| Introduction | 1  | 9  |
|--------------|--|----|
| Chapter I.   | Blockchains and DLT in the digital economy | 11 |
|              | Introduction                               | 11 |
|              | Blockchains – a new digital economy?       | 17 |
|              | Introduction                               | 17 |
|              | Trends of the digital economy              | 20 |
|              | DLT and blockchains as a catalyst for lex  |    |
|              | electronica?                               | 25 |
| Chapter II.  | Blockchains, DLT – basic terms.            | 34 |
|              | DLT - distributed ledgers                  | 34 |
|              | Definition                                 | 34 |
|              | Legal definition                           | 36 |
|              | DLT and documents                          | 37 |
|              | Blockchains                                | 40 |
|              | Definition                                 | 40 |
|              | Legal definition                           | 42 |
|              | Blocks                                     | 45 |
|              | Consensus                                  | 47 |
|              | How does it work?                          | 49 |
|              | Types of blockchains                       | 52 |
| Chapter III. | Blockchains in finance                     | 54 |
|              | Introduction                               | 54 |
|              | Blockchains in financial institutions      | 56 |
|              | Bitcoin and its Bitcoin blockchain         | 58 |
|              | Bitcoin - how does its blockchain work?    | 59 |
|              | Bitcoin blockchains - legal issues         | 63 |
|              | Introduction                               | 63 |
|              | License for Bitcoin software               | 64 |



|             | Other contracts within the Bitcoin                      |     |
|-------------|---|-----|
|             | blockchain  | 71  |
|             | Relationships among "miners"                            | 72  |
|             | Mining contracts  | 80  |
|             | Relationships among Bitcoin holders                     | 82  |
|             | Wallets<br>Transfers of bitcoins or other               | 82  |
|             | cryptocurrencies and blockchain records                 | 85  |
|             | Cryptocurrency "exchanges" and buyers                   | 88  |
|             | Blockchains or DLT and electronic money                 | 92  |
| Chapter IV. | Durable media with blockchain technology                | 97  |
|             | Introduction  | 97  |
|             | Term of durable medium                                  | 97  |
|             | Blockchain technology and durable media                 | 102 |
|             | Private or public blockchain as technology for          |     |
|             | durable media?  | 104 |
|             | Use of private blockchains as technology for            |     |
|             | durable media   | 104 |
|             | Use of public blockchains as technology for             | 105 |
|             | durable media<br>Ways of recording documents on durable | 105 |
|             | media   | 106 |
|             | "Forgetting" a document on a durable                    | 100 |
|             | medium  | 108 |
|             | "Providing" a document on a blockchain-                 |     |
|             | based durable medium.                                   | 108 |
| Chapter V.  | "Smart Contracts".                                      | 110 |
|             | Introduction  | 110 |
|             | Definition of a Smart Contract                          | 112 |
|             | From the point of view of the doctrine                  | 112 |
|             | Legal point of view                                     | 115 |
|             | The Notion, Properties and Classification of "Smart     |     |
|             | Contracts"  | 116 |
|             | Notion and properties                                   | 116 |
|             | Classification  | 119 |

|              | Tokens in "smart contracts".   | 123 |
|--------------|--|-----|
|              | Introduction   | 123 |
|              | Definition   | 125 |
|              | Tokens – legal issue   | 127 |
|              | "Smart contracts" as private law   | 131 |
|              | "Smart contracts" and lawyers  | 131 |
|              | Custom, common law, lex mercatoria, arbitration                                    |     |
|              | and smart contracts  | 133 |
| Chapter VI.  | The future of blockchain solutions in legal regulations (an initiated discussion). | 136 |
| Appendix     |  | 141 |
| Bibliography |  | 153 |
| The Author   |  | 159 |