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Gender and Web Design: the Implications of the Mirroring Principle For the Services Branding Model

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This paper explores the theoretical and practical implications of the mirroring principle to an understanding of how best to identify and sustain service brands' values. It does this through a focus on the web design aesthetics used in the web sites of small to large companies, and a comparison of these aesthetics with the preferences of target users. A finding of a tendency of the majority of websites to employ what may be termed a 'male design aesthetic', and for men and women to have a differential preference as between the male and female design aesthetic, leads to a discussion of the appropriateness of previous service branding models. These models put the emphasis on having employees develop service branding values. Web design is a contributory factor to service branding and it is argued that it is appropriate to continue to place emphasis on the development of values by employees, whether men or women, so long as their choices reflect the complete range of aesthetic choices available. This amendment constitutes a material change to existing services branding models.

The Internet and Services Branding

The World Wide Web is estimated to double in size roughly every two to three months (Hoffman *et al* 1995) and since 1998 internet use has grown at a rate of 20% per year (Van Iwaarden *et al* 2004). Computer Industry Almanac estimates that the Internet users population reached in 2004 934 million people worldwide and is likely to increase to 1.35 billion in 2007 (Clickz Stats 2005). In terms of its value as a marketing tool, the network does more than just add another selling channel for 'it is estimated to produce ten times as many units [sold] with one tenth of the advertising budget' (Potter 1994), to ease customer retention (Van Iwaarden *et al* 2004) and to facilitate flexible response, an advantage with shrinking product life cycles (IITA 1994). These factors together have worked to 'transform[ed] the way business is conducted' (Grover and Saeed 2004).

Services branding has traditionally relied on importing ideas from the classical goods brand management (Aaker *et al* 2000) and this has resulted in a paucity of research into factors affecting services branding (Van Reil *et al* 2001). This is not because there is no recognition of the importance of service branding. It is recognised that services have a dominant role to play in Western economies (Clifton and Maughan 2000) and that branding, in turn, has an important role to play in the communication of values and culture to consumers and employees

(Wolfinbarger and Gilly 1991; Nguyen and Leblanc 2002).

Branding has been characterised as the process of creating value through the provision of a compelling and consistent offer and customer experience that will satisfy customers and keep them coming back (Aaker 1991; De Chernatony 1992; Kapferer 1992). In the case of e-commerce, one element of this is to enhance the total brand experience (Ibeh *et al* 2005), with positive online experience having a greater impact on e-loyalty and brand equity than traditional attributes such as product selection and price (*ibid*). Relevant factors in enhancing the total brand experience are likely to relate to technical issues (e.g. speed of loading), content (Joergensen and Blythe 2003) as well as form (Schenkman and Jonsson 2000; Lavie and Tractinsky 2004). Where the visual element is concerned, graphics is listed as one of ten factors causing dissatisfaction with users in the US and Netherlands (van Iwaarden *et al* 2004) leading Human Computer Interaction (HCI) specialists to attempt to understand the elements (visual and content) in web design that are valued and those that currently produce a deficit between expectations and experience.

The search for these factors is a prize worth fighting for. Retailing research is driven by the notion that the physical form of a product is an important element in its design (Bloch 1995) and that it creates certain effects in buyers (Kotler 1973-4). It has been found that products perceived as pleasurable are preferred (Yahomoto and Lambert 1994) and used more frequently than those not perceived as pleasurable (Jordan 1998), leading to enhanced purchasing (Groppel 1993; Donovan *et al* 1994). These findings have helped establish store atmospherics as an important field of research study. Values and identities have been extensively studied (Schroeder and Borgerson 1998) but a relatively unexplored field concerns itself web atmospherics and the non-interpretive elements of navigation, content, form and colours. These elements would be part of a communications strategy which, as we have seen, is a constituent part of e-brand building (Ibeh 2005).

Responsibility for e-Branding

As mentioned earlier, there has been a paucity of research into factors affecting services branding (Van Reil *et al* 2001). A recent investigation into the source of the values that communicate and reinforce corporate values (Schein 1984) finds that employees are the primary source for both identifying and developing new services brand (De Chernatony *et al* 2004), with greater impact on shaping a brand's values than in the goods sector (Berry 2000). De Chernatony's model is shown at Figure 1: (Insert Figure 1here.)

