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Telehealth Practice and the Impact of New Technologies (NTs)

A thesis submitted to
The Institute of Information and Mathematics Sciences (IIMS)
at Massey University in Albany campus
in partial fulfilment of the requirements for the degree of
Masters of Information Technology
Albany, Auckland, New Zealand

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October, 2012

Abstract

Telehealth aims at delivering healthcare services equally to all citizens whether in rural or urban areas. As delivering healthcare services remotely depends substantially upon technology, and with the ever-increasing improvements of new technologies (NTs), telehealth facilities can be distantly, ubiquitously, more rapidly, and cost-effectively delivered to patients to obtain better quality healthcare services. The objective of the study was to identify the impact of NTs on the contemporary telehealth practice as well as briefly evaluating telehealth practice in several developed countries and attempting to propose a proper strategy for developing nations. In addition, advantages and barriers of telehealth were considered. An online survey was carried out and distributed to a convenience sampling which included 49 participants of healthcare professionals to achieve their attitudes and viewpoints about the impact of NTs to the current telehealth practice. However, results demonstrated that modern smart phones and tablets such as iPhones, iPads and Samsung Galaxy taps are of the most used technologies in telehealth practice and participants reported that these technologies are very important in providing quality services. Additionally, almost all participants believed that the use of technological devices will lead to improvements in the quality of care as well as reducing both clinical and travelling costs. Some advantages of using NTs in telehealth and several barriers, that may bound the development of telehealth process, were also mentioned. A suggested telehealth strategy for developing countries was illustrated in this study. It is recommended that effective steps should be taken to remove the barriers that are hindering the progress of modern telehealth practices. As well as, necessary policy changes should be made to cover the cost of telehealth equipments in the health board budgets.

Acknowledgements

By the name of Allah, the most gracious and the most merciful

First and foremost, I would like to praise Allah the Almighty, who has assisted me and provided me with grace and blessings to accomplish this dissertation.

I also would like to convey my appreciation to many people for their love, contribution, help, encouragement, and direction to achieve this thesis.

I particularly and firstly would like to show gratitude to my affectionate parents: my father, Abdullah Alghamdi, and my mother, Azla Alghamdi, for their continuous prayers, encouragements, and substantial efforts to make me who I am today. In addition, I thank all my supportive brothers and sisters for their aid and encouragement. I owe my intimate appreciation, esteem, and love to them all. To them all, I dedicate this dissertation.

I am extremely grateful to my supervisor, Professor Tony Norris from Massey University, whose incessant assistance, suggestions, and support aided me all through my study. His broad knowledge and experience have been greatly valuable to me.

Additionally, I would like to express my gratitude to my two flatmates: Raed Alghamdi and Abdulgader Bukari, for creating the right atmosphere for me and helping me to complete this thesis. Also, I thank all the participants of this research; without their participation, the study would not be accomplished.

