

# Table of contents

<b>1</b>	<b>Introduction.....</b>	<b>1</b>
1.1	Research problem .....	1
1.1.1	Central problem: Allocation of scarce resources in Research & Development.....	1
1.1.2	Reorganisation concepts – trend towards internal markets .....	4
1.1.3	Are market-like forms of resource allocation suitable for R&D resource allocation? .....	6
1.2	Generic research questions and objectives.....	7
1.3	Research methodology.....	8
1.4	Outline of the thesis .....	13
1.5	Conclusions .....	17
<b>2</b>	<b>Literature review.....</b>	<b>19</b>
2.1	Introduction and fundamentals .....	19
2.2	State of the art of R&D resource allocation.....	26
2.2.1	Hierarchical allocation .....	26
2.2.1.1	Organisational structure of R&D .....	26
2.2.1.2	Decision-maker and/or decision-committees and R&D project organisation .....	27
2.2.1.3	The hierarchical decision process .....	29
2.2.1.4	Decision instruments.....	30
2.2.2	Recent developments .....	32
2.3	New trend: Internal markets .....	34
2.3.1	History of the internal market concept and definitions .....	34
2.3.2	The centralised resource allocation via internal markets.....	37
2.3.3	The decentralised resource allocation via internal markets.....	38
2.3.4	The R&D resource allocation via internal markets .....	41
2.4	Theoretical underpinnings .....	42
2.4.1	Contributions of traditional organisation theories .....	43
2.4.1.1	Overview of traditional organisation theories.....	43

2.4.1.2	Critical appraisal .....	47
2.4.2	Contributions of the neoclassical approaches .....	48
2.4.2.1	Foundations of the theory .....	48
2.4.2.2	Assumptions and conditions .....	50
2.4.2.3	Internal efficiency and allocative efficiency as combined efficiency criterion .....	51
2.4.2.4	Critical appraisal .....	52
2.4.3	Contributions of property rights theory.....	60
2.4.3.1	Foundations of property rights theory.....	60
2.4.3.2	Assumptions and conditions .....	61
2.4.3.3	Losses of welfare due to external effects and transaction costs as efficiency criterion .....	62
2.4.3.4	Critical appraisal .....	63
2.4.4	Contributions of transaction cost theory .....	65
2.4.4.1	Foundations of transaction cost theory .....	65
2.4.4.2	Assumptions and conditions .....	66
2.4.4.3	Transaction costs as efficiency criterion.....	68
2.4.4.4	Critical appraisal .....	69
2.4.5	Contributions of principal agent theory .....	73
2.4.5.1	Foundations of principal agent theory .....	73
2.4.5.2	Assumptions and conditions .....	74
2.4.5.3	Agency costs as efficiency criterion .....	75
2.4.5.4	Critical appraisal .....	76
2.4.6	Contributions of the value management approach .....	77
2.4.6.1	Foundations of the theory .....	77
2.4.6.2	Assumptions and conditions .....	78
2.4.6.3	Expected future cash flows as efficiency criterion .....	79
2.4.6.4	Measures of value-added as efficiency criterion of alternative forms of resource allocation.....	80
2.4.6.5	Critical appraisal .....	81
2.5	Conclusions .....	82

<b>3</b>	<b>Methodology .....</b>	<b>86</b>
3.1	Introduction .....	86
3.2	Conceptual framework.....	87
3.2.1	Research problem and research questions .....	87
3.2.2	Necessity to develop a conceptual framework for the empirical studies.....	88
3.2.3	Reference model: External markets .....	88
3.2.4	Market-like elements within R&D resource allocation.....	90
3.2.5	Summary and resulting definition of an internal R&D market ...	99
3.3	Data requirements .....	100
3.3.1	Qualitative data .....	100
3.3.2	Quantitative data .....	102
3.4	Mixed-method approach.....	105
3.5	Case study research.....	108
3.5.1	Definition and application of case studies.....	108
3.5.2	Design and implementation of case studies.....	110
3.6	Survey .....	113
3.6.1	Research model .....	113
3.6.2	Research arrangements and instruments .....	115
3.6.3	Investigation objects.....	118
3.6.3.1	Population and sampling procedure .....	118
3.6.3.2	Response rate and representative aspects.....	120
3.6.3.3	Presentation of findings and statistical procedure.....	122
3.7	Group interviews .....	123
3.8	Ethical considerations and delimitations .....	126
3.9	Methodological limitations .....	129
<b>4</b>	<b>Findings of the case studies (cross-case analysis) .....</b>	<b>137</b>
4.1	Introduction .....	137
4.2	Characteristics of R&D project types .....	138
4.3	R&D organisation.....	142
4.4	R&D resource allocation .....	145

4.5 Allocation result .....	157
4.6 Summary and statement of hypotheses.....	159
<b>5 Findings of the survey.....</b>	<b>163</b>
5.1 Introduction .....	163
5.2 Characteristics of R&D project types .....	167
5.3 R&D organisation.....	184
5.4 R&D resource allocation .....	191
5.5 Allocation result .....	198
5.6 Summary and discussion of results.....	209
<b>6 Findings of the group interviews .....</b>	<b>218</b>
6.1 Introduction .....	218
6.2 Characteristics of R&D project types .....	218
6.3 R&D organisation.....	220
6.4 R&D resource allocation .....	221
6.5 Allocation result .....	225
6.6 Summary.....	227
<b>7 Conclusions.....</b>	<b>230</b>
7.1 Main results .....	230
7.2 Policy recommendations.....	240
7.3 Critical appraisal.....	249
<b>Appendix 1 – Case studies .....</b>	<b>255</b>
<b>Appendix 2 – Questionnaire.....</b>	<b>289</b>
<b>Appendix 3 – Abstract .....</b>	<b>301</b>
<b>List of figures.....</b>	<b>303</b>
<b>List of tables.....</b>	<b>307</b>
<b>Bibliography .....</b>	<b>309</b>



<http://www.springer.com/978-3-7908-1728-7>

Internal Research & Development Markets

Kasper, E.

2006, XII, 333 p. 62 illus., Softcover

ISBN: 978-3-7908-1728-7

A product of Physica-Verlag Heidelberg