

Institution: BRUNEL UNIVERSITY (H0113)
Unit of Assessment: 19 – Business and Management Studies
Title of case study: Digital Signage for Shopping Malls and Retail Stores
<p>1. Summary of the impact (indicative maximum 100 words)</p> <p>Improvements in digital screen technology early in this millennium facilitated cost effective use of digital signage (DS) (screens in a public place showing video). The problem was that no research was available on the extent to which consumers welcome DS or on the effectiveness of any advertisements transmitted using this medium.</p> <p>Brunel research has led to most UK shopping malls now carrying DS and to retail DS ads using more entertaining or affective content that increases ‘footfall’ to advertisers and greater loyalty especially from first time shoppers. The research led to a general impact in terms of improved customer experience and specific impact on sales growth and revenue. The result is greater enjoyment and satisfaction for shoppers and higher sales for advertisers and retailers.</p>
<p>2. Underpinning research (indicative maximum 500 words)</p> <p>Digital Signage (DS), public screens showing video, is an important, little-researched topic. In 2003, Dr Charles Dennis then a Senior Lecturer, was commissioned by one of the then leaders in implementing DS, Instrumental Media Group (an early innovator in the field) to carry out a ‘proof of concept’ study. The research was led by Dr Dennis (with hourly-paid teaching staff from BBS acting as research assistants plus Dr Andrew Newman, then of Manchester Business School). DS screens were installed in a shopping centre, The Mall Ashley at Epsom (owned by the Mall Corporation), especially for the trial. A survey of mall consumers (n = 315) demonstrated that DS has a significant, positive, total effect on approach behaviours such as shopper spending, mediated by positive affect and (arguably) perception of mall environment. Eight focus groups (total 50 participants) were carried out in early 2004 indicating that respondents find the information useful, particularly the community information but also time-specific, local information such as the special offer at Superdrug today.</p> <p>A study of the attractiveness of the town of Uxbridge to shoppers (n = 530) conducted in mid 2005 confirmed that DS at one mall in the town is effective in contributing to the attractiveness of the town, particularly for employed shoppers.</p> <p>Further studies included a ‘before-and-after’ quasi-experiment at the Mall Pavilions, Uxbridge, using structured questionnaires (n = 389) (early 2007), comparing a before-and-after situation against another (unchanged) control mall, demonstrating incremental increase in evaluations of a mall environment and shoppers’ approach behaviour. The results of this study have been accepted for publication by the <i>Journal of Consumer Behaviour</i> (ABS 2*). In addition, six focus groups were carried out with 48 participants in total. Three groups were in Uxbridge (late 2005), USA (late 2006) and Australia (mid 2006), comparing three pairs of malls, one with and one without DS in each pair. The follow-up three focus groups at Uxbridge (late 2006) evaluated ‘after’ the installation of DS at the Mall Pavilions, Uxbridge. The qualitative research elicited consistent dimensions of consumer evaluation of DS including: modern, distinctive, importance of good visual design, importance of ‘pause’ locations, persuasive, welcomed information (both specific local advertising and community information), and entertainment. Sound and music is an important, contentious area arousing mixed opinions.</p>

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The results extend the Limited Capacity Model of Mediated Message Processing (LCM) from television to DS, which predicts the effectiveness of vivid moving visual images as atmospheric stimuli. The “direct” route in the Elaboration Likelihood Model suggests that DS influences cognition, which then influences emotions whereas the “peripheral” route is emotion → cognition. The researchers predicted and confirmed in these studies that that these operate in parallel. This is important as it influences the design of suitable content for DS.

Investigating these important theory issues, a knowledge transfer project led by Charles Dennis (funded by partners Brunel University, ROI Team and Harrods – not a KTP) consisted of a simulation pilot pre-test with student respondents (n = 103) and real ads with real shoppers at upscale Knightsbridge large department store Harrods (n = 437), consisting of field experiments evaluating ‘cognitive’ (utilitarian) adverts content vs. ‘affective’ (hedonic) vs. ‘cognitive plus affective’ (utilitarian plus hedonic). The results of this study have been published in the *Journal of Marketing Management* (ABS 3*).

The early pioneering research was published in an industry paper made available on open access in 2004 and in a highly-regarded refereed monograph published in 2005. The results demonstrated that the effects of DS arise not only from the ads but also contribute to improving the image of the mall.

DS can provide a variety of benefits for consumers. Charles Dennis’s research has demonstrated the value of community information as well as product and retailer information. Shoppers value local and time-specific information. For example, the times of the last bus, what is on at the theatre, the farmers’ markets and special offers available from specific stores. Importantly, entertaining and affective content has also been demonstrated to be effective in digital signage advertising.

