EFFECT OF NON-WORK RELATED INTERNET USAGE ON STIMULATING EMPLOYEE CREATIVITY IN THE SRI LANKAN SOFTWARE INDUSTRY

S.I.P. Gunawardena

(099059)

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Thesis/Dissertation submitted in partial fulfillment of the requirements for the degree Master of Business Administration in Information Technology

Department of Computer Science and Engineering

University of Moratuwa

Sri Lanka

December 2010

DECLARATION

"I declare that this is my own work and this thesis/dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any University or other institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text"

Signature: Date:

"I hereby grant the University of Moratuwa the right to archive and to make available my thesis or dissertation in whole or part in the University Libraries in all forms of media, subject to the provisions of the current copyright act of Sri Lanka. I retrain all proprietary rights, such as patent rights. I also retain the right to use in future works (such as articles or books) all or part of this thesis or dissertation."

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Signature: Date:

"I have supervised and accepted this thesis/dissertation for the award of the degree"

Signature of the supervisor: Date

ABSTRACT

While provision of Internet has become an integral part of work, usage of the organizational Internet resources for non-work purposes has become quite prevalent. There is a wide debate on the dysfunctional as well as the constructive use of non-work related Internet usage at the workplace. Hence, the need was recognized to investigate the effect of non-work related Internet usage on employee creativity stimulation at a time where creative thinking skills are most sought after by employers in the software industry.

The main objective of this research was to determine the effect of non-work related Internet usage on stimulating employee creativity in the Sri Lankan software industry. Drawing from past literature this research proposes six dimensions for measuring creativity stimulation, which include: accessibility to information, intrinsic motivation to execute ideas, curiosity and exploration, independent thinking, collaboration and breaking down technical barriers.

The target population that was considered for the study included all knowledge workers employed in the Sri Lankan software industry which was around 8375. The final survey was conducted through distribution of a research questionnaire among a stratified random sample of 192 respondents.

The findings of the research were partially consistent with the initial predictions which stated a positive effect of non-work related Internet usage on creativity stimulation. A positive effect of non-work related Internet usage was substantiated for creativity stimulation as a whole and for the dimensions: curiosity and exploration, collaboration and breaking down technical barriers. In addition, the research results also provided an exploratory view on the nature of employees' non-work related Internet usage.

In conclusion, this research suggests the potential of non-work related Internet usage in stimulating employee creativity. The findings of the present research contribute to the advancement of the non-work related computing literature and also provide practical insights to software development organizations.

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Keywords: Non-Work Related Computing, Non-Work Related Internet Usage, Creativity Stimulation, Creativity, Sri Lankan Software Industry

ACKNOWLEDGEMENT

First and foremost I offer my sincerest gratitude to my supervisor Dr Sanath Jayasena, for the valuable guidance and advice provided to me throughout this research project.

My sincere thanks go to our research coordinator Dr Chandana Gamage who extended his valuable support in numerous ways. I would also like to thank the Department of Computer Science and Engineering, University of Moratuwa for providing an excellent environment and facilities to complete this research project.

I am indebted to many of my colleagues, friends and relatives who supported me during the data collection process of my research. I am grateful to all the survey respondents who responded to my research questionnaire and provided valuable suggestions during the exploratory study and the pilot survey.

I owe my deepest gratitude to my parents for supporting me throughout this research project. Without their support and encouragement this thesis would not have been made possible.

Finally, I would like to offer my sincere gratitude to all individuals who have not been mentioned here personally, for supporting me in any respect during the completion of this research project.

