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# Innovation und Entrepreneurship

**Herausgegeben von**

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Philip Mayrhofer

# Interdependencies in the Discovery and Adoption of Facebook Applications

An Empirical Investigation

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**RESEARCH**

Philip Mayrhofer  
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## Foreword

Success in the media or entertainment industries is often characterized by a highly skewed distribution: there are few blockbusters and a long tail of unpopular titles. Similar anecdotal evidence has been found for markets for digital products. In his doctoral thesis, Philip Mayrhofer presents one of the first and most comprehensive scientific studies on Facebook Platform, a prominent example of a market for applications.

His work describes in detail the platform's market structure and the distribution of application and developer success rates. The thesis focuses on an empirical analysis of mechanisms which lead to the highly skewed distribution of application usage. In addition to horizontal differentiation and quality differences, he focuses on two forms of interdependencies which may serve as alternative explanations.

First, the author examines whether social processes (interdependencies between users) lead to bandwagon effects. Based on the analysis of individual-level survey data, he finds that social influence, both passive and active, is a strong determinant of a user's decision to adopt an application. Since some applications in addition exhibit increasing returns the more friends are using it, positive and reinforcing processes favor already popular applications.

Second, Philip Mayrhofer examines to which extent lack of information about the choice set of applications contributes to the highly concentrated market structure. In order to study this question, he empirically measures information transfers (interdependencies between applications) that arise when users learn about an application. This may be the case when they discover or use previous applications offered by the developer whose most recent product they have adopted. The results suggest that there are significant, positive spillover effects from the launch of an application on the usage of prior applications. This indicates that consumers would use a larger variety of applications if they knew about them.

Philip Mayrhofer's findings are valuable to a wide range of researchers, especially economists who are interested in the structure of internet-enabled markets. Practitioners will find a thorough description of Facebook Platform and recommendations for the development and marketing of applications.

*Munich, October 2012*

*Prof. Dietmar Harhoff, Ph.D.*

## Preface

I have many individuals to thank.

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*Philip Mayrhofer*

## Table of contents

<b>1</b>	<b>Introduction .....</b>	<b>1</b>
1.1	Motivation and research objective .....	1
1.2	Approach .....	4
1.3	Definitions and theoretical foundation .....	6
1.3.1	Discovery and adoption of products on the internet .....	6
1.3.2	Interdependencies between users .....	7
1.3.2.1	Social influence .....	7
1.3.2.2	Network externalities .....	9
1.3.3	Interdependencies between applications .....	10
1.3.3.1	Information spillovers .....	10
1.3.3.2	Brand spillovers and complementarities .....	11
1.4	Research context .....	12
1.4.1	Background .....	13
1.4.2	Facebook .....	15
<b>2</b>	<b>Capture and curation of a data set on Facebook applications .....</b>	<b>21</b>
2.1	Chapter overview .....	21
2.2	Data source .....	24
2.3	Data capture .....	27
2.3.1	Process .....	27
2.3.2	Export file .....	29
2.4	Data curation .....	30
2.4.1	Data import .....	30
2.4.2	Data manipulation .....	32
<b>3</b>	<b>Descriptive analysis of secondary interdependencies .....</b>	<b>38</b>
3.1	Chapter overview .....	38
3.2	Sample .....	40
3.3	Description of the Facebook platform for applications .....	44
3.3.1	Aggregated supply and demand .....	44
3.3.2	Individual statistics of applications and developers .....	48

3.3.2.1	Application usage .....	48
3.3.2.2	Developer success .....	51
3.4	Analysis of the impact of a policy change on application usage .....	55
3.4.1	Introduction .....	55
3.4.2	Facebook's changes to platform policies .....	55
3.4.3	Analysis and discussion .....	60
3.5	Analysis of the time elapsed between application launches .....	64
3.5.1	Introduction .....	64
3.5.2	Descriptive analysis of developer portfolios .....	66
3.5.3	Determinants of the time between application launches .....	70
3.5.4	Multivariate analysis .....	73
3.5.4.1	Summary statistics .....	73
3.5.4.2	Model specification .....	77
3.5.4.3	Results .....	78
3.5.5	Conclusion .....	85
3.6	Chapter summary .....	87
<b>4</b>	<b>Interdependencies between users .....</b>	<b>88</b>
4.1	Chapter overview .....	88
4.2	Conceptual model and hypotheses .....	90
4.3	Research design .....	95
4.4	Descriptive analysis .....	97
4.4.1	How do users get aware of available applications? .....	98
4.4.2	What drives adoption of applications? .....	99
4.4.3	Who does actively recommend? .....	100
4.5	Multivariate analysis .....	104
4.5.1	Variables .....	104
4.5.1.1	Dependent variables .....	104
4.5.1.2	Independent variables .....	104
4.5.1.3	Control variables .....	105
4.5.2	Model specification .....	107
4.5.3	Results and discussion .....	108
4.5.3.1	Adoption of new products .....	108



