

Martin Sternal

**Mergers and Acquisitions by
Digital Technology Giants**

Three Perspectives on Value Creation



Nomos

Nomos Universitätsschriften

Betriebswirtschaftslehre

Band 10

Martin Sternal

Mergers and Acquisitions by Digital Technology Giants

Three Perspectives on Value Creation



Nomos

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available on the Internet at <http://dnb.d-nb.de>

a.t.: Darmstadt, Technische Universität Darmstadt, Dissertation, 2020

ISBN 978-3-8487-7672-6 (Print)
978-3-7489-1047-3 (ePDF)

British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library.

ISBN 978-3-8487-7672-6 (Print)
978-3-7489-1047-3 (ePDF)

Library of Congress Cataloging-in-Publication Data

Sternal, Martin
Mergers and Acquisitions by Digital Technology Giants
Three Perspectives on Value Creation
Martin Sternal
183 pp.
Includes bibliographic references.

ISBN 978-3-8487-7672-6 (Print)
978-3-7489-1047-3 (ePDF)



Onlineversion
Nomos eLibrary

D17

1st Edition 2020

© Nomos Verlagsgesellschaft, Baden-Baden, Germany 2020. Overall responsibility for Manufacturing (printing and production) lies with Nomos Verlagsgesellschaft mbH & Co. KG.

This work is subject to copyright. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information storage or retrieval system, without prior permission in writing from the publishers. Under § 54 of the German Copyright Law where copies are made for other than private use a fee is payable to “Verwertungsgesellschaft Wort”, Munich.

No responsibility for loss caused to any individual or organization acting on or refraining from action as a result of the material in this publication can be accepted by Nomos or the author.

Table of Contents

List of Figures	9
List of Tables	11
List of Abbreviations	15
1 Introduction and Motivation	17
1.1 Research Topics and Motivation	17
1.2 Research Goals and Course of Analysis	19
2 Digital Giants' Mergers and Acquisitions Activity: Drivers of Value Creation and Value Dilution	23
2.1 Introduction	23
2.2 Literature Review and Research Hypotheses	26
2.2.1 Digital Giants' Characteristics and Value Drivers	28
2.2.2 Value Creation Drivers	32
2.2.3 Value Dilution Drivers	36
2.3 Data and Research Methodology	40
2.3.1 Data Sample	40
2.3.2 Definition of Variables	43
2.3.3 Event Study Methodology	46
2.3.4 Multivariate Regression Methodology	50
2.4 Empirical Results	51
2.4.1 Value Creation in Digital Giants' Transactions	51
2.4.2 Relatedness Effects on Aggregated Level	53
2.4.3 Related Transactions on Company Level	55
2.4.4 Unrelated Transactions on Company Level	58
2.4.5 Robustness Analysis	61
2.4.6 Analysis of Value Drivers	65
2.5 Discussion	69

Table of Contents

3	Competitive Dynamics in the Digital Technology Industry: Rival Effects in the Light of Digital Giants' Mergers and Acquisitions Activity	72
3.1	Introduction	72
3.2	Literature Review and Research Hypotheses	75
3.2.1	Digital Giants and Competition in the Digital Technology Industry	76
3.2.2	Competitive Dynamics and Rival Effects	79
3.2.3	“Winner-Take-All” Markets and Market Concentration Hypothesis	81
3.2.4	Competitive Advantages and Efficiency Hypothesis	82
3.2.5	Potential Targets and Acquisition Probability Hypothesis	85
3.2.6	Signaling Effects and Growth Probability Hypothesis	87
3.2.7	Overview of Hypotheses	91
3.3	Data and Research Methodology	92
3.3.1	Data Sample and Rival Selection	92
3.3.2	Definition of Variables	94
3.3.3	Research Methodology	97
3.4	Empirical Results	100
3.4.1	Rival Effects on Direct and Indirect Rivals	100
3.4.2	Supplemental Analysis of Direct Rivals	106
3.4.3	Supplemental Analysis of Indirect Rivals	113
3.4.4	Comparison of Direct and Indirect Rival Effects	118
3.4.5	Robustness Analysis	120
3.5	Discussion	123
4	Dotcom Giants vs. Digital Giants: Two Groups of Leading Digital Technology Players from Different Periods	127
4.1	Introduction	127
4.2	Literature Review and Research Hypotheses	130
4.2.1	The Group of Dotcom Giants	131
4.2.2	Mergers and Acquisitions and Dotcom Giants	133
4.2.3	Relatedness Effects and Dotcom Giants	134
4.2.4	Liquidity Effects and Dotcom Giants	136
4.2.5	Rival Effects between Dotcom Giants and Digital Giants	137

Table of Contents

4.3	Data and Research Methodology	139
4.3.1	Data Sample and Rival Selection	139
4.3.2	Definition of Variables	141
4.3.3	Research Methodology	143
4.4	Empirical Results	145
4.4.1	Value Creation in Dotcom Giants' Transactions	145
4.4.2	Value Drivers in Dotcom Giants' Transactions	149
4.4.3	Rival Effects Analysis	153
4.5	Discussion	159
5	Overall Conclusion and Contribution	162
5.1	Summary of Results	162
5.2	Implications for Research and Practice	164
5.3	Avenues for Future Research	167
	References	169
	Appendix	181
	Abstract: English Version	181
	Abstract: German Version	182

