



TABLE OF CONTENT

CHAPTER A	INLAND NAVIGATION AS A SYSTEM	
A1	Significance of Danube Navigation	3
A1	Significance of Danube Navigation	3
A1.1	Inland Navigation Policy in Austria	3
A1.2	European Navigation Policies	6
A1.3	The Advantages of Inland Navigation	7
A1.4	Comparison of the Strengths and Weaknesses of Danube Navigation	10
A2	Transport Route	13
A2.1	Basic Parameters	13
A2.2	Waterway Systems in Europe	15
A2.3	Classifying the Waterways	16
A2.4	The Danube Waterway	20
A2.4.1	Danube Riparian States	21
A2.4.2	Tributaries and Canals	22
A2.4.3	Key Figures and Nautical Characteristics	25
A2.4.4	Nautical Bottlenecks	29
A3	Improvement of the Fairway Conditions of the Danube	37
A3	Improvement of the Fairway Conditions of the Danube	31
A3.1	Motivation	31
A3.2	Integrated River Engineering Project to the East of Vienna	32
A3.2.1	Planning Guidelines	33
A3.2.2	Impact	34
A3.2.3	Implementation	34
A3.2.4	A European Showcase Project	35
A4	Vessel Technology	37
A4.1	Dry Cargo Vessels	37
A4.2	Container Vessels	40
A4.3	Tanker Shipping	41
A4.4	Roll-On/Roll-Off Vessels	43
A4.5	Transporting Heavy Goods	44
A4.6	Pushed Convoy Units	45
A4.7	Innovations in Vessel Technology	48
A5	Ports	51
A5.1	Ports on the Danube	53
A5.2	Transshipment Methods and Transshipment Equipment	57
A5.2.1	Cranes	58
A5.2.2	RoRo-Ramps	60
A5.2.3	Suction and Pumping Equipment	60
A5.2.4	Covered Transshipment	61
A5.2.5	Transshipment Heavy Goods	62
A5.2.6	Conveying and Lifting Machinery	63
A5.3	Types of Warehouses	65
A5.3.1	Examples for Special Warehousing in Austrian Ports	65
A6	Organisation of Inland Shipping Companies	67
A6.1	Carrying out a Transport Contract	69
A6.2	Crew and Work Processes	70
A6.3	Concomitant Services for the Vessel	71
A7	Initial and further Training for Danube Navigation	73
Chapter B	The Market for Danube Navigation	
B1	The Danube as a regional Market of the Future	3
B1.1	Characteristics of this Regional Market	3
B1.2	Economic Development	5
B1.3	Development of Transport Volume	6
B2	Perspectives for Inland Waterway Transport in the Danube Region	9
B2.1	Transport Volume on the Austrian Danube	9
B2.2	General Potential in Danube Navigation	11
B2.3	Industry-Specific Potential for Danube Navigation	14
B2.3.1	Automotive Industry	14
B2.3.2	Paper Industry	15
B2.3.3	Chemical Industry	16
B2.3.4	Waste Transport	17

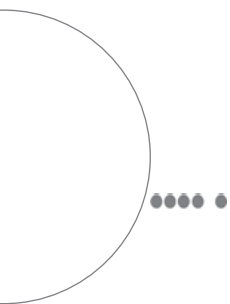
B2.3.5	Agriculture and Forestry	18
B2.3.6	Special Transports	19
B3	Examples for the successful Use of Danube Navigation	21
B3.1	Scheduled Liner Services	21
B3.2	Success Stories	23
B4	Public Funding	31
B4.1	European Union Subsidy Programmes	31
B4.1.1	The Seventh Framework Programme (FP7)	31
B4.1.2	Marco Polo	32
B4.1.3	Cohesion policy	32
B4.1.4	INTERREG III	32
B4.1.5	EU-Programmes for Accession Candidates, Third and Other Countries	33
B4.2	Austrian Subsidy Programmes	34
B4.2.1	Pilot Programme Intermodal Transports	34
B4.2.2	Programme Combined Cargo Transports	35
B4.2.3	Technology Subsidies by the bmvit	35
B4.2.4	Programmes by Austria's Federal Provinces	36