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

TABLE OF CONTENTS

Declaration ii

Abstract iii

Acknowledgement iv

List of Figures ix

List of Tables x

List of Abbreviations ix

List of Appendices xiv

Chapter 1. Introduction 1

1.1 What Is Non-Work Related Internet Usage? 2

1.2 Creativity and Software Industry 2

1.3 Creativity Stimulation 6

1.4 Research Motivation 8

1.5 Problem Statement 9

1.6 Scope 9

1.7 Research Objectives 10

1.8 Benefits of The Research 11

1.9 Overview of the Research Design 11

1.10 Nature and Form Of Results 12

1.11 Organization of the Thesis 12

Chapter 2. Literature Review 13

2.1 Non-Work Related Internet Usage Phenomenon 13

2.2 Types of Non-Work Related Internet Usage 15

2.3 Impact of NWRIU on Organizations 17

2.4 Non-Work Related Internet Usage and Creativity 19

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

2.5 Creativity in the Modern Age of Internet 19
2.6 Creativity Stimulation 20
2.6.1 Creativity and Accessibility to Information 22
2.6.2 Creativity Stimulation through Collaboration 23
2.6.3 Creativity Stimulation through Curiosity and Exploration 24
2.6.4 Creativity Stimulation through Independent Thinking 26
2.6.5 Creativity Stimulation and Intrinsic Motivation 26
2.6.6 Creativity Stimulation by Breaking Down Technical Barriers 27
2.6.7 Other Creativity Stimulation Factors 28
2.7 Organizational Culture and Creativity 28
2.7.1 Organizational Culture 28
2.7.2 Organizational Culture Assessment Instrument 29
2.7.3 Encouragement of Creativity by the Organization 31
2.8 Personality and Creativity 32
2.8.1 The Big Five Personality Traits 32
2.8.2 Openness to Experience and Creativity 33
2.8.3 Personality and Independent Thinking 34
2.8.4 Myers-Briggs Type Indicator and Independent Personality Type 34
2.9 Summary of Literature Review 35
Chapter 3. Research Methodology 37
3.1 Research Approach 37
3.2 Exploratory Study 37
3.3 Theoretical Framework 39
3.3.1 Schematic Diagram for the Theoretical Framework 41
3.3.2 Description of the Research Variables 42
3.4 Hypothesis Development 46

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

3.5 Questionnaire Development 49
3.5.1 Operationalizing the Research Variables 50
3.5.2 Questionnaire Mapped to the Research Variables 52
3.5.3 Variable Aggregation 54
3.6 Sample Design 55
3.6.1 Sample Size 56
3.6.2 Sampling Technique 57
3.7 Data Collection 59
3.7.1 Preliminary Interviews 60
3.7.2 Pilot Survey 61
3.7.3 Final Questionnaire Distribution 61
3.7.4 Revised Sample Size 62
3.7.5 Stratification of the Revised Sample 63
Chapter 4. Analysis and Discussion of Results 67
4.1 Profile of the Sample 67
4.2 Analysis of Non-Work Related Internet Usage 70
4.2.1 Restrictions on Non-Work Related Internet Usage 72
4.2.2 Online Recreation at the Workplace 73
4.2.3 Job Role and the Nature of Non-Work Related Internet Usage 74
4.3 Analysis of Creative Initiatives Taken By Employees 78
4.4 Descriptive Analysis 78
4.4.1 Non-Work Related Internet Usage 79
4.4.2 Creativity Stimulation 79
4.4.3 Organizational Encouragement towards Creativity 80
4.4.4 Organizational Policies 81
4.4.5 Personal Internet Usage Away from the Workplace 82

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

4.5 Reliability Analysis 86
4.6 Hypothesis Testing 89
4.6.1 Testing For Linearity 89
4.6.2 Testing For Normality 90
4.6.3 Correlation Analysis 91
4.6.4 Testing Hypothesis 1 92
4.6.5 Testing Hypothesis 2 93
4.6.6 Testing Hypothesis 3 95
4.6.7 Testing Hypothesis 4 96
4.6.8 Testing Hypothesis 5 97
4.6.9 Testing Hypothesis 6 98
4.6.10 Testing Hypothesis 7 99
Chapter 5. Conclusions and Recommendations 100
5.1 Review of Results 100
5.2 Recommendations 102
5.3 Limitations and Directions for Future Research 106
5.4 Conclusion 108
References 110
Bibliography 116
Appendices 117
Appendix A - *Questionnaire Distributed During The Exploratory Study* 117
Appendix B – *Frequency Tables For The Demographic Information Of The Sample* 123
Appendix C - *Detailed Statistics For Non-Work Related Internet Usage* 125
Appendix D - *Reliability Of The Measures – SPSS Output* 130
Appendix E – *Cross Tabulations Between Job Role And NWRIU* 132
Appendix F – *Final Questionnaire* 135

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

LIST OF FIGURES

Page

Figure 1.1: Skills That Need Improvement in Employees 6

Figure 3.1: Theoretical Framework 41

Figure 4.1: Gender Composition of the Sample 68

Figure 4.2: Age Composition of the Sample 68

Figure 4.3: Educational Level of the Respondents 69

Figure 4.4: Work Experience of the Respondents 69

Figure 4.5: Scatter Plot between Non-Work Related Internet Usage and Creativity Stimulation 89

Figure 4.6: Normal Q-Q Plot for Non-Work Related Internet Usage 90

Figure 4.7: Normal Q-Q Plot for Creativity Stimulation 91

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

LIST OF TABLES

Page

Table 3.1: Exploratory Study Results 39

Table 3.2: Operationalization of the Research Variables 51

Table 3.3: Questionnaire Mapped to Research Concepts 53

Table 3.4: Variable Aggregation Plan 54

Table 3.5: Variable Aggregation for Creativity Stimulation 55

Table 3.6: Sri Lankan Software Industry - Job Categories 58

Table 3.7: Stratification Plan for the Sample 59

Table 3.8: Final Questionnaire Distribution 61

Table 3.9: Final Questionnaire Distribution 62

Table 3.10: Sample Stratification (Actual) 63

Table 3.11: Stratification Plan for the Revised Sample 64

Table 3.12: Sample Stratification - Deviations 65

Table 4.1: Non-Work Related Internet Usage Statistics 70

Table 4.2: Most frequently used non-work related online activities 71

Table 4.3: Restrictions on Non-Work Related Internet Usage 72

Table 4.4: Restrictions on use of Social Networking 72

Table 4.5: Restrictions on the use of online video sharing 73

Table 4.6: Expectations for Online Recreation at the Workplace 74

Table 4.7: Cross tabulated percentages between extent of downloading software and the job roles 75