The value placed on the contribution of the employees is inspired by the view that it is they who have most knowledge and experience of the brand (Collins and Porras 1998) and though internal senior management that the new brand values can be spearheaded by (Driscoll and Hoffman 1999).

Currently, the majority of senior management in organisations is still male-dominated. During the last decade there has been a dramatic increase in the number of women pursuing managerial and professional careers but they are still experiencing vertical segregation and encountering a 'glass ceiling' in private and public sector organisations in all developed

countries (Burke 2002; Burke *et al* 2002), holding only 32% of managerial positions, and 6% of top directorships in the UK (Vinnicombe *et al* 2002). Their careers are said to advance at slower speeds than men's (Jackson and Hirsh 1991). One of the questions this paper addresses is the implications for the services development model, and the development of successful e-brands, of the male-domination of companies. Given the importance of the interactionist principle (see below), and the evidence for differential reactions between men and women in consumer and e-commerce behaviour (below), the article examines whether the services branding model needs amendment.

The Interactionist Perspective

According to De Chernatony *et al* (2004), consumers will be drawn to services brands that are perceived as having an image encompassing values congruent to their own. This links with the interactionist perspective that considers aesthetic perceptions to be a function of individual perception (Porteous 1996) rather than universal values leading to the search for segmented values (Miller and Arnold 2000; Leong 1997; Flanigan *et al* 2003; Oser 2003). This tradition links, in turn, with the 'empathy principle' according to which aesthetic value does not inhere in objects but is the product of empathy between object, perceiver and artist (Crozier and Greenhalgh 1992). It is not dissimilar to the 'matching hypothesis' or 'similarity-attraction' paradigm in social psychology according to which increased similarity leads to increased attention and attraction (Byrne and Nelson 1965; Silverman 1974; Berscied and Walster 1978).

The interactionist principle raises the theoretical possibility that there may be a plurality of values, with differentiation between the values of employees as well as between the values of employees and customers. This plurality of value may relate to a number of segmentation variables, be it age, nationality, gender, class or occupation. These are currently not reflected in the services branding model. The present article considers the scope for a plurality of values in relation to just one of these factors, gender, and the potential for making amendments to the services brand model in the light of it.

Reasons for considering taking gender as a focus are explored below. This is followed by an exploration of empirical studies showing evidence for a differentiation of web aesthetics according by gender. A discussion of the implications of this empirical work for the services branding model then follows.

The Relevance of Gender

Traditionally, the groupings receiving most attention in interactionist studies have been social class and age, while gender (Hirschman 1983; Kwon and Zmud 1987; Truman and Baroudi 1994) has been sidelined throughout the 1980s and 1990s and recent years. According to a recent study (Wilson 2004), the role of gender and ICT is still 'largely under-theorised' with a 'paucity of treatment of gender issues', on account, arguably, of the belief that 'technology is gender neutral' (*ibid*), a belief reinforced in a recent study of the interaction of gender and e-commerce (Dholakia *et al* 2002).

The paucity of studies examining the impact of gender is concerning for three reasons. Firstly, on account of

the belief that the needs, desires and values of women increasingly drive the political and business worlds (Peters 1996; Leyden and Schwartz 1998; Bennett 1998; Mitchell and Walsh 2004). In view of its criticality, the absence of research focused on gender has led to calls for more research into 'gender effects on IT perceptions and outcomes' (Taylor 2004). The merging equity in terms of men and women's use of the internet underscores such a conclusion. From the UK (Jupiter 2004), research shows that similar proportions of men and women are using the web, with women accounting for about 51% of the total online adult population. European usage reveals female usage of the web to be an average of 38% (Jupiter 2000) with usage at 42% in the UK. Data on the proportion of new users who are male and female, and the frequency of usage are available from the US. One study (Katz *et al* 2001) shows that women constituted the majority of new Internet users during 1997-2000, and a separate study (Ono and Zavodny 2003) showed that by 2000, the online gender gap in the US had disappeared and that women were significantly more likely to use the Internet than men.

