

TABLE OF CONTENTS

TABLE OF FIGURES	13
TABLE OF ABBREVIATIONS	15
INTRODUCTION	17
Background	17
The Objective of the Study	20
Outline of the Dissertation	23
Methodology	24
CHAPTER I. THE CONCEPT OF BIG DATA	26
Part 1 – Definition of Big Data	26
1.1 Volume	27
1.2 Variety	29
1.3 Velocity	30
1.4 Value	31
Part 2 – Competitive Significance of Big Data	33
CHAPTER II. TRANSACTIONAL RELEVANCE OF BIG DATA	40
Part 1 – The Process behind the Collection and Application of Data	40
1.1 Consumer Data	40
1.1.1 Collection of Data	41
1.1.1.1 Cookies	43
1.1.1.2 Other Tracking Mechanisms	46
1.1.2 Application on Consumer Data	48
1.1.3 Building of efficient algorithms	53
1.1.3.1 Advancement in Algorithmic Functions	54
1.1.3.2 The Mechanism behind Algorithms	57
1.2 Business Data	62
1.2.1 Collection: Tracking through Algorithms	62
1.2.2 Application on Business Data	65

Part 2 – Changing Market Scenarios	68
2.1 Rise of Data-Analytical Firms	68
2.2 Big Data Applications in Marketing Activities	71
2.2.1 Marketing and the Marketing Mix	72
2.2.1.1 Product	74
2.2.1.2 Price	76
2.2.1.3 Place	79
2.2.1.4 Promotion	80
2.2.2 Changing Online Market Transactional Scenario	83
 CHAPTER III. LEGAL BASIS FOR THE CONTROL OF ABUSE OF DOMINANT UNDERTAKINGS	 89
Part 1 – Relevant Market Definition	91
1.1 The Legal Concept	91
1.2 Market Definition	92
1.2.1 General Aspects	92
1.2.2 Specific Relevant Factors	97
1.2.2.1 SSNIP Test	97
1.2.2.2 Price	100
1.2.2.3 Physical characteristics and end-use of the product	101
1.2.2.4 Consumer preferences	103
1.2.2.5 Exclusion of in-house production	105
1.2.2.6 Existence of specialised producers	106
1.2.2.7 Specific distribution channels	106
1.2.2.8 Product representing a small part of the overall final product cost	108
1.2.2.9 Switching time/cost/investment	109
1.2.2.10 Supply-side substitutability	110
 Part 2 – Defining the Market for Big Data	 114
2.1 Explicitly Traded Data Market/Pure Data Markets	115
2.2 Market Definition for Data in Multi-Sided Platforms	117
2.2.1 Multi-Sided Platforms	118
2.2.2 The existence of a market for data in multi-sided platforms	122
2.2.3 Data Markets in Facebook – An Illustration	126

2.2.4	Relevant Market Definition for Big Data in Multi-Sided Platforms	130
2.2.4.1	Product market	130
2.2.4.1.1	Inadequacy of the SSNIP Test in Multi-Sided Platforms	130
2.2.4.1.2	The relevant factors for data	132
2.3.4.2.	Geographical Market	136
CHAPTER IV. ESTABLISHING DOMINANCE		137
Part 1 – Determining Dominance in Traditional Markets		137
1.1	The Legal Concept of Dominance	137
1.2	Market Shares	139
1.3	Barriers to Entry	141
1.3.1	Relevance of the Concept	141
1.3.2	Legal and Regulatory Barriers	143
1.3.3	Economies of Scale and Sunk Costs	144
1.3.4	Access to Essential Factors	145
1.3.5	Privileged Access to Sources of Supply	146
1.3.6	Network Effects and Switching Cost	147
1.3.7	Unavoidable Trading Partner	150
1.3.8	Established Position of the Incumbent Firm	151
1.3.9	Highly Developed Distribution and Sales Network and Product Range	153
Part 2 – Determining Dominance in Multi-Sided Platforms		154
2.1	Relevant Considerations	154
2.2	Market Shares – A Shadow of Monopoly Power?	154
2.3	Barriers to Entry Analysis for Multi-Sided Platform Markets	160
2.3.1	Economies of Scale and Scope	160
2.3.2	Access to Data	164
2.3.3	Privileged Access to Critical Inputs: Coupling of Data Access and the Ability to draw Customer Attention	169
2.3.4	Network Effects and Switching Costs	174
2.3.4.1	The functioning of network effects	174
2.3.4.2	Market Tipping	178
2.3.4.3	High switching cost	179
2.3.4.4	Lock-in of users	181
2.3.5	Unavoidable Trading Partner	183

CHAPTER V. ABUSE OF DOMINANCE	186
Part 1 – Abusive Conduct in Traditional Markets	186
1.1 The Concept of Abuse	186
1.2 Types of Abusive Conduct in Traditional Markets	191
1.2.1 Pricing Abuses	192
1.2.1.1 Predatory Pricing	192
1.2.1.2 Margin Squeeze	197
1.2.1.3 Price Discrimination	199
1.2.1.4 Rebate Schemes	202
1.2.1.5 Bundling	205
1.2.1.6 Exploitative Pricing	206
1.2.1.7 Effect of pricing abuses on inter-state trade	209
1.2.2 Non-Pricing Abuses in Traditional Markets	209
1.2.2.1 Tying	210
1.2.2.2 Refusal to Supply	213
1.2.2.3 Exclusive Dealings	218
1.2.2.4 Effect of non-pricing abuses on inter-state trade	219
Part 2 – Abusive Conduct by Data-Rich Multi-Sided Platforms	220
2.1 Information Asymmetry in Digital Markets	220
2.2 Types of Abusive Conduct in Multi-Sided Markets	223
2.2.1 Pricing Abuses in Digital Markets	223
2.2.1.1 Predatory Pricing	224
2.2.1.2 Margin Squeeze	229
2.2.1.3 Personalised Price Discrimination	235
2.2.1.4 Rebate Schemes	244
2.2.1.5 Exploitative Pricing	246
2.2.1.6 Bundling	250
2.2.2 Non-Pricing Abuses in Digital Markets	251
2.2.2.1 Tying	252
2.2.2.2 Refusal to Supply	258
2.2.2.3 Exclusive Dealings	263
2.2.2.4 Exploitative terms and conditions	266
2.2.2.5 Self-preferencing	271
CONCLUSION	279

BIBLIOGRAPHY	289
Legislations	289
Cases	289
Reports and Guidance Papers	295
Articles	299
Books	312
Conference & Speeches	316
Internet Sources	317