

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

**Hanging out in a bad neighbourhood:
Does the perceived credibility of online business directories
affect user attitudes toward the services they represent.**

A thesis presented in partial fulfillment of the requirements for the degree of

Master of Information Systems

at Massey University, Albany, New Zealand.

Daron Robinson

2011

Abstract

The effect of aesthetics on the overall credibility of a website is reasonably well studied, but there is little understanding of the degree to which the user's perception of the credibility of a website may result in a transference of attitude to the subject of the website, particularly towards the people, products or services it may represent. This issue is particularly unexplored with regard to web business directories that mediate between users and services and third party advertisers in a Multi Sided Online Market.

This research studies the impact of different qualities of aesthetic appeal, content relevance and content reputability on the user's affect and their perception of the credibility of services represented by such intermediary websites.

Four variations of a fictional web business directory were employed, three of which reduce either the visual appeal or relevance and reputability of content compared to a control version. This website was used by participants in the study to assess the credibility of services depicted on the website while each of the versions was displayed, and to gather qualitative comments.

The results showed a significant impact on user's impressions of the credibility of services shown, especially in the case of the presence of irrelevant advertising, but also in the case of an unattractive intermediary website, demonstrating that users do not consider the services truly distinct from their context, but see them as part of a wider unified social system. Users were found to be judging the implied credibility of all the participants in a Multi Sided Online Market by their associations with each other and also by the aesthetic condition of the marketplace they are mutually inhabiting. This behaviour mirrors similar credibility assessments seen in true social contexts like a physical neighbourhood.

The implications of this result for the designers and owners of Advertising supported and 'Freemium' Online Directories is discussed and directions for future credibility and aesthetic research proposed.

Acknowledgements

I sincerely thank my research supervisor David Paulson for his continued support and guidance over this long campaign.

Thanks also to Darry Forsyth for his invaluable help with my research methodologies, and for recommending the rather excellent book "Discovering Statistics using SPSS (and sex and drugs and rock 'n' roll)".

Thanks to Jodie & John and to Al & Mandy who kindly let me use their houses to get some space alone to concentrate. And also to Shane, from GrabOne.co.nz, who gave me time off to work on my thesis even when there was really no time to spare.

To Jim and Val, who generously assisted us when study was soaking up all my time and eating into our families income, I also offer my humble gratitude.

But above all I thank my wife Alexandra and our children who encouraged and supported me at every step. Without their patience and sacrifice this work would not have been possible.

Table of Contents

1 Introduction	11
2 Literature Review	14
2.1 User Experiences and Attitudes	14
2.1.1 Human-Computer Interaction	14
2.1.2 Defining User Affect	15
2.2 Aesthetics and Affect	17
2.2.1 Aesthetic Models	17
2.2.2 Elements of Aesthetics on the Web	18
2.2.3 Aesthetics and Affect	20
2.3 Mixing the Message	21
2.3.1 The impact of Advertising	21
2.3.2 Advert Avoidance	22
2.3.3 Irrelevant Added Content	23
2.4 The Perception of Credibility	25
2.4.1 Credibility and Trust	25
2.4.2 Aesthetics and Credibility	26
2.4.3 Credibility and Online Personas	26
2.4.4 Reputation Systems	29
2.4.5 Warranting	29
2.4.6 Symptoms of Trustworthiness	30
2.4.7 The Anthropomorphic Web	31
2.5 A Multi Sided Exchange	33
2.5.1 The Two Sided Market Model	33
2.5.2 Online Business Directories	35
2.5.3 A Love - Hate relationship	36
2.6 A Multi Sided Network of Affect	39
2.7 Bad Neighbourhoods on the Web	41
3 Research Design and Methodology	42
3.1 Research Methodology Overview	42
3.1.1 Research Website and Instrument Design	42
3.1.2 Pilot Study	43

3.1.3 2 x 2 Between Groups Study	43
3.1.4 2 x 3 Within Subjects study	43
3.1.5 Qualitative Analysis	44
3.1.6 Previous Research of this Nature	44
3.2 Research Website Design	45
3.2.1 Gathering example designs	45
3.2.2 Design Principles	46
3.2.3 Applying the Design Principles	47
3.3 Research Website Content	55
3.3.1 Types of services listed	55
3.3.2 Content of each listing	56
3.3.3 Gathering sample data for the listings	56
3.4 Adding Advertising	57
3.4.1 Gathering example advertisements	57
3.4.2 Sizes and Types of Advertising	58
3.4.3 Advertisement Characteristics	59
3.4.4 Placement of advertising in the Designs	62
3.5 The Four Completed Designs	62
3.6 Research Instrumentation	65
3.6.1 Survey Form	65
3.6.2 Quantitative Measures - Semantic Differential Scales	66
3.6.3 Qualitative Measures - Free form comment	67
4 Validating the Designs – The Pilot Study	68
4.1 Pilot Study Design	68
4.1.1 Study of Design Features and Ranking	68
4.1.2 Study of Advertising Ranking	70
4.2 Pilot Study Participation	71
4.3 Comparative Website Design Results	71
4.3.1 Semantic Differential Question Results	71
4.3.2 Freeform comments	73
4.3.3 Manual Ranking Results	74
4.3.4 Conclusions of the Website Design Component	75
4.4 Comparative Advertising Results	76
4.4.1 Conclusions of the Advertising Component	76
4.5 Conclusions and modifications to the Website Designs	77
5 Between Groups Research	78

5.1	Between Groups Research Overview	78
5.2	Between Groups Instrument Design	78
5.2.1	Simulating an Online Directory	78
5.2.2	Functionality of the Website	80
5.3	Between Groups Research Results	81
5.3.1	Participants & Recruitment	81
5.4	Analysis	82
5.4.1	Validating the data	82
5.4.2	Validating the survey questions and extracting factors	84
5.4.3	Analysis with Two - Way Independent Factorial Anova	85
5.5	Limitations of this study	87
6	Within Subjects Research	88
6.1	Within Subjects Research Objectives	88
6.2	Within Subjects Research Instrument	88
6.2.1	Counterbalancing	88
6.3	Within Subjects Research Results	89
6.3.1	Participants & Recruitment	89
6.4	Analysis	90
6.4.1	Validating the Data	90
6.4.2	Validating the survey questions and extracting factors	91
6.4.3	Analysis with Two - Way Independent Repeated Measures Anova	92
7	Qualitative Analysis	95
7.1	Nature of Analysis	95
7.2	Coding of Comments	95
7.3	Coding Results	97
7.3.1	Overall Results	97
7.3.2	Results for Between Groups study	98
7.3.3	Results for Within Subjects study	98
8	Discussion	103
8.1	Introduction	103
8.2	Recapitulation	103
8.3	Contribution	104
8.3.1	Implications for Multi-Sided Online Platforms	107
8.3.2	Implications for Affect & Credibility Research	110
8.3.3	Implications for Web Design Practice	110

9 Overall Limitations & Future Research	113
9.1 Limitations	113
9.2 Future Research	115
10 Conclusion	116
11 References	118
Appendix 1 - Design Source Websites	125
Appendix 2 - Pilot Study	132
Appendix 3 - Information, Consent and Survey Forms	134

List of Illustrations:

Illustration 1: HSV Colour Cone	19
Illustration 2: Social-Technical Gap (Whitworth, 2006)	28
Illustration 3: Two Sided Market Model example	34
Illustration 4: Multi Sided Online Market	37
Illustration 5: Multi Sided Network of Affect	39
Illustration 6: Pilot Screenshots	46
Illustration 7: Colour use in the Attractive design	47
Illustration 8: Colour use in the Unattractive design	48
Illustration 9: Contrast use in the Attractive Design	49
Illustration 10: Contrast use in the Unattractive design	49
Illustration 11: Unbalanced shapes in the Unattractive design	50
Illustration 12: Dimensional effects in the Attractive design	51
Illustration 13: Background textures in the Unattractive design	51
Illustration 14: Padding and linespacing in the Unattractive design	52
Illustration 15: Random positioning in the Unattractive Design	53
Illustration 16: Consistent Fonts & Colours in the Attractive Design	53
Illustration 17: Inconsistent Fonts & Colours in the Unattractive Design	54
Illustration 18: Animation in the Unattractive Design	55

Illustration 19: Four common advertising sizes	58
Illustration 20: Online Casino Gambling and Date Hot Russian Girls advertisements	60
Illustration 21: Teeth whitening advertisements	60
Illustration 22: “No Diet” Weight loss advertisements	61
Illustration 23: Free Online Gaming advertisements	61
Illustration 24: “Congratulations, You are a Winner” and “Google pays me \$129 an hour” advertisements	61
Illustration 25: Four final web page designs	64
Illustration 26: Survey form hidden and revealed	65
Illustration 27: Attractive and Unattractive pilot designs	69
Illustration 28: Design reference websites	70
Illustration 29: Advertising Pilot Screens	71
Illustration 30: Original and Final Service Listing Screens	80
Illustration 31: Histograms of 8 semantic differential results	83
Illustration 32: Profile Plot of Appearance * Advertising	86
Illustration 33: Histograms of 8 semantic differential results	90
Illustration 34: Profile Plot of Appearances * Advertisements	94
Illustration 35: Results for incidence and direction of Aesthetic Comments	99
Illustration 36: Results for incidence and direction of Meaning Comments	100
Illustration 37: Results for incidence and direction of Meaning Comments	101

List of Tables:

Table 1: Survey Questions	66
Table 2: Pilot Study Questions	69
Table 3: Pilot Study results for Terrible - Wonderful question (ranked by mean)	72
Table 4: Pilot Study results for Dull - Stimulating question (ranked by mean)	72
Table 5: Pilot Study results for Ugly - Beautiful question (ranked by mean)	73
Table 6: Pilot Study results website * Direction of Comment cross tabulation	74
Table 7: Pilot study results - web page design ranking	75
Table 8: Pilot Study results - Advertisement Ranking	76
Table 9: Skewness and Kurtosis results	83
Table 10: Two way Factorial ANOVA - tests of Between Groups effects	85
Table 11: Skewness and Kurtosis results	91
Table 12: Two way Repeated Measures ANOVA - tests of Within Subjects effects	93
Table 13: Within Subjects Contrasts	93
Table 14: Themes used in coding	96
Table 15: Overall coding results	97
Table 16: Between Groups coding results	98
Table 17: Within Subjects coding results	99