The second basis for concern is related to the fact that several commentators rate within-culture dimensions like gender as more important in terms of online usage than between-culture dimensions (Brousseau 2003; Shiu and Dawson 2004). The third reason for concern is related to the fact that researchers (Till and Priluck 2001) argue for its affect on purchase behaviours, responses to advertising, product judgements, affective reactions, information processing and learning.

Whilst commentators may agree on the case for focussing on gender, the problematic nature of such a focus has been noted (Caterall and Maclaran 2002). The difficulties are linked both to the scope of an examination of gender and marketing, and also to the fact that 'researchers working from very different theoretical perspectives can disagree on the meanings of the term' (*ibid*). Interpretations can range from the postmodern view that gender is an unproductive dichotomy (Firat 1994), to the evolutionary psychological perspective that plays down the influence of sociocultural factors, emphasising instead the operation of innate factors (Lupotow *et al* 1995). This latter approach is gaining in popularity in several disciplines and according to recent commentators, should not be overlooked by those researching consumer behaviour, even if this approach restricts the possibilities of social and cultural change (Caterall and Maclaran 2002). In the approach adopted here, the door is wide open to either or both of the sociocultural and evolutionary psychological perspectives.

Gender and IT

The design of websites can most easily be affected by IT professionals. This is a profession in which participation rates for women, across the board, have fluctuated during the 1990s somewhere between 19% and 22% (Robertson *et al* 2001). The position varies only in different parts of the world and different IT specialisms.

In the US, the proportion of women among US computer professionals fell in the 1990s from 35.4% to 29.1%. In the UK, in 1994, women made up 30% of computer scientists, 32% of systems analysts, 35% of computer

programmers, 10% of ISS directors, 18% of project leaders and 14% of applications development managers (Baroudi and Igbaria 1994/5). The trend is downward. The 1980s saw an influx of women into IT, with a fourfold increase between 1980 and 1986 in the number of women awarded bachelor's degrees in computer science, and a three fold increase in the number of women awarded master's degrees (Igbaria *et al* 1997). Recent years have seen a sharp decline in the number of women pursuing degrees in computer-related fields, together with a reduction in the numbers of women taking advanced-degree programmes (*ibid*). In 2002, the following % of male and female employees were reported for the IT profession (Facts about men and women 2002), showing the horizontal and vertical segregation discussed by Robertson *et al* (2001) as applying in academia and business: (Insert Table 1 here.)

According to recent research, one of the effects of the male-domination, vertically and horizontally, of the IT profession is the creation of a "masculine computer culture" that produces a "masculine discourse" and a prioritisation of technical issues, both of which serve to deter women from entering the field (Robertson *et al* 2001). The authors suggest that it is only by including a 'broader set of skills and discursive practices' that a more diverse group of people will be attracted to the field (including a critical mass of women) and that the masculine culture can be altered.

Gender and Web Atmospherics

A growing body of work examines web atmospherics, rooted largely but not exclusively in the universalist paradigm (Kant 1792). This leads to a search for universal rather than segmented aesthetic values with the three major studies in this field have been conducted fairly recently (Schenkman and Jonsson 2000; Van der Heijden 2003; Lavie and Tractinsky 2004). As one might expect of studies anchored within a universalist paradigm, there is an absence of data on website type or designer and in terms of the respondents, an absence of data on their age, gender or participation in particular markets.

Other studies have been anchored in the interactionist paradigm which views aesthetic judgements as a function of individual perception (Porteous 1996). An example, from the field of advertising, is feminist research describing the ideal spectator as male and the standards in advertising measured in respect of reactions from this segment (Schroeder and Borgerson 1998). Interactionist research seeks to understand the reactions of segmentation variables and there have been a number focusing on gender and web atmospherics. Many have small and inadequate sample sizes (Leong 1997; Miller and Arnold 2000; Flanagin *et al* 2003 ; Oser 2003) making it difficult to derive representative conclusions. Two other more recent interactionist studies, both with larger sample sizes, are the focus of the next section.