Table 4.8: Cross tabulated percentages between extent of online forum participation and job roles 76

Table 4.9: Cross tabulated percentages for the extent of presentation sharing and the job roles 77

Table 4.10: Descriptive Statistics - Creative Initiatives by Employees 78

Table 4.11: Frequency of Creative Initiatives by Employees 78

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Table 4.12: Descriptive statistics for cumulative average of NWRIU 79

Table 4.13: Descriptive statistics for cumulative average of Online Social Media 79

Table 4.14: Descriptive Statistics - Creativity Stimulation Dimensions 80

Table 4.15: Descriptive Statistics - Creativity Stimulation 80

Table 4.16: Descriptive Statistics for Organizational Encouragement towards Creativity 81

Table 4.17: Descriptive Statistics for Organizational Policies 81

Table 4.18: Descriptive Statistics for Organizational Policies - Q42 82

Table 4.19: Descriptive Statistics for Organizational Policies - Q43 82

Table 4.20: Descriptive Statistics for Personal Internet Usage Away from the Workplace 83

Table 4.21: Personal Internet Usage - Daily Usage Statistics 84

Table 4.22: Personal Internet Usage - Other Hours 85

Table 4.23: Nature of Personal Internet Usage away from the Workplace 86

Table 4.24: Cronbach's Alpha value for the dimensions and variables 87

Table 4.25: Reliability statistics for organizational policies prior to deleting item Q44 88

Table 4.26: Item-Total Statistics for Organizational Policies 88

Table 4.27: Correlation Analysis between NWRIU and Accessibility to Information 92

Table 4.28: Correlation Analysis between NWRIU and Intrinsic Motivation 93

Table 4.29: Correlation Analysis between NWRIU and Intrinsic Motivation with controlling variable 94

Table 4.30: Correlation Analysis between NWRIU and Curiosity & Exploration 95

Table 4.31: Correlation Analysis between NWRIU and Independent Thinking 96

Table 4.32: Correlation Analysis between Online Social Media Usage and Collaboration 97

Table 4.33: Correlation Analysis between NWRIU and Breaking down Technical Barriers 98

Table 4.34: Correlation Analysis between NWRIU and Creativity Stimulation 99

Table B.1: Frequency Table for Gender 123

Table C.1: Frequency Table for Instant Messaging 125

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Table C.2: Frequency Table for Personal Emailing 125
Table C.3: Frequency Table for Random Surfing 126
Table C.4: Frequency Table for Online News Viewing 126
Table C.5: Frequency Table for Online Viewing of Journals/Books etc 127
Table C.6: Frequency Table for Online Professional Training 127
Table C.7: Frequency Table for Downloading Software 128
Table C.8: Frequency Table for Online Sports Entertainment 128
Table C. 9: Frequency Table for Participation in E-learning Communities 129
Table C.10: Frequency Table for Online Forums 129
Table D.1: Reliability Measures 130
Table E.1: Crosstabulation between Job Role and Downloading Software 132
Table E.2: Crosstabulation between Job Role and Participation in Online Forums 133

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

LIST OF ABBREVIATIONS

Abbreviation	Description
ICT	Information and Communication Technology
ICTA	Information and Communication Technology
INTP	Introversion, Intuition, Thinking, Perception
IS	Information Systems
IT	Information Technology
MBTI	Myers-Briggs Type Indicator
MIS	Management Information Systems
NWRIU	Non-Work Related Internet Usage
OCAI	Organizational Culture Assessment Instrument
Q&A	Questions & Answers
SLASI	Sri Lanka Association for the Software Industry
SLASSCOM	Sri Lanka Association of Software and Service
SLBDC	Sri Lanka Business Development Centre
SLICTA	Sri Lanka Information and Communication Technology Association
SPSS	Statistical Package For The Social Sciences
Std. deviation	Standard deviation
UNESCO	United Nations Educational, Scientific and Cultural Organization
USA	United Stated of America
U.S.	Unites States

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

LIST OF APPENDICES

Appendices	Description	Page
Appendix A	Questionnaire distributed during the exploratory study of the research	117
Appendix B	Frequency tables for the demographic information of the sample	123
Appendix C	Detailed statistics for non-work related internet usage	125
Appendix D	SPSS output of the reliability measures for the independent, dependent, intervening and moderating variables	130
Appendix E	Cross tabulations between job role and non-work related internet usage	132
Appendix F	Final questionnaire distributed among the survey respondents	135

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk