Part I Basics

1	The Rules in the Software Industry				
	1.1		are and Software Markets: Unique Characteristics		
			Software Industry	3	
	1.2		eginnings of the Software Industry	4	
	1.3		of Software Provider and Users' Selection Criteria	4	
		1.3.1	Software Providers in the Wider and Narrower Sense	4	
		1.3.2	The Selection of Software	9	
	1.4				
	1.5				
2	Eco	nomic l	Principles in the Software Industry	19	
	2.1	Proper	rties of Digital Goods	19	
	2.2				
		The V	Vinner Takes it All	20	
		2.2.1	Network Effects: Basics and Definitions	21	
		2.2.2	Impact of Network Effects on Software Markets	23	
		2.2.3	Structure of Software Markets	26	
		2.2.4	Network Effects as a Competitive Factor	27	
		2.2.5	A Case Study: Two-Sided Network Effects and		
			Platform Strategies in the Digital Games Industry	29	
		2.2.6	Limitations of Network Effect Theory	32	
	2.3			33	
		2.3.1	Approach and Background	33	
		2.3.2	The Central Standardization Problem as		
			An Optimization Problem	36	
		2.3.3	The Decentralized Standardization Problem:		
			A Game Theoretical Approach	37	



viii Contents

	2.4	2.3.4 Transc	The Standardization Problem: Lessons Learned action Cost Theory: In Search of the Software	40	
	۷,7		Boundaries	41	
		2.4.1	Starting Point and Elements of Transaction	71	
		2.4.1	Cost Theory	42	
		2.4.2	Division of Labor Among Companies:	72	
		2.7.2	A Transaction Cost Theory Perspective	44	
		2.4.3	Structural Changes to Transaction Costs:	-1-1	
		2.7.3	The Move to the Middle	45	
		2.4.4	Excursion: Intermediaries and Transaction Costs	46	
	2.5		are Development as a Principal-Agent Problem	47	
	2.3	2.5.1	Incentive-Compatible Compensation	7,	
		2.3.1	and Efficient Control	47	
		2.5.2	Principal-Agent Relationships: Definitions	7,	
		2.3.2	and Basic Principles	48	
		2.5.3	Incentive-Compatible Compensation Schemes	49	
		2.5.4	Control Systems	52	
		2.5.7	Control bystems	32	
3	Soft	ware V	endor Strategies	55	
	3.1		eration and Acquisition Strategies	55	
		3.1.1	Cooperation in the Software Industry	55	
		3.1.2	Mergers and Acquisitions in the Software Industry	64	
	3.2	Sales Strategies			
		3.2.1	Structuring of Sales Systems: Organization and Sales		
			Channels in the Software Industry	71	
		3.2.2	Organization of Relationships with Sales Partners		
			and Key Accounts	75	
		3.2.3	Key Performance Indicators as a Sales Performance		
			Management Tool in the Software Industry	77	
	3.3	Pricin	g Strategies	81	
		3.3.1	Background	81	
		3.3.2	Pricing Models for Software Products	82	
		3.3.3	Pricing Strategies of Software Providers:		
			Empirical Findings	96	
		3.3.4	Approaches to Pricing for Custom Software Providers	99	
	3.4	Devel	opment Strategies	101	
		3.4.1	Structuring of the Software Development Process	101	
		3.4.2	Software-Supported Software Development	105	
		3.4.3	HR Management in Software Development	107	

Contents

ix

Part	II	Spe	ecific	Issues
------	----	-----	--------	---------------

4	Out	sourcin	g and Offshoring of Software Development	113
	4.1	Overv	iew	113
	4.2	Forms	s of Outsourcing and Offshoring	114
	4.3	Motiv	es for Outsourcing and Offshoring	117
		4.3.1	Cost Savings	117
		4.3.2	Greater Flexibility	119
		4.3.3	Concentration on Core Competencies	119
		4.3.4	Acquisition of Knowledge and Skills	119
		4.3.5	Exploitation of the "Follow-the-Sun" Principle	120
	4.4	Select	ion of Locations by Software Providers	120
			urcing by Software User Organizations	123
		4.5.1	Outsourcing of the Development	
			of New Custom Software	123
		4.5.2	Outsourcing Modifications to Standard Software	126
		4.5.3	Outsourcing the Further Development and Maintenance	
			of Application Software	129
		4.5.4	User Satisfaction with Onshore, Nearshore,	
			and Farshore Providers	133
	4.6	Nears	horing Versus Farshoring: Distance from the Customer	
		as a S	Success Factor?	134
		4.6.1	Cultural and Language Barriers in Offshore Projects	134
		4.6.2	The Importance of Face-to-Face Meetings	
			to Project Success	136
		4.6.3	Time Difference: Challenges and Opportunities	137
	4.7	urcing by Software Providers	139	
		4.7.1	The Status Quo of Specialization and the Division	
			of Labor: Insights from Three Case Studies	139
		4.7.2	Future Division of Labor in the Software Industry	146
5	Plat	form C	Concepts	155
	5.1	Overv	riew	155
	5.2	Produ	ct Platforms in the Software Industry	155
		5.2.1	Cost Structure of Platform-Based Software	
			Development	155
		5.2.2	Organizational Support for Implementing	
			Product Platforms	159
		5.2.3	Add-on: Industrialization as a Management	
			Concept for the Software Industry	159
	5.3	Indust	try Platforms in the Software Industry	162
		5.3.1	Openness of Industry Platforms	162
		5.3.2	Management of Complementors	165

6	Software as a Service: The Application Level of Cloud Computing				
		•			
	6.1	Overview	169		
	6.2	Basic Principles of Cloud Computing	170		
	6.3	SaaS: Applications and Examples	174		
	6.4	SaaS from the User's Perspective: Opportunities and Risks	176		
		6.4.1 Background	176		
		6.4.2 Empirical Study on Opportunities and Risks			
		for SaaS Users	180		
	6.5	SaaS from the Provider's Perspective: Pricing Strategies			
		and Business Models	183		
		6.5.1 Basic Considerations	183		
		6.5.2 Empirical Study of SaaS Providers' Pricing			
		Strategies and Business Models	184		
		6.5.3 Case Study to Compare Usage-Based and			
		Usage-Independent Pricing Models	187		
7	Open Source Software				
	7.1^{-}	Overview	191		
	7.2	Features of Open Source Software	191		
	7.3	Open Source Projects: Principles and Motivation			
		of Software Developers	196		
		7.3.1 Organizational Structures and Processes			
		in Open Source Projects	196		
		7.3.2 Contributor Motivation	197		
	7.4	Open Source Software: The User Perspective	199		
	7.5	Commercial Software Vendors' Involvement	200		
	7.6	Open Source ERP Systems	202		
	7.0	Open Source Like Systems	202		
Re	feren	nces	211		
In	dev		221		