Interactionist Studies

The two studies (Moss and Gunn 2005; Moss, Gunn and Kubacki, 2006a) examined a normal sample of websites (thirty) in each of three service industries – the Angling industry, the Beauty industry and that of Higher Education (HE). The justification for the focus here on these very different industries is linked to the fact that they have very different markets. The

Angling industry is, for its part, focused largely on a male market. Studies of randomly selected anglers have found them to consist predominantly of men (from 78 – 98%) (Levine *et al* 1999, Kyle *et al* 2004, Hammitt *et al* 2004) and this in line with research on US Anglers that reveals 98.9% of anglers to be male (http://www.anglersnet.co.uk/authors/bruno13.htm). It is in line, also, with recent Government sponsored research revealing that 80% of those participating in Angling are men (Environment Agency 2001) and that 75% of water-based sports participants are men (Water-based sport and recreation 2001).

The Beauty industry, by contrast, is focused largely on a female market. Women are twice more likely than men to have had health and beauty treatment over the past year and are more willing to spend money on it than men (Mintel 2005). The majority of men in the UK have never to have had this kind of treatment (*ibid*). Further analysis of participation rates shows that women are three times more likely than men to have sun tanning, eight times more likely to have eyelashes/eyebrows tinted or shaped, and ten times more likely to have hair-removal treatment. Manicure and pedicure are almost completely dominated by female consumers.

The market for Higher Education, by contrast, attracts roughly equal numbers of male and female undergraduates. Table 2 shows the percentage of women in the student population over a number of years. (Insert Table 2 here.)

Preference tests had revealed an interactive tendency between web production aesthetic (Moss, Gunn and Heller, 2006b) and preference aesthetic

(Moss and Gunn 2005) such that each sex showed a statistically significant tendency to prefer the output of its own gender. These preference tests were conducted with 38 male and 26 female students and the ratings that these students made of the Home pages of sites displaying either the male or the female production aesthetic, showed a significant tendency on the part of the men to ascribe higher ratings to sites exemplifying the male production aesthetic, and on the part of the part of the women a higher tendency to ascribe higher ratings to sites exemplifying the female aesthetic. These results appear to further exemplify the tendency, noted earlier, for consumer preferences to be differentiated along gender lines (Till and Priluck 2001).

An analysis of the websites of the Beauty, Angling and Higher Education sectors was designed to illicit the extent to which they employed a male or female design production aesthetic and, extrapolating from the preference aesthetic results (Moss and Gunn, 2005), the extent to which this matched the aesthetic preferences of the target market. Such a match was found to exist in the case of the Angling industry since this sector's websites display a predominantly male production aesthetic, with an overall male gender coefficient of 0.66, all the while targeting a predominantly male market (Moss, Gunn and Kubacki, 2006). Such a match was not found, however, in the Beauty and HE sectors (Moss and Gunn, 2005; Moss, Gunn and Kubacki, 2006a) since the websites in these sectors employ a predominantly male design aesthetic, with gender coefficients of 0.68 and 0.72 respectively, all the while targeting markets made of largely of women (the case of the Beauty websites) or of an even mixture of men

and women (he case of Higher Education in the UK).

The question of whether websites employ a 'masculine' or 'feminine' aesthetic was based on a consideration of the extent to which the thirteen factors found to differentiate male and female-produced websites (Moss, Gunn and Heller, 2006b) were present in the websites under investigation. Details of the thirteen elements in question are shown in Table 3 below. It should be noted that the original rating of the male and female-produced websites was against 23 factors, thirteen of which showed produced significant differences as between the male and female-produced websites. The extent to which these factors were present in websites was amenable to objective rating, thereby minimising investigators' personal biases (Schroeder and Borgerson 1998) and the selection of the 23 factors was researcher-neutral in being rooted in earlier work. It should be noted that the rating was not carried out by persons involved in the earlier work. (Insert Table 3 here.)

In a further step designed to establish data on the gender of those involved in the design of the sites in the three sectors, telephone interviews were conducted with personnel in the three industries concerned. These interviews revealed that the majority of those involved in the web design had been men. Table 4 shows the proportion of men and women in the design teams in the three industries, the majority of designers being male. These figures are consistent with the statistics regarding the male domination of the IT sector (Baroudi and Igbaria 1994; Igbaria and Parasuraman 1997; Facts about men and women 2002). (Insert Table 4 here.)

