Strategic Investments in Innovation

The Telecommunications Equipment Industry, 1975–1986

Michael J. Dowling

Garland Publishing, Inc. New York & London 1992

TABLE OF CONTENTS

Chapter 1. Introduction	1
1.1. Rationale 1.2. Definition of Concepts 1.3. Context of the Study 1.4. Methodology 1.5. Contributions of the Study 1.6. Organization of the Study	1 2 3 8 9 9
Chapter 2. Conceptual Foundation and Background	11
 2.1. Technological Change and Innovation in Economic Theory 2.2. Technological Change and Porter's Industry Competition Model 2.2.1. Rivalry Among Firms 2.2.2. Competing Firms-Supplier Bargaining Relationship 2.2.3. Threat of Substitutes 2.2.4. Competing Firms-Buyer Bargaining Relationship 2.2.5. Threat of Entry 2.2.6. Strategic Groups and Mobility Barriers 2.3. Technological Change, Innovation and Strategy Other Empirical Research 2.4. Summary 	11 13 13 14 14 15 17 19 21
Chapter 3. Changes in the Telecommunications Equipment Industry	23
3.1. Technological Changes 3.2. Environmental Changes 3.3. Summary	24 32 34

Chapter 4. Research Questions, Data, Methodology	36
 4.1. Research Questions 4.2. Data 4.3. Methodology 4.3.1. Entry Barriers 4.3.2. Strategic Groups and Mobility Barriers 4.3.3. Buyer-Firm Bargaining Relationship 	36 38 39 40 41 42
Chapter 5. Investment in Innovation as a Strategic Entry Way into the Telecommunications Equipment Industry	43
5.1. The Concept of Entry Barriers 5.2. Investments in Innovation as an Entry Barrier 5.3. Strategic Entry Ways 5.4. Interdependent Entry Barriers 5.5. Investments in Innovation: New vs. Established Firms 5.6. Financial Performance 5.7. Discussion 5.8. Summary and Conclusions	44 45 47 48 49 55 58 62
Chapter 6. Investment in Innovation, Strategic Groups and Buyer Bargaining Power in the Telecommunications	
Chapter 6. Investment in Innovation, Strategic Groups and Buyer Bargaining Power in the Telecommunications Equipment Industry	63
 Chapter 6. Investment in Innovation, Strategic Groups and Buyer Bargaining Power in the Telecommunications Equipment Industry 6.1. The Strategic Group/Mobility Barrier Paradigm 	63 64
 Chapter 6. Investment in Innovation, Strategic Groups and Buyer Bargaining Power in the Telecommunications Equipment Industry 6.1. The Strategic Group/Mobility Barrier Paradigm 6.1.1. Defining Strategic Groups 	63 64 64
 Chapter 6. Investment in Innovation, Strategic Groups and Buyer Bargaining Power in the Telecommunications Equipment Industry 6.1. The Strategic Group/Mobility Barrier Paradigm 6.1.1. Defining Strategic Groups 6.1.2. Defining Mobility Barriers 6.1.3. Investment in Innovation as a Makility Barrier 	63 64 66
 Chapter 6. Investment in Innovation, Strategic Groups and Buyer Bargaining Power in the Telecommunications Equipment Industry 6.1. The Strategic Group/Mobility Barrier Paradigm 6.1.1. Defining Strategic Groups 6.1.2. Defining Mobility Barriers 6.1.3. Investment in Innovation as a Mobility Barrier 6.2. Strategic Groups in the Telecommunications Equipment Industry 6.3. Investments in Innovation for Strategic Groups in the 	63 64 64 66 67 68
 Chapter 6. Investment in Innovation, Strategic Groups and Buyer Bargaining Power in the Telecommunications Equipment Industry 6.1. The Strategic Group/Mobility Barrier Paradigm 6.1.1. Defining Strategic Groups 6.1.2. Defining Mobility Barriers 6.1.3. Investment in Innovation as a Mobility Barrier 6.2. Strategic Groups in the Telecommunications Equipment Industry 6.3. Investments in Innovation for Strategic Groups in the Telecommunications Equipment Industry 6.4. The Relationship between Investment in Innovation and Performance for Strategic Groups in the Telecommunications 	63 64 66 67 68 76
 Chapter 6. Investment in Innovation, Strategic Groups and Buyer Bargaining Power in the Telecommunications Equipment Industry 6.1. The Strategic Group/Mobility Barrier Paradigm 6.1.1. Defining Strategic Groups 6.1.2. Defining Mobility Barriers 6.1.3. Investment in Innovation as a Mobility Barrier 6.2. Strategic Groups in the Telecommunications Equipment Industry 6.3. Investments in Innovation for Strategic Groups in the Telecommunications Equipment Industry 6.4. The Relationship between Investment in Innovation and Performance for Strategic Groups in the Telecommunications Equipment Industry 6.4.1. Ordinal and Cardinal Comparison of Relative 	63 64 66 67 68 76 83
 Chapter 6. Investment in Innovation, Strategic Groups and Buyer Bargaining Power in the Telecommunications Equipment Industry 6.1. The Strategic Group/Mobility Barrier Paradigm 6.1.1. Defining Strategic Groups 6.1.2. Defining Mobility Barriers 6.1.3. Investment in Innovation as a Mobility Barrier 6.2. Strategic Groups in the Telecommunications Equipment Industry 6.3. Investments in Innovation for Strategic Groups in the Telecommunications Equipment Industry 6.4. The Relationship between Investment in Innovation and Performance for Strategic Groups in the Telecommunications Equipment Industry 6.4.1. Ordinal and Cardinal Comparison of Relative Investments in Innovation and Performance 6.4.2. Correlation Analysis of Investment 	63 64 66 67 68 76 83 83
 Chapter 6. Investment in Innovation, Strategic Groups and Buyer Bargaining Power in the Telecommunications Equipment Industry 6.1. The Strategic Group/Mobility Barrier Paradigm 6.1.1. Defining Strategic Groups 6.1.2. Defining Mobility Barriers 6.1.3. Investment in Innovation as a Mobility Barrier 6.2. Strategic Groups in the Telecommunications Equipment Industry 6.3. Investments in Innovation for Strategic Groups in the Telecommunications Equipment Industry 6.4. The Relationship between Investment in Innovation and Performance for Strategic Groups in the Telecommunications Equipment Industry 6.4.1. Ordinal and Cardinal Comparison of Relative Investments in Innovation and Performance 6.4.2. Correlation Analysis of Investment in Innovation and Peformance 6.5. Cluster Analysis of Strategic Groups in the 	63 64 66 67 68 76 83 83 92