List of Figures

Figure 1.2.1: Structure of the Thesis	21
Figure 2.3.1: Event Study Methodology	47
Figure 2.4.1: CAARs for Related and Unrelated Transactions on Aggregated Level	60
Figure 3.2.1: Competitive Dynamics Model	79
Figure 3.3.1: Research Model	97
Figure 3.4.1: CAARs to Direct and Indirect Rivals for Digital Giants' Positive and Negative Transactions	119

List of Tables

Table 2.2.1: Digital Technology Giants' M&A Value Drivers	28
Table 2.2.2: Largest Publicly Traded Companies Worldwide by Market Capitalization in 2017	29
Table 2.2.3: Digital Technology Giants' Characteristics	32
Table 2.3.1: Data Sample Selection Funnel	42
Table 2.3.2: Distribution of Deals by Acquirer, Database and Year	43
Table 2.3.3: Characteristics of Transactions and Acquirers by Digital Technology Giant	46
Table 2.4.1: CAARs for the Total Sample on Aggregated and Company Level	52
Table 2.4.2: CAARs for Related and Unrelated Transactions on Aggregated Level	54
Table 2.4.3: CAARs for Related Transactions on Company Level	57
Table 2.4.4: CAARs for Unrelated Transactions on Company Level	59
Table 2.4.5: Robustness Analysis with Alternative Benchmarks	62
Table 2.4.6: Robustness Analysis with Alternative Return Generating Models	63
Table 2.4.7: Robustness Analysis with Alternative Sample	64
Table 2.4.8: Multivariate Regression Analysis	65
Table 3.2.1: Overview of Rival Effects Hypotheses and Expected Empirical Results	91

List of Tables

Table 3.3.1: Distribution of Deals by Acquirer and Year	93
Table 3.3.2: Characteristics of Transactions and Firms by Digital Technology Giants and Rivals	96
Table 3.4.1: CAARs to Direct Rivals, Indirect Rivals and Acquirers for Related Transactions	101
Table 3.4.2: CAARs to Direct Rivals, Indirect Rivals and Acquirers for Unrelated Transactions	102
Table 3.4.3: Multivariate Regression Analysis of Direct Rivals and Indirect Rivals – Total and by Relatedness	104
Table 3.4.4: CAARs to Direct Rivals Grouped by Acquirer Return and by Relatedness	107
Table 3.4.5: Multivariate Regression Analysis of Direct Rivals – by Acquirer Return and with Interaction Variables	109
Table 3.4.6: CAARs to Indirect Rivals Grouped by Acquirer Return and by Relatedness	114
Table 3.4.7: Multivariate Regression Analysis of Indirect Rivals – by Acquirer Return and with Interaction Variables	116
Table 3.4.8: CAARs to Direct and Indirect Rivals Grouped by Acquirer Return	120
Table 3.4.9: Robustness Analysis with Alternative Samples – CAARs	121
Table 3.4.10: Robustness Analysis with Alternative Samples – Multivariate Regression Analysis	122
Table 4.2.1: Largest Publicly Traded Companies Worldwide by Market Capitalization in 2000	132
Table 4.2.2: Market Capitalization and News Coverage of Dotcom Giants in 2007 and 2017	133

Table 4.2.3: Market Capitalization and News Coverage of Digital Technology Giants in 2007 and 2017	139
Table 4.3.1: Distribution of Deals by Acquirer and Year	140
Table 4.3.2: Characteristics of Transactions and Acquirers by Dotcom Giants and Digital Technology Giants	143
Table 4.4.1: CAARs to Growing Dotcom Giants, Shrinking Dotcom Giants and Microsoft Grouped by Relatedness	146
Table 4.4.2: CAARs to Digital Technology Giants Grouped by Relatedness	147
Table 4.4.3: Multivariate Regression Analysis of Dotcom Giants' Transactions	150
Table 4.4.4: CAARs to Digital Technology Giants as Rivals Grouped by Acquirer Return	154
Table 4.4.5: Multivariate Regression Analysis of Digital Technology Giants as Rivals – Total and by Acquirer Return	155
Table 4.4.6: CAARs to Dotcom Giants as Rivals Grouped by Acquirer Return	157
Table 4.4.7: Multivariate Regression Analysis of Dotcom Giants as Rivals – Total and by Acquirer Return	158

List of Abbreviations

BMP-test	Standardized cross-sectional test developed by Boehmer et al. (1991)
CAAR	Cumulative average abnormal return
CAR	Cumulative abnormal return
CEO	Chief executive officer
e.g.	For example
et al.	And others
FCF	Free cash flow
i.e.	In other words
IPO	Initial public offering
IS	Information systems
M&A	Mergers and acquisitions
N.A.	No author
OLS	Ordinary least squares
p.	Page
R&D	Research and development
RQ	Research question
SDC	Securities Data Company
SIC	Standard Industrial Classification
US	United States of America
vs.	Versus