Further probing in the course of telephone interviews offered insights into the division of labour between web designers and business personnel, showing that in the Angling firms, exclusive reliance was placed on the design and creative input of the male web designers used. By contrast, in the case of the Beauty salons, business personnel provided a range of creative inputs to the website designs even where a designer had been employed to produce the website. This additional input applied to 73% of the sample surveyed (i.e. 16 respondents) and was provided exclusively by women working in those businesses.

The interviews shed light on the nature of the additional input provided by the Beauty salon personnel. Input fell into one of two categories, either extensive or lesser input. Less than one quarter of the cases fell into the first category, with just after half of all cases in the second. In the remaining quarter of cases, the creative input was taken from ancillary sales materials.

Implications of Difference for the Services Branding Model

The issue arising from the examples quoted in Till and Priluck (2001) as well as the example quoted above lead one to explore the implications for the Services Branding model. The appearance of websites that reflect the preferences of customers (the case to a much greater extent in the Angling websites than in the Beauty and HE websites) is an example of the application of the matching principle which holds that the efficacy of tools or messages can be maximised by ensuring that they contain features that mirror the preferences of the target market (Hammer 1995; Karande *et al* 1997; de Chernatony *et al* 2004). The case of the Beauty and HE websites

could be held up as examples of sites that are suboptimal in their efficacy. How best could the services branding model be modified to ensure optimal efficacy in every case?

The model presented in Figure 2 suggests that a single amendment to the model would ensure maximally effective results, whether or not the causes of the differences are rooted in social or biological factors. It would be sufficient for those identifying brand values internally to be aware of the diversity of potential responses, and to have an understanding of the importance these have, to affect a differential response. Such a solution would mean that the actors in the system could remain constant, provided an injection of education was provided. In the case of web design, the fact that the majority of web designers are male (Baroudi and Igbaria 1994/5; Igbaria *et al* 1997; Robertson *et al* 2001) makes this solution a practical one. More revolutionary, would be to suggest that the actors in the system should be changed to match the end-user, but this is not likely to be practical given the demographics of the industry. (Insert Figure 2 here.)

FURTHER WORK

A further area of study could focus on the extent to which the failure of design targeted at female stakeholders, and observed in the Beauty websites, is generalisable across other industries. If this finding was to be generalised across several industries, then it is possible that this suboptimal use of design could be a factor in the lesser frequency with which women consult the internet (Bimber 2000).

CONCLUSIONS

The mirroring principle suggests that the efficacy of tools or messages can be maximised by ensuring that they contain features that mirror the preferences of the target market. This is based on the notion that products should be shaped around the 'unique and particular' needs of the consumer (Hammer 1995) and that empathy between object, perceiver and artist (Crozier and Greenhalgh 1992) enhances product appeal. Products perceived as pleasurable are preferred (Yahomoto and Lambert 1994) and used more often than those not so perceived (Jordan 1998), leading to enhanced purchasing (Groppel 1993; Donovan *et al* 1994).

A modification to the Brand Services management model suggests a way of ensuring that differential preferences are taken into account in the creation of brand values and that this process follows an evolutionary rather than revolutionary path. It remains to be seen, from further experimental work, as to whether this modification will reap the hoped-for rewards