Rajeh Abdullah ALGHAMDI, 2012

Table of contents

Abstract ..... **ii**

Acknowledgements ..... **iii**

Table of contents ..... **iv**

List of Figures ..... **ix**

Table of Abbreviations ..... **xi**

Chapter 1: Introduction **1**

1.1. Background 1

1.2. Definition of Telehealth 1

1.3. Telehealth Subsets 2

1.3.1. Telemedicine 2

1.3.2. telecare 3

1.4. The NTs and their Contributions to Telehealth 3

1.5. Dissertation Objectives 5

1.6. Study Importance and Contribution 5

1.7. Research Questions 5

1.8. Study Scope and Structure 6

Chapter 2: Literature Review **7**

2.1. Subsets of Telehealth 7

2.1.1. Telemedicine 7

2.1.2. Telecare 11

2.2. Telehealth Benefits 13

2.3. Telehealth Barriers 14

2.4. International Telehealth 16

2.4.1. Telehealth in the USA 17

2.4.2. Telehealth in Australia 21

2.4.3. Telehealth in NZ 24

2.4.4. Telehealth in Malaysia 28

2.5. Older and Existing Technologies 31

2.5.1. 2G Networks Limitations 31

2.5.2. 3G Networks Limitations 32

2.5.3. Mobile Technologies 32

2.5.4. Contributions of the Older Technologies 35

2.6. NTs 35

2.6.1. 4G Networks 35

2.6.2. LTE Networks 36

2.6.3. Videoconferencing Technologies 37

2.6.4. Video Streaming Websites 37

2.6.5. New Mobile Technologies 38

2.6.6. SF Technologies 39

2.6.7. Social Networks 40

2.7. A Comparison Between OTs and NTs 41

Chapter 3: Methodology 43

3.1. Type of Research 43

3.2. Ethics Approval 43

3.3. Survey Approach 45

3.4. Sampling 46

3.5. Data Sources 47

3.6. Approach of Selecting Used References 48

Chapter 4: Results 49

4.1. Survey Results 49

4.1.1. Basic Information Page(Q1 to Q5) 49

4.1.2. Impact of NTs on Telehealth Practice Page 1(Q6 to Q15) 51

4.1.3. Impact of NTs on Telehealth Practice Page 2(Q16 to Q25) 57

Chapter 5: Findings and Discussion 66

5.1. Findings 66

5.1.1. Survey demographics 66

5.1.2. Preferred NTs and Usage 68

5.1.3. Privacy and Security 70

5.1.4. Usability Issues 71

5.1.5. Cloud Facilities 72

5.1.6. Impact of NTs 72

5.1.7. NTs and Quality of Care 75

5.1.8. The Future 78

5.1.9. Barriers 79

5.2. Telehealth and ICTs 80

5.2.1. Telehealth and Big Data 81

5.2.2. Impact of NTs on Telehealth Practice 83

5.3. A Great Example of Telehealth Systems, Docobo System 88

5.4. Diffusion of Telehealth 89

5.5. Barriers to Telehealth 94

5.5.1. Acceptance Barriers 94

5.5.2. Legal Barriers 95

5.5.3. Ethical Barriers 95

5.6. A Suggested Strategy for Developing Countries 96

5.7. Study Limitations 98

Chapter 6: Conclusions and Recommendations 101

6.1. Conclusion 101

6.2. Recommendations 102

6.3. Future Work 103

Appendixes 105

Appendix A 105

The ethics approval 105

Appendix B 115

Online survey scans..... 115

References 121

List of Figures

Figure 1: illustrating the median age of New Zealanders. Adapted from (New Zealand Statistics) 25

Figure 2: illustrating death rates for each age group for the years 1900, 1960 and 2000. Adapted from (New Zealand Statistics) 25

Figure 3: illustrating response counts and percentages for Q6 52

Figure 4: illustrating response counts and percentages for Q7 52

Figure 5: illustrating response counts and percentages for Q8 53

Figure 6: illustrating results for Q10 54

Figure 7: illustrating results for Q11 55

Figure 8: illustrating results for Q12 55

Figure 9: illustrating results for Q13 56

Figure 10: illustrating results for Q14 56

Figure 11: illustrating results for Q15 57

Figure 12: illustrating results for Q16 58

Figure 13: illustrating results for Q17 59

Figure 14: demonstrating answers for Q17 by age groups 60

Figure 15: illustrating results for Q18 60

Figure 16: illustrating results for Q19 61

Figure 17: illustrating results for Q20 62

Figure 18: illustrating results for Q21 62

Figure 19: illustrating results for Q22 62

Figure 20: illustrating results for Q23 63

Figure 21: Big data promotes growth. Adapted from (xPatterns, 2012) 82

Figure 22: RP-7i robot illustrates a real-time consultation. Adapted from Intouch Health (2012) 87

Figure 23: illustrating the adopter levels according to their innovativeness degree. Adapted from (Robinson, 2009) 92

Figure 24: illustrating the Decision-to-Innovation process. Adapted from (Sahin, 2010) 93

Table of Abbreviations

Abbreviation	Definition
NTs	New Technologies
OTs	Old Technologies
ICTs	Information and Communication Technologies
MTs	Mobile Technologies
SF	Store-and-Forward
PDAs	Personal Digital Assistants
RFID	Radio Frequency Identification
USA	United States of America
NZ	New Zealand
NELH	National Electronic Library for Health
NLM	National Library of Medicine
QoS	Quality of Service
WWW	World Wide Web
GDP	Gross Domestic Product
AMA	American Medical Association
ASH	American Society of Hypertension
AHA	American Heart Association
PCNA	Preventative Cardiovascular Nurses' Association
BP	Blood Pressure
BPMC	Blood Pressure Management Centre
BCBSA	Blue Cross Blue Shield Association
EHRs	Electronic Health Records
DoD	Department of Defence
GPs	General Practitioners
TMA	TeleMedicine Australia's website
ViCCU	Virtual Critical Care Unit
HWW	Hospital Without Walls
CSIRO	Commonwealth Scientific and Industrial Research Organization
ABS	Australian Bureau of Statistics
CT	Computed Tomography
MRI	Magnetic Resonance Imaging
FTTN	Fibre To The Node
FTTP	Fibre To The Promises
HFC	Hybrid Fibre-Coaxial
MCPHIE	Mass Customized/ Personalized Health Information and Education
CME	Continuing Medical Education
MSCFA	Multimedia Super Corridor Flagship Application
WAN	Wide Area Network
LAN	Local Area Network
LTE	Long Term Evolution

RTP	Real-time Transport Protocol
SMIL	Synchronized Multimedia Integration Language
RTSP	Real-Time Streaming Protocol
HCI	Human Computer Interface
MUHEC	Massey University Human Ethics Committee
ADHB	Auckland District Health Board
CCDHB	Capital & Coast District Health Board
ODHB	Otago District Health Board
WDHB	Wiakato District Health Board
NHS	National Health Service
VPN	Virtual Private Network
WHO	World Health Organization
GOe	Global Observatory for eHealth
NIH	National Institute of Health
AWS	Amazon Web Services
IDC	International Data Corporation
ATA	American Telemedicine Association