Contents

	List of illustrations	xii
	Acknowledgements	xiii
	Introduction	xiv
1	Legal data overview	1
	1.1 Introduction 1	
	1.2 Why look at data? 2	
1 %	1.3 Applications 3	
	Business improvement 4	
	Legal research 4	
	Academic research 5	
	Court processes 5	
	Consumer focused applications 6	
	1.4 Sources 6	
	Courts and tribunals 7	
	Legislative bodies 9	
	Government departments 11	
	Law firms and lawyers 11	
	Academic research 12	
	Legal technology companies 12	
	1.5 Global context 12	
	United States 12	
	Canada 13	
	United Kingdom 13	
e de la companya de l	European Union 14	
	Africa 14	
	India 15	
	Singapore 15	
	Australia 16	
	1.6 Conclusion 16	

4.2 Close reading 50

2	Sources of data	19
	2.1 Introduction 19	
	2.2 Sources 20	
	Governments 21	
	Parliamentary bodies 22	
	Courts 23	
	Business processes 26	
	Legal publishers and data providers 28	
	2.3 Developing data 29	
	Experimental methodology 29	
	Proxy data 30	
	2.4 Strategy 31	
	2.5 Conclusion 31	
2	Data formats	34
3	Data ioimats	37
	3.1 Introduction 34	
	3.2 Categories 34	
	3.3 Issues particular to law 36	
	Case citations 36	
	Depth of data 36	
	Machine readable law 36	
	3.4 Types 37	
	Numerical 37	
	Categorical 38	
	Free text 38	
	3.5 Delivery formats 39	
	Spreadsheets 41	
	Tagged formats 41	
	Databases 42	
	APIs 42	
	3.6 Considerations 43	
	Data standards 43	
	Passively and actively collected data 43	
	Supervised and unsupervised machine learning 44	
	Law as code and law as data 45	
	3.7 Planning 46	
	3.8 Conclusion 47	
4	Data analysis techniques	49
	4.1 Introduction 49	

	4.3 Statistical analysis 51	
	Normal distribution 52	
	Random distribution 52	
	Linear distribution 52	
	Multiple points of comparison 53	
	Techniques 53	
	Compared to machine learning 55	
	4.4 Machine learning 55	
	Supervised learning 56	
	Unsupervised learning 56	
	Reinforcement learning 57	
	4.5 Natural language processing 57	
	Bag-of-words 58	
	Vector analysis 59	
	4.6 Other tools 60	
	Knowledge bases 60	
	Decision trees 60	
	Network analysis 62	
	4.7 Conclusion 62	
-		
5	Interpreting legal data	65
	5.1 Introduction 65	
	5.2 Approaching data analysis 66	
	5.3 Methodology 67	
	Statistics 67	
	Machine learning 69	
	Natural language 69	
	5.4 Considerations 70	
	Correlation and causation 70	
	Proxy data 71	
	Sensitivity 71	
	Suitability 72	
	Complexity 72	
	Extrapolation 73	
	5.5 Concerns 73	
	Overfitting 74	
	Bias 75	
	5.6 Conclusion 75	
6	Issues with using legal data	78
	6.1 Introduction 78	
4 . 10		

	6.2 Availability 78	
	6.3 What is missing 79	
	6.4 Ambiguity 80	
	6.5 Limitations on language processing 81	
	6.6 Sampling 82	
	Analytics and sample size 82	
	6.7 Cost 83	
	6.8 Jurisdiction 84	
	6.9 Structure 84	
	Case law 85	
	Legislation 86	
	Law firms' data 87	
	6.10 Risks 88	
	6.11 Conclusion 89	
7	Artificial intelligence	93
	7.1 Introduction 93	
	7.2 Definition 93	
	7.3 Promise and limits 94	
	7.4 Types of artificial intelligence 95	
	Statistical analysis 95	
	Machine learning 96	
	Vaporware 97	
	7.5 Process 97	
	7.6 Likely impacts 98	
	7.7 Limitations 100	
	7.8 Concerns 100	
	Fairness 100	
	Error and bias 102	
	Ethics 102	
	7.9 Thinking critically 104	
	7.10 Conclusion 105	
8	The law and politics of legal data	108
	8.1 Introduction 108	
	8.2 The nature of data based applications 109	
	8.3 Access to data 110	
	8.4 Privacy 111	
	8.5 Jurisdiction 112	

	Infrastructure 112	
	Legacy systems 113	
	Government controls 114	
	8.6 Primary law 115	
	8.7 Practice data 116	
	8.8 The research landscape 116	
	8.9 Working toward change 117	
33	8.10 Conclusion 118	
4		
9	Vision for the future	120
	9.1 Introduction 120	
	9.2 Thinking about the future 121	
	9.3 Forecasting 122	
	9.4 Technology adoption dynamics 122	
	9.5 Issues 124	
	Data availability 124	
	Regulation of technology 126	
	Social concerns 127	
	9.6 Divergence 127	
A.	Jurisdiction 127	
	Population segments 128	
	Legal system 129	
	Culture 129	
	9.7 Predictions 130	
	Near term 130	
194	Medium term 131	
	Long term 132	
	9.8 Conclusion 133	
	Bibliography	135
	Index	146
14		8.5