Visualizing complexity in corporate identity on the Internet: an empirical investigation

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Introduction

The visual dominates; the verbal augments (Donis, 1973).

Donis (1973) had long ago argued about the primacy of the visual over the verbal. Indeed reported experiments with fruit juices had unveiled that visual cues override olfactory senses (Blackwell, 1995) – this may become relevant if and when fragrances may be conveyed via the Internet. With the phenomenal rise in the global, cross-cultural Internet use there is an urgency to develop theories on visual impacts (Gordon, 1989) of e-imagery employed such as corporate logos. The Internet is unprecedented as information-intensive, rich (e.g. colors), picture-filled (possibly with new technological developments, cvcn olfactory), a complex environment that reaches out on a global scale, in particular, where images as corporate identity e-logos are being e-designed for certain purposes as in being seen as attractive and so evoke or yield reactions or feelings and perhaps, most importantly, corporate identity e-logos are to draw Internet users’ attention.

Burwick (1997) continues to argue convincingly about the utter disregard of advertisers for the subconscious power of visual messages. Arguably, corporate e-logos are perhaps the most intensely designed visual and – in terms of the amount of the money spent – probably the most heavily promoted imageries on the Internet. Yet in contrast, for instance, with signs (e.g. Demirarasan et al., 1998) there is little systematic, experimental or at least empirically oriented work on how e-imagery such as e-identities is being processed cognitively – for example, do these e-logos appear as being rather complex?

Such work ought to be undertaken, given the already wide and still widening use of the Internet as a medium of corporate communication and in particular by those in technology-related industries. Useful, interesting large-scale work had indeed been undertaken in investigating the reactions of consumers to corporate symbols in terms of a range of attributes, whether these symbols are perceived to be energetic, innovative, honest, professional and friendly (Day and Wilson, 2000). There is thus a dire need for

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understanding the impact of e-imagery on people and in the context of marketing to those potential customers.

The art and science of devising e-logos on the Internet (Russell, 1997) that reflect independent, legal entities or personalities - e-identities - are likely to grow if not leap in significance and may even become a specialty within design by itself. In other words skills of designing e-logos for use in the Internet are emerging to be differentiable clearly from, say, expertise on signage (Worthen, 1999). Even for wired-up communications the Internet as a medium is clearly differentiable from television (Keating, 1997). So there seems to be a case for drawing up guidelines to guide the design of e-logos (Roberts, 1997) - and these should be grounded upon research such as insights gained from experimental or empirically based research.

Pressures too are building up to force firms to embrace newly designed, corporate e-identities rather than reusing the old, print-based design (Beenstock, 1998; Aldersey, 1998). Why? The onslaught of the new economy demands that there be changes in values of firms towards embracing the complex, innovative, dynamic, flexible - qualities found in firms that are operating successfully in new technology. Such changes may best be communicated to customers through designed e-logos.

In this paper we report on our own attempt at implementing experimental studies on the impact of e-logos devised by Asian technology-related firms with operating bases in Singapore. Next we explain in our discussion how we came to derive a set of seven hypotheses as inspired by works drawn from the literature of psychology and marketing.

**Literature and hypotheses**

Perceptual psychologist Gibson (1966) had critiqued experimental data drawing on perceptions through the use of artificial, unrealistically simplified images. He emphasized instead studies using perceptions that utilized, inter alia, actual images - as we do in our study here. As Gibson had rightly pointed out, the world - in our case the Internet universe - is in terms of imagery far more richly, deeply and complexly embedded, configured and structured. One of Gibson’s thrusts was to pursue an understanding of complexity in the imagery appearing out there naturally in the world. Anyone who has had experience with the Internet universe will quickly realize the presence of a rich diversity of imagery - including corporate logos.

We find in the literature, however, little empirical investigations into the possible perceptual impact of such imagery as corporate logos on people. Perceptual impacts of the logo on people - when these are perceived as complex - ought to be interesting. First there are the down-to-earth considerations: is a complex e-logo attractive or seen to be creative? Then there are considerations of design and the psychological.

We may theorize what may possibly contribute to complexity by discussing the roles of corporate logos. Here we explored what design elements contribute to the perceptions of complexity (Johanek, 2000). Although the primary purpose of a corporate logo as a registered trade mark is representational - that of an independent, legal entity - there are possibly other roles for a professionally designed motif.

