants of AI Deployment

Consistent with H1

	<i>Dependent variable:</i>					
	Uses any AI-based lawtech					
	(1)	(2)	(3)	(4)	(5)	(6)
Works in MDT	1.006*** (0.254)	1.012*** (0.254)	0.978*** (0.258)	0.903*** (0.261)	0.902*** (0.266)	0.918*** (0.264)
Years since qualification		-0.009 (0.009)	-0.009 (0.009)	-0.006 (0.009)	-0.0004 (0.010)	-0.009 (0.010)
# Lawtech solutions used			0.064 (0.083)	0.019 (0.087)	0.059 (0.091)	0.025 (0.087)
# Lawtech training				0.161** (0.076)	0.130* (0.077)	0.154** (0.076)
Partner or leadership role					-0.256 (0.261)	
Traditional legal career aspiration						-0.331 (0.321)
Constant	-0.298** (0.133)	-0.132 (0.206)	-0.313 (0.313)	-0.431 (0.320)	-0.502 (0.329)	-0.311 (0.339)
Observations	327	327	327	327	313	326
Log Likelihood	-218.410	-217.853	-217.556	-215.220	-206.031	-213.741
Akaike Inf. Crit.	440.820	441.706	443.112	440.439	424.063	439.482

Note:

*p<0.1; **p<0.05; ***p<0.01

Consistent with H2

Table 2: Determinants of Multi-disciplinary teams

	<i>Dependent variable:</i>					
	Works with other disciplines			Openness to other disciplines		
	<i>logistic</i>			<i>OLS</i>		
	(1)	(2)	(3)	(4)	(5)	(6)
Law firm	-0.704** (0.285)	-0.642** (0.291)	-0.599** (0.293)	-0.351*** (0.127)	-0.343*** (0.127)	-0.331*** (0.127)
Years since qualification	0.006 (0.010)	0.008 (0.010)	0.011 (0.010)	-0.009** (0.004)	-0.009** (0.004)	-0.008* (0.004)
# Lawtech solutions used	0.368*** (0.099)	0.344*** (0.100)	0.280*** (0.104)	0.105** (0.042)	0.102** (0.043)	0.080* (0.044)
AI lawtech used		0.932*** (0.261)	0.862*** (0.264)		0.068 (0.112)	0.040 (0.113)
# Lawtech training			0.165** (0.077)			0.059* (0.035)
Constant	-1.544*** (0.376)	-2.061*** (0.413)	-2.160*** (0.417)	3.831*** (0.161)	3.799*** (0.170)	3.767*** (0.170)
Observations	322	322	322	337	337	337
R ²				0.045	0.047	0.055
Adjusted R ²				0.037	0.035	0.040
Log Likelihood	-187.891	-181.283	-178.933			
Akaike Inf. Crit.	383.782	372.566	369.865			
Residual Std. Error				1.018 (df = 333)	1.019 (df = 332)	1.016 (df = 331)
F Statistic				5.288*** (df = 3; 333)	4.049*** (df = 4; 332)	3.827*** (df = 5; 331)

Note:

*p<0.1; **p<0.05; ***p<0.01 43



Interpretation

- Results are consistent with H1 and H2
- NB limitations of data do not permit causal interpretation



V. So what? Implications for law firms and legal profession



V.A Law firms



Implications for law firms

- Evidence suggests traditional (partnership) law firms may be at a disadvantage in implementing AI-based lawtech
- So what?
 - Clients likely to find it cheaper to do own AI-based lawtech analysis or purchase from legal operations company
 - Law firms likely to cede “automable” work
 - No need to implement AI-based lawtech in a law firm: can be purchased as an input to traditional (bespoke) legal advisory work

