

Bitcoins:

Mining, Transaction, Security Challenges and Future of This Currency

Muhammad Aslam Zahid

DISSERTATION.COM



Boca Raton

*Bitcoins:
Mining, Transaction, Security Challenges and Future of This Currency*

Copyright © 2014 Muhammad Aslam Zahid

All rights reserved. No part of this book may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without written permission from the publisher.

Dissertation.com
Boca Raton, Florida
USA • 2015

ISBN-10: 1-61233-432-6
ISBN-13: 978-1-61233-432-5

ACKNOWLEDGEMENTS

First and foremost I would like to thank my supervisor Dr. Anton Setzer, for his valuable guidance, encouragement, and for his precious time towards completing my Master's dissertation; and the Rev Mark Williams for his proof-reading. Finally, I would like to thank my family who have supported to complete this dissertation. Without their assistance this work would not have been possible (Heelan, 2009).

Name:

Student No.....

Signature: _____

Table of Contents

Acknowledgements	6
Table of Contents	7
Abstract	12
Chapter 1	13
1.1 Introduction	13
1.2 Motivation	15
1.3 Founder of Bitcoins	16
1.4 Bitcoin and other virtual currencies	18
1.4.1 Crypto-Currencies Market Capitalization	19
Chapter 2	20
2.1 Obtaining Bitcoins.....	20
2.1.1 Bitcoins Mining	21
2.1.2 Bitcoin Minig Procedure	22
2.1.3 Merkle Root Tree.....	25
2.1.4 Block Hashing Algorithm.....	26
2.1.5 Bitcoin Mining Complexity.....	27
2.1.5.1 Bitcoin Difficulty History	31
2.1.6 Mining With a Pool	31
2.1.7 Solo Mining	33
2.1.8 Hash Rate.....	34
2.1.9 Electricity Consumption	36

2.1.9.1 Bitcoin Mining Calculator	37
2.1.10 Bitcoin Mining Algorithm	37
2.1.10.1 Weakness of Minig Algorithm.....	38
2.2 Buyig/Selling Bitcoins	40
2.2.1 Buying on Exchange.....	40
2.2.1.1 Credit Card.....	40
2.2.1.2 PayPal.....	41
2.2.1.3 Bank Transfer.....	41
2.2.1.4 Via Money Gram	41
2.2.1.5 Bitcoin Exchange	41
2.3 Selling Bitcoins	42
2.3.1 Physical Trading	42
2.4 Bitcoins Mining Hardware	42
2.4.1 GPO Mining.....	43
2.4.2 FPGA Bitcoin Mining.....	43
2.4.3 ASIC Mining Harware	43
2.5 Bitcoins Mining Software	44
2.5.1 Easy Miner	44
2.5.2 BitMiner.....	45
2.5.3 CGMiner	45
2.5.4 Poclbn	45
2.5.5 DiabloMiner	46
2.6 Digital Wallet	46
2.6.1 Types of Digital Wallet	47
2.6.1.1 PayPal.....	47
2.6.1.2 MasterCard.....	47
2.6.1.3 Google Wallet	48