To fulfill such a role of enabling easy, immediate identification the logo design may be constrained to specific letters, such as a series of letters boldly spelling out in initials the words of a firm as an acronym for its name. Color is another basic element of design. Interesting investigations, for example, had been made into the relationship between visual texture vis-à-vis the color used (Imram, 1999). Another design element is in letters used maybe in conjunction or independently as a symbol to represent the firm. Some symbols may be straightforward, yet others are highly abstract. The use of symbols often renders a logo more complex.

We are interested in the impressions that the sight bites (Colman et al., 1995) of complexity as embedded in e-logos may stimulate in subjects. Symbols as used may reflect on a psychological, perceptual level those qualities with which the firm may desire to be associated, for example, that of being psychologically professional. One other possible role is in the epistemic - to convey information or knowledge, say on the nature of business of the e-entity. Thus from the foregoing discussion we generate a series of
hypotheses related to impacts of perceived complexity:

**H1.** Attractiveness of a logo correlates positively with complexity.

**H2.** Creativity in a logo is correlated positively with complexity.

**H3.** Complexity of a logo is positively correlated with greater use of design elements (e.g. letters).

**H4.** Complexity of a logo is positively correlated with greater use of symbols (often abstract).

**H5.** Complexity of a logo is positively correlated with the greater use of colors.

**H6.** An image of professionalism is positively correlated with complexity.

**H7.** Epistemology as embedded in a logo is positively correlated with complexity.

**Methodology**

To test these hypotheses as derived we derived a methodology that involved simple but controlled experiments on potential customers’ perceptions of complexity in corporate identity logos. Since our interest is in e-identities on the Internet (as seen in e-logos) we institute controls as to the types of subjects (potential customers) and the kinds of firms to be investigated. For firms we confine the selection of our 52 firms to those within the information technology (IT) industry. Our choice of IT industry is based on our considerations that this is the industry where firms are more likely to emphasize their corporate e-identities on the Internet.

White-background show-cards (4 × 6 inches) exhibiting the e-logos (downloaded, printed in original color(s)) of the firms are devised to aid in the data collection process. For each firm we created an individual show-card. Since concepts of professionalism and epistemology – in our case information-technology relatedness – may vary across industries only through such within-the-same industry controls, we are able to meaningfully and reliably test **H6** (whether e-logos convey professionalism) and **H7** (on epistemology as embedded in e-logos).

We randomly selected 50 subjects for our experiments of those who fell within the age range of 16 to 27. This is the age range of the active users of technology products – be these hardware or software or other information technology-related products – and thus likely customers of these technology-based firms as well as being Internet users (Teo, 1998).

To avoid any possible gender bias in perceptions – although males are more likely than females the dominant users of the Internet – we had a balanced mix of both male (56 per cent) and female (44 per cent) subjects.

Since the ability to perceive epistemology (H7) embedded in a logo may be dependent on educational background, we had subjects with a minimum of secondary education. The sample itself was a mix of educational attainments ranging from the secondary (18 per cent), junior college (UK “A” levels; 18 per cent), diploma (28 per cent), undergraduates (30 per cent) and – the highest – university graduates (6 per cent).

We developed as part of the preparation guidelines (see the Appendix) for implementing the experiments as a series of questions being posed to the subjects. Each subject was tested for his/her perceptions individually through personalized interviews. The show-cards were shown to each subject in turn and the responses from the subject were then recorded on special forms designed to capture the perceptions on ratings.

For this paper, we were mainly interested in the complexity effects of the visual patterns (Chechile et al., 1996) as embedded in the e-logos as reflected in the show-cards.

From the data so gathered we then plotted the results as shown here graphically and reported on the co-relational strengths via a range of measures such as Pearson’s parametric $r$, Spearman’s non-parametric rho and Kendall’s tau.

**Results of empirical tests**

**Correlation between attractiveness and complexity**

A positive linear relationship between attractiveness and complexity is seen in Figure 1. The strength of the correlation at statistically significant levels is reflected in three separate measures: Pearson’s $r$ value is 0.872 (sig. 0.01 level) with Kendall’s tau 0.689 (sig. 0.01 level) and Spearman’s rho 0.867 (sig. 0.01 level). **H1** is thus confirmed as attractiveness of the logo is increased as complexity increases.
We speculate that there may well be a threshold value for complexity where attractiveness may begin to drop. This is, however, not seen in Figure 2, suggesting that care had been taken in the design of the logos to ensure that complexity as embedded is kept within bounds.