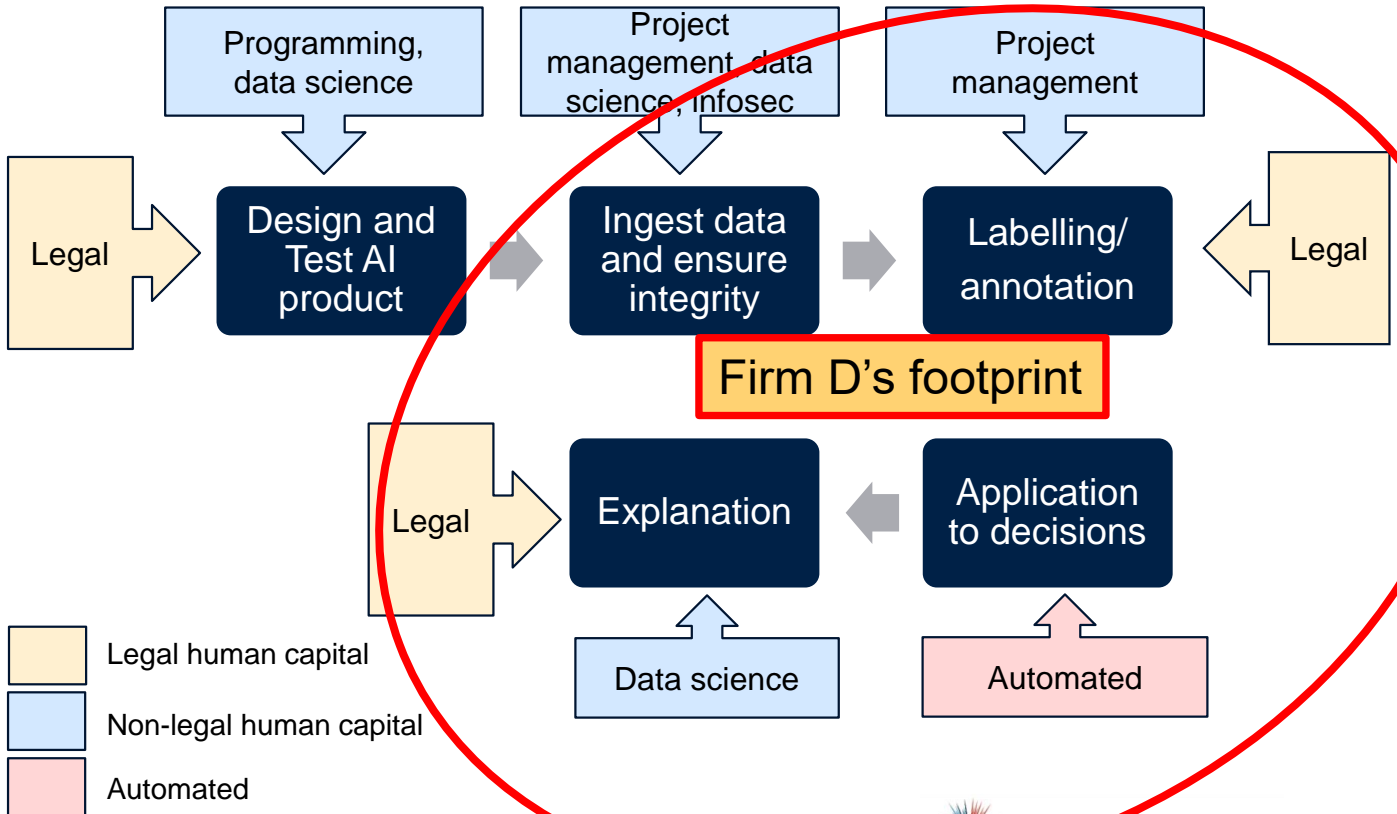


Case study 4: Law firm D

- Has undergone an IPO, law firm (D LLP) is now subsidiary of public company (D plc)
- Deploys AI and other technologies in providing legal operations support to corporate clients and other law firms
 - D plc licenses technology platforms from vendors but employs all relevant non-legal human capital for *deployment*
 - Assembles teams to work for clients
 - D LLP lawyers do advisory work for clients
- Recruitment, retention and motivation of non-lawyers within corporate org structure
 - D plc raises outside capital and commits to invest in technology
 - Employees of D plc offered equity in the company



D's footprint



Interviewee perspective (5)

“[W]e’ve got the ability to attract not just technology experts but also ... kind of legal, quasi-legal, hybrid [data] kind of [people]. You know, ‘Come join [Firm D], ... a sexy, arm’s length, research and development innovation company’ is a better sell in our industry than ‘Come and join our IT function’.” (Firm D interviewee)



V.B Legal profession



Implications for law firms

- Evidence suggests legal human capital augments the development and deployment of AI-based lawtech, but
 - Does not look like traditional “lawyering” and
 - Happens outside traditional “law firms”
- Will such professionals be seen as “lawyers” or something else? Where is the boundary of the profession?

VI. Conclusions



Conclusions

- AI mainly *augments* legal skills, rather than *substitutes* for them
- AI deployment pipelines require *multi-disciplinary teams* (MDTs)
 - Organizational form is a relevant factor in MDT establishment
 - Traditional law firm partnerships face challenge
 - Entry of “law companies”; restructuring of law firms as ABS
- Legal human capital deployed in MDTs (non-advisory work) raises issues about boundaries of legal profession

Further information

- ⇒ Prior theory paper: John Armour & Mari Sako, 'AI-Enabled Business Models in Legal Services: From Traditional Law Firms to Next-Generation Law Companies?' (2020) 7 *Journal of Professions and Organization* 27-46 (link [here](#)).
- ⇒ Survey report (descriptive stats): Mari Sako, John Armour and Richard Parnham, *LawTech Adoption and Training: Findings from a Survey of Solicitors in England and Wales* (Oxford and London: Oxford University and the Law Society of England and Wales, 2020) (link [here](#)).
- ⇒ Regular updates on [Project website](#) and [Oxford Business Law Blog](#)



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