

Contents

About the Author	vii
About the Technical Reviewer	ix
Introduction	xi
Stage I: Terminology and Technical Foundations	1
Step 1: Thinking in Layers and Aspects	3
Step 2: Seeing the Big Picture	9
Step 3: Recognizing the Potential	19
Stage II: Why the Blockchain Is Needed	27
Step 4: Discovering the Core Problem	29
Step 5: Disambiguating the Term	33
Step 6: Understanding the Nature of Ownership	39
Step 7: Spending Money Twice	49
Stage III: How the Blockchain Works	55
Step 8: Planning the Blockchain	57
Step 9: Documenting Ownership	63
Step 10: Hashing Data	71
Step 11: Hashing in the Real World	81
Step 12: Identifying and Protecting User Accounts	93
Step 13: Authorizing Transactions	103
Step 14: Storing Transaction Data	111
Step 15: Using the Data Store	123
Step 16: Protecting the Data Store	135
Step 17: Distributing the Data Store Among Peers	145
Step 18: Verifying and Adding Transactions	153
Step 19: Choosing a Transaction History	165

Contents

Step 20: Paying for Integrity	183
Step 21: Bringing the Pieces Together	189
Stage IV: Limitations and How to Overcome Them.	203
Step 22: Seeing the Limitations	205
Step 23: Reinventing the Blockchain.	213
Stage V: Using the Blockchain, Summary, and Outlook	221
Step 24: Using the Blockchain.	223
Step 25: Summarizing and Going Further	235
Index	249