

Table of Contents

List of abbreviations	13
Chapter 1: Introduction	19
A. Landscape	19
B. A primer on artificial intelligence	20
I. What is artificial intelligence	20
II. Machine learning	23
1. <i>Machine learning models development</i>	23
2. <i>Training method</i>	26
3. <i>Deep learning</i>	28
III. The role of data	29
1. <i>Data lifecycle</i>	29
2. <i>Model-centric v. data-centric approach</i>	32
C. Data	33
I. Definition of data	33
II. Economic characteristics of data	35
III. Classification of data	37
1. <i>Personal and non-personal data</i>	37
2. <i>Data by structure and organisation</i>	41
3. <i>Data by origin</i>	42
D. Players and business models	44
E. Barriers to business-to-business data sharing	46
I. Legal barriers	47
II. Administrative/organisational barriers	51
III. Technical barriers	51
F. Current European legal framework for business-to-business data sharing	53
G. Scope of this thesis	56

Table of Contents

Chapter 2: Private law instruments to protect datasets and promote business-to-business data sharing for artificial intelligence development	59
A. Data protected by copyright and related rights	59
I. Protected works and conferred rights	59
II. Infringement	63
1. <i>Collection</i>	63
2. <i>Pre-processing</i>	65
3. <i>Processing and obtaining the trained model</i>	72
4. <i>Production of outputs and litigation surrounding generative artificial intelligence</i>	73
5. <i>Moral rights</i>	83
6. <i>Respect for the idea-expression dichotomy</i>	83
III. Exceptions and limitations to copyright and related rights	85
1. <i>Temporary copies</i>	86
2. <i>Text and data mining</i>	90
IV. Evaluation of copyright protection and possible ways forward	108
B. Protection of databases	111
I. Notion of database	111
II. Databases protected by copyright	115
1. <i>Protected works and conferred rights</i>	115
2. <i>Rightholder</i>	116
3. <i>Infringement</i>	117
4. <i>Exceptions</i>	118
a) <i>Normal use of the database</i>	119
b) <i>Text and data mining</i>	120
III. Databases protected by the sui generis database right	120
1. <i>Requirements for protection</i>	120
2. <i>Exclusive rights</i>	127
3. <i>Database maker</i>	132
4. <i>Time of protection</i>	133
5. <i>Infringement</i>	134
6. <i>Limitations and exceptions to the sui generis database right</i>	137
a) <i>Insubstantial parts of the database</i>	137
b) <i>Text and data mining</i>	138
7. <i>Evaluation of the sui generis database right</i>	139

C. Unfair Competition	148
I. Prohibited practices under the Spanish Unfair Competition Act	148
1. <i>Unfair imitation</i>	149
2. <i>Umbrella Clause</i>	154
II. Prohibited practices related to data under unfair competition in other Member States	157
III. Evaluation of unfair competition protection	161
D. Trade secrets	163
I. Object and requirements for protection	164
1. <i>Secrecy</i>	166
2. <i>Commercial value because of the secrecy</i>	171
3. <i>Reasonable measures taken to preserve the secrecy</i>	174
II. Conferred rights and infringement	181
III. Lawful acquisition, use, and disclosure of trade secrets	185
IV. Trade secret holder	189
V. Evaluation of trade secret protection	191
E. De facto control: contractual practices and technical protection measures	196
I. Freely accessible content (data scraping)	200
II. Data non-publicly accessible	209
1. <i>“Exceptions” to the principle of the privity of contracts.</i>	211
III. Evaluation of factual protection	218
F. Evaluation of private law instruments to foster business-to-business data sharing and possible ways forward	222
I. Adequate legal procedural framework	226
II. Principles and model contracts	238
III. Unfair contractual terms control	244
Chapter 3: Public law instruments to foster business-to-business data sharing for artificial intelligence development	255
A. Mandatory data sharing	255
I. Article 102 TFEU: abuse of dominant position	255
1. <i>Market power, barriers to entry and relevant market</i>	255
2. <i>Essential facilities doctrine</i>	264
a) Case law	264

Table of Contents

b) Summary of the essential facilities doctrine requirements and new developments	271
c) Distinction of the essential facilities doctrine from other related theories of harm	277
d) The essential facilities doctrine applied to data	281
aa) <i>A Brief look at the merger decisions considering big data aspects</i>	281
bb) <i>Meeting the requirements of the essential facilities doctrine in data settings</i>	287
3. <i>Evaluation of the essential facilities doctrine as a means to foster data sharing for AI development</i>	293
II. Digital Markets Act	309
1. <i>Goals and application</i>	309
2. <i>Data sharing provisions</i>	311
a) Obligation to grant end users access to data	311
b) Obligation to grant business users access to data	315
c) Obligation of search engine operators to provide search data	317
3. <i>Evaluation of the Digital Markets Act</i>	322
III. Data Act	326
1. <i>Goals, scope and sharing obligations.</i>	326
2. <i>Evaluation of the Data Act</i>	337
B. Data Intermediaries	338
I. Data intermediaries vs data intermediation services providers	340
II. Notification and certification procedures	342
III. Substantive conditions	343
IV. Evaluation of the Data Governance Act	349
C. Evaluation of public law instruments to foster business-to-business data sharing and possible ways forward	352
Chapter 4: Conclusions	363
Bibliography	375
A. Books	375
B. Contributions to collective works	379
C. Articles	383

D. Online resources	390
---------------------	-----