**Correlation between creativity and complexity**

H2 is confirmed. Indeed evidence suggests creativity is strongly, positively, statistically, high significantly correlated with complexity. These are indicated in the correlation measures – Pearson’s r value of 0.938 (sig. 0.01 level); Spearman’s rho 0.934 (sig. 0.01 level), Kendall’s tau 0.794 (sig. 0.01 level).

We are not implying here that a logo is creative simply because it is complex but simply for our sample of logos perceptions of creative and complex logos tend to go together. Perhaps a complex logo tends to be more expressive compared with simpler ones where there may perhaps be only an abbreviation of the firm’s name. When things are more expressive, people will tend to feel that it is more creative.

**Correlation between complexity and number of letters**

From Figure 3 it is clear that the points are dispersed rather widely. However, their loci are still near to the best-fit line. In other words the relationship is a modest one as reinforced by these scores: Pearson’s r value 0.409 (sig. 0.01 level), Kendall’s tau 0.262 (still sig. 0.01 level) and Spearman’s rho 0.361 (sig. 0.01 level).

Most companies prefer letters to be part of their logo and this less strong than expected result may be explained. More letters render the message explicit, especially if the letters in combination yield a recognizable name.

**Correlation between complexity and number of symbols**

Figure 4 shows clearly that only a minimal number of symbols are used compared with letters. Spearman’s rho is 0.619 (sig. 0.01 level), which is even stronger than Pearson’s r of 0.581 (sig. 0.01 level) with Kendall’s tau 0.508 (sig. 0.01 level). Logos without any symbol tend to cluster around the lower part of Figure 4. They tended to be perceived as less complex. Logos with at least one symbol
Correlation between epistemology and complexity

Points in Figure 7 are relatively more widely dispersed (compared with the previous Figure 6). Still the dots hover around the best-fit line. The relationship between the two may be said to be modestly, positively and statistically significantly correlated. This is reflected across different measures: Pearson’s $r = 0.537$ (sig. 0.01 level), Kendall’s tau $0.402$ (sig. 0.01 level) as well as Spearman’s rho $0.564$ (sig. 0.01 level). In other words embedding epistemology (as in the identity’s nature of business) renders an identity perceived as more complex.

Implications

There are some implications that flowed directly from this work:

- Clearly our research suggests that complexity in an e-logo may both attract and be perceived to be creative. That complexity may be rendered so by greater use in the number of symbols rather than letters but not through more colours.
- Most interestingly, a complex e-logo tends to portray the firm positively as being more professional. Where the e-logo embeds epistemology as in conveying the nature of the firm’s industry (in this case IT), this may entail a more complex logo.
- From these research efforts we also derive further insights.
- The procedure as suggested here may be utilized (Whitehall, 1993) to assess the impact of e-logos on target consumers. By so doing the risks associated with changes of corporate identity are reduced. This is even necessary when the logo for the corporate identity is changed radically (Simms, 1989) so as to convey a change of values.
- One aspect of corporate identity logo that ought to be undertaken is in the longevity of e-logos (McAlhone, 1993) – what are the features of the design elements that last in this rapidly evolving environment of the Internet?
- Or are these changes at intervals to e-identities the right strategy so as to keep up an image with customers that the firm is constantly adapting to changes? In
other words change itself is a good thing if customers see it in a positive light.

- Another aspect that ought to be further explored is the preparedness of Asian technology firms based in Singapore to spend money sprucing up their image through professional design (Wills, 1991; Davies, 1996). What kinds of fees are these firms willing to pay for good design?

- We hope through systematic research to gain glimpses of what may give rise to the perfect e-logo (Chadwick, 1999) – the e-logo with the desired impact.

We look forward to researchers replicating our work in different cultural contexts. Some aspects of the perceptions that we captured here may be culture-specific. For example, whether in a different cultural context a greater use of a range of different colours may render an e-logo perceived as more complex. Far greater attention should be given by firms in placing a logo for the Internet – thus becoming an e-logo – to its likely impact.

References


Gibson, J.J. (1966), The Senses Considered as Perceptual Systems, Houghton-Mifflin, Boston, MA.

Appendix. Guidelines

Attractiveness: how attractive do you find the logo design?
1 – very unattractive . . . 5 – very attractive

Complexity: how complex do you find the design?
1 – very simple . . . 5 – very complex

Creativity: do you find the design creative?
1 – very uncreative . . . 5 very creative

Professional impact: do you feel that this logo will give the company a professional image?
Yes or No

Reminded of IT: does looking at this logo remind you of an IT firm?
Yes or No