 6.5.2. Investment in Innovation as a Strategic Mobility Way 6.5.3. Strategic Group Dynamics for the Industry 6.6. Summary and Conclusions 	119 120 121
Chapter 7. Influences on the Buyer-Supplier Bargaining Relationship in the Telecommunications Equipment Industry	123
 7.1. Bargaining Power in Porter's Industry Competition Model 7.2. Buyer-Supplier Bargaining and Innovation 7.3. Discussion of Survey Methodology 7.4. Survey Results 7.5. Summary and Conclusions 	123 128 131 132 140
Chapter 8. Risk, Return, and Investments in Innovation for Strategic Groups in the Telecommunications Equipment Industry	142
8.1. Replication of Bowman's Risk-Return Analysis	144
Risk-Return Analysis	146
8.4. Summary and Conclusions	148 161
Chapter 9. Conclusions and Directions for Future Research	166
 9.1. Summary 9.2. Hypotheses for Further Research 9.2.1. Innovation and the Threat of New Entrants 	166 167 167
9.2.2. Innovation and Buyer-Supplier Structure 9.2.3. Innovation, Performance, and Risk 9.3. Contributions of this Study	169 170 171
Appendix A. Strategic Groups Defined by Markets Served	174
Appendix B. Questionnaires for the Survey of Common Carrier and Customer Premise Buyers	176
Bibliography	188

-

•