CHAPTER C – INFORMATION- & MANAGEMENT SYSTEMS FOR INLAND NAVIGATION

C1	River Information Services (RIS)	1
C2	River Information Services in Austria – DoRIS	3
C2.1	How DoRIS works	3
C2.2	Benefits of DoRIS	6
C2.3	Introduction of DoRIS	8
C2.4	Equipment programme within the Framework of DoRIS	9
C2.5	Research and Development in the Framework of DoRIS	10
C3	Intruducing RIS in Europe	11
C3.1	European Efforts in the Field of River Information Services	11
C3.2	The European Union's RIS Directive	12
C3.3	The Harmonised Implementation of RIS in Europe	13
C3.4	Introducing RIS in the Danube Countries	13
C4	Integrated Logistics Management	17
C5	Electronic Navigation Charts – ECDIS	21
C6	Port Information & Management Services	23

CHAPTER D – BUSINESS MANAGEMENT ASPECTS OF DANUBE NAVIGATION

D1	Cost Calculations for using the Inland Waterway Vessel on the Main Leg	2
D2	Performing the Calculations	5
D2.1	Draught	5
D2.2	Calculating Travel Time	9
D2.3	Share of Deadheads and other Unproductive Periods	11
D2.4	Loading and unloading Periods	12
D2.5	Standby Costs	12
D2.6	Operating Costs	14
D2.7	Inland Waterway Transport Duties	15
D2.8	Port Fees	16
D3	Calculation Examples	17
D3.1	General Section	17
D3.2	Calculation Examples	20
D3.3	Market Observations	25
D4	Managing Operative Costs	29
D4.1	Contribution Margin Accounting	30
D4.2	Eco-Costing	32
D5	Price Policies – Strategies for Setting Prices & Segmenting the Market	34
D5.1	Price Differentiation	35
D5.2	Price Policy Measures	35
D5.3	Setting Prices – Provisions of the Bratislava Convention	36
D5.4	Reference Prices	36



CHAPTER E – LEGAL FRAMEWORK

E1	Participants and their Scope of Responsibility	1
E1.1	European Union	1
E1.2	Danube Commission	1
E1.3	National Institutions and Authorities	2
E1.3.1	Supreme Shipping Authority	2
E1.3.2	Inland Waterway Supervisory Board	2
E2	National Legislation governing Danube Navigation	3
E2.1	Navigation Act (SchG)	3
E2.2	Inland Waterway Regulation (WVO)	3
E2.3	Transport of Dangerous Goods Act (GGBG)	3
E2.4	Container Safety Act (CSG)	5
E3	Multilateral Agreements in the Danube Region	7
E3.1	Danube Convention	7
E3.2	Bratislava Agreements	7
E3.3	Memorandum of Understanding for Corridor VII	8
E4	Transport Rights	9
E5	Technical Regulations for Vessels	11
E5.1	Rhine Regime and the EU Directive	11
E5.2	Suitability of Danube Vessel for Transport on the Rhine	11
E6	Boatmaster's Certificates	13
E7	Transport Infrastructure	15
E8	Environmental Law	17
E8.1	International Framework	17
E8.2	National Framework	19
E9	Average and Insurance	21
E9.1	Average	21
E9.2	Inland Waterway Transport Insurance	22
E10	Contact Law and Liability Regulations	23
E10.1	Right of Lien	23
E10.2	Strasbourg Convention – CLNI	23
E10.3	Budapest Convention – CMNI	24
E11	Contract Law and Practise	25
E11.1	Contracts of Carriage	25
E11.2	Charter Contract	27
E11.3	Dead Freight	28
E11.4	Multimodal Transport Operators	28
CHAPTER F – APPENDIX		
F1	Glossar	1
F2	Index	15
F3	Abbreviations	23
F4	Inland Navigation in Austria: Contact Addresses	27
F5	Further Information	31
F6	Forms	35
F7	Clearance Height Danube Bridges	51
F8	Frequently Asked Questions	53
F8.1	Danube Waterway	53
F8.2	Inland Waterway Transport	55
F8.3	Cargo Transport on the Danube	57
F9	Maps	5