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│  communications including websites)    │
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     │ Identify internally │──────▶ ┌──────────────────┐
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  │ Turbulence from stakeholders in │◀─╱
  │      diverse environments       │
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  │ Which values to sustain/reject → │
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  │ Programme for sustaining values to │
  │ circumvent failure points          │
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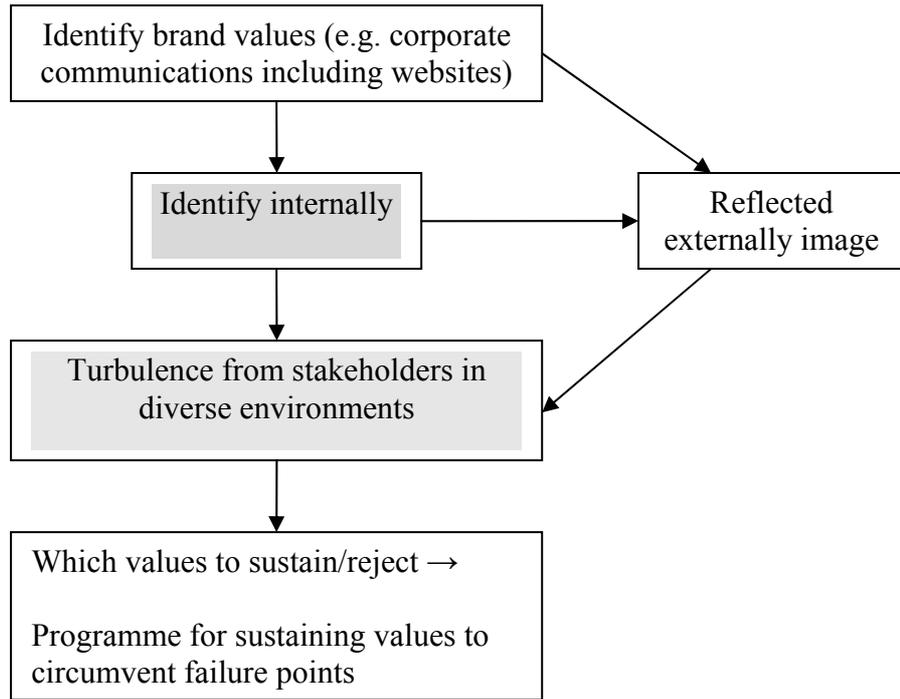
Figure 1: Services brand management model (De Chernatoney 2004)

Occupation	% Males	% Females
Software professionals	84	16
ICT Managers	83	17
IT operations, technicians	71	29

Table 1: % of men and women in the IT profession (Facts about women and men in Great Britain 2002)

	1995/96	1996/97	1998/99	1999/00	2000/01	2001/02	2002/03
Female	50%	53%	52%	53%	53%	53%	53%
Male	50%	47%	48%	47%	47%	47%	47%

Table 2: UK HEIs, full-time undergraduate students by gender 1995–2003 (HESA online statistics)

Categories	Components
Navigation	
Variety of subject matter	Number of separate topics covered throughout the site
Language	
Self-promotion	Whether the site advertises its achievements beyond simply asserting the products / services it offers
Abbreviations	Whether the language includes abbreviations
Expert language	Whether expert language is used for the majority of the pages
Formal language	Whether the language used is formal or informal
Visuals	
Logo	Whether a logo is used
Images	Whether images show males or females
Shapes	Whether there are straight lines across the page
Layout	Whether text is contained within horizontal and vertical lines
Typography	Whether typography is regular or irregular
Typeface colour	Number of typeface colours used
Typeface colour	Type of colours used in the typeface

Table 3: Details of the rating elements used in assessing the design aesthetic of HE, Angling and Beauty websites

Gender of person(s) who undertook the design of the company's website	Angling websites % (No)	Beauty salon websites % (No)	HE websites % (No)
One or more men	77 (34)	78 (37)	74 (38)
One or more women	8 (3)	18 (9)	7 (5)
A man *and* a woman	7 (3)	4 (2)	19 (11)
Interview responses	73 (44)	73 (44)	84 (54)

Table 4: The design history of the HE, Angling and Beauty Salon websites with data deriving from telephone interviews

Figure 2: Modified services brand management model.

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│ Identify brand values (e.g. corporate │
│ communications including websites) │
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┌─────────────────────────────────┐   ┌──────────────┐
│ Identify internally **with reference to**│──▶│  Reflected   │
│ **complete range of customer**          │   │ externally image │
│ **preferences**                         │   └──────────────┘
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┌─────────────────────────────────┐
│ Turbulence from stakeholders in     │
│ diverse environments                │
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                ▼
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│ Which values to sustain/reject →    │
│                                     │
│ Programme for sustaining values to  │
│ circumvent failure points           │
└─────────────────────────────────┘
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