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4.5.3.2 Active influence of peers.....	111
4.6 Chapter summary .....	113
<b>5 Interdependencies between applications .....</b>	<b>116</b>
5.1 Chapter overview .....	116
5.2 Information spillovers on the Facebook platform.....	118
5.3 Empirical approach .....	121
5.3.1 Data.....	121
5.3.2 Methodology.....	127
5.3.3 Specification .....	130
5.4 Results and discussion.....	131
5.5 Chapter summary .....	139
<b>6 Summary and conclusion.....</b>	<b>144</b>
<b>References.....</b>	<b>149</b>
<b>Appendix.....</b>	<b>161</b>
A. Appendix for chapter 3.....	161
B. Appendix for chapter 4.....	165
C. Appendix for chapter 5.....	167

## Table of figures

Figure 1: Schematic illustration of Facebook as a multi-sided platform.....	16
Figure 2: Facebook timeline with important milestones .....	18
Figure 3: Screenshot of the Facebook application directory with 22 categories.....	25
Figure 4: Screenshot of exemplary application directory page .....	26
Figure 5: Flowchart of process and resources of the data capture process.....	28
Figure 6: Overall usage of Facebook applications including benchmark for outliers..	33
Figure 7: Distribution of gaps in the data by size of application.....	35
Figure 8: Supply of and demand for applications on the Facebook platform .....	46
Figure 9: Market concentration of applications in sample .....	50
Figure 10: Market concentration of developers in sample .....	53
Figure 11: Frequency distribution of developers' portfolio size .....	67
Figure 12: Frequency distribution of elapsed time between application launches.....	74
Figure 13: Decisions in network markets in the presence of social influence. ....	91
Figure 14: Number of recommendations sent to peers (by gender) .....	101
Figure 15: Application categories for sample for information spillover analysis .....	123
Figure 16: Time elapsed between application launches .....	126
Figure 17: Backward spillovers (fixed-effects estimation) .....	133
Figure 18: Backward spillovers (fixed-effects panel, reduced sample) .....	138
Figure 19: Time patterns of backward spillovers (OLS estimation) .....	170
Figure 20: Time patterns of backward spillovers (OLS with additional covariates)..	171
Figure 21: Time patterns of backward spillovers (first-difference panel model).....	172

## Table of tables

Table 1: List of variables of application-centric data set.....	31
Table 2: Overview of sample reduction.....	43
Table 3: Summary statistics of maximum application usage.....	48
Table 4: List of most successful applications in the sample.....	49
Table 5: Summary statistics of maximum application usage by developer.....	51
Table 6: List of most successful developers in the sample.....	54
Table 7: Usage for applications launched before and after the policy change.....	62
Table 8: Frequency distribution of entry order of application in portfolio.....	73
Table 9: Summary statistics for explanatory variables of elapsed time analysis.....	76
Table 10: Results of Cox Model on time elapsed between application launches.....	79
Table 11: Results of Cox Model (incl. policy change (i.e. PC)).....	83
Table 12: “How did you first take notice of the application?”.....	98
Table 13: “Please specify how you found out about the application”.....	99
Table 14: “What was the main trigger to add the application?”.....	100
Table 15: Active influencers by gender.....	100
Table 16: Perception of the application by influencing behavior.....	102
Table 17: “Please indicate your motivation to tell someone about the application”..	103
Table 18: “What channels did you use to tell about the application?”.....	103
Table 19: Results from a Probit analysis of application adoption decisions.....	110
Table 20: Results from a Probit analysis of peer influence decisions.....	113
Table 21: Summary statistics of applications in the sample.....	125
Table 22: Summary statistics of application usage (by time on platform).....	161
Table 23: Summary statistics of developer success (by time on platform).....	162
Table 24: Summary statistics portfolio vs. single-app developers.....	163
Table 25: Correlation matrix for variables of elapsed time analysis.....	164
Table 26: Adoption model: summary statistics for regressors.....	165
Table 27: Active influence model: summary statistics for regressors.....	165
Table 28: Correlation matrix for variables of adoption model.....	166
Table 29: Application categories for sample for information spillover analysis.....	167
Table 30: Results of a reduced Cox Model (coefficients).....	168
Table 31: Results of a reduced Cox Model (marginal effects).....	168
Table 32: Fixed-effects panel regression results for backward spillovers.....	169

## Table of abbreviations

### Abbreviations used in the text

API	application programming interface
ATE	average treatment effect
CEO	Chief Operating Officer
CSV	comma-separated values
e.g.	for example
HHI	Herfindahl-Hirsch-Index
HTML	hyper text markup language
i.e.	that is
OLS	ordinary least squares
PHP	hypertext preprocessor
RCM	Rubin causal model
s.d.	standard deviation
SQL	structured query language
WOM	word-of-mouth

### Abbreviations used in result tables

‘000s	in thousands
‘00s	in hundreds
accum.	accumulated
app	application
dev	developer
N	number (of observations), frequency
num.	number
prev.	previous
S.D.	standard deviation

*Note:* Symbols used in formulas are defined when they occur.