3. References to the research (indicative maximum of six references)**Research Monograph:**

Dennis, C. E. (2005) *Objects of Desire: Consumer Behaviour in Shopping Centre Choice*, London, Palgrave. <http://us.macmillan.com/objectsofdesire/CharlesDennis>

Refereed Journal Papers:

Dennis C., Brakus J., and Alamanos E. (2013) ‘The wallpaper matters: digital signage as customer experience provider at the Harrods (London, UK) Department Store’, *Journal of Marketing Management*, 29 (3-4): 338-355. <http://dx.doi.org/10.1080/0267257X.2013.766628>.

Dennis C., Michon R., Brakus J., Newman A. and Alamanos E. (2012) ‘New insights into the impact of digital signage as a retail atmospheric tool’ *Journal of Consumer Behaviour*, Vol 11 (6):454-466. <http://onlinelibrary.wiley.com/doi/10.1002/cb.1394/full>

Newman, A., Dennis, C., Wright, L. T. and King, T. (2010) ‘Shoppers’ Experiences of Digital Signage – a Cross-National Qualitative Study’ *Journal of Digital Contents Technology and its Applications*. 4(7): 50-57. <http://hdl.handle.net/2086/4554>

Industry Papers

Dennis C. and Instrumental Media (2004) White paper on Captive Audience Networks [digital signage] available online on open access (industry paper published jointly with Instrumental Media).

Dennis C. (2009) ‘Digital Signage in Malls’, *Platt Retail Analytics*, 5 (2): 30-31.

Impact case study (REF3b)

4. Details of the impact (indicative maximum 750 words)

The research demonstrates two types of **commercial impact of DS**: (i) the general impact of improvements in the customer experience; and (ii) the specific impact of growth in sales and ad revenues. Virtually every shopping mall now employs DS for these twin objectives.

The research is acknowledged by current industry experts such as the directors of Intelligent Screen Media and ROI Team as having been highly significant and influential. As a direct result, all (or nearly all) of the shopping centres owned by the Mall Corporation (the UK's largest community shopping mall group in the UK) are now fitted with DS. As a direct or indirect result, most shopping centres now use DS, improving information provision and enjoyment for shoppers – indicative of the wide reach of the research.

Results were presented in the summer 2004 to Avanti Screenmedia, a major international communications company, and have thus contributed to the growth of DS. Avanti Screenmedia were at the time one of the biggest players in DS communications and, following my presentation and a trial installation at the Mall Ashley, Epsom, installed DS systems across nearly all shopping malls of the Mall Corporation.

The research findings contributed to Harrods' business decision to upgrade replace and install newer screens in the store. Of particular importance was that the DS content enhanced customer experience and influenced their purchasing behaviour, so that Harrods increased o increase the size and number of screens from approximately 100 to approximately 200. This success has also led brands and advertisers to buy more 'slots' on the content schedule. This benefit has been confirmed by Harrod's Media Sales Director:

"The most important factor was the validation from the research that customers noticed the screen content which enhanced their experience plus the screen has an influence upon their purchasing behaviour. This has been invaluable in talking to our brands and advertisers who invest media budgets in buying slots on the content schedule. Since the study not only has Harrods increased the size and volume of screens, but investment by brands advertising upon the screen networks has also increased"

The research led to the design of entertaining or affective ads for DS, having two beneficial effects for the advertiser and the retailer:

- the study demonstrated that consumers reacted differently to different style of content, i.e. the cues contained in the broadcast messages evoke specific experiences in customers that, in turn, positively affect the attitude towards the advertiser and consumers' approach behaviour. This is especially true if the messages contain affective or a mix of affective and intellectual cues. For example, as a result of the Harrods trial, which included promotional material that advertised travel, sales of the travel agent went up by 10 percent. The findings have helped Harrods to guide and advise their DS advertisers as to the most effective content creation and messaging.
- the 'umbrella effect', that is, DS enhances the shopping experience, which, in turn, results in an increase in intended spending. At the 'before and after' trial at the Uxbridge mall, footfall in the mall increased by six percent (*Dennis et al, 2012*). In the Harrods trial, shoppers who had viewed the affective or mix of affective and intellectual cues (rather than the only intellectual cues) expected to spend one third more and purchase one third more

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items in the store (*Dennis et al, 2013*). If consumers desire to make an experience last longer, that desire affects the length of stay in the shop, purchase intentions and satisfaction. Moreover, the particular attractiveness of DS ads to shoppers on their first visit to the store has important implications for store loyalty by generating repeat business.

In sum, as a direct and indirect result of the seminal research undertaken at Brunel, this rapidly evolving market reached a tipping point whereby it was taken seriously by all stakeholders: retailers, mall owners, media agencies and finally shoppers.

5. Sources to corroborate the impact (indicative maximum of 10 references)

The following individuals have already provided letters confirming the research impacts stated in this case study:

- The former CEO of Avanti Screenmedia;
- The Media Sales Director of Harrods;
- The former CEO of the Mall Corporation.

The following individual can be contacted to confirm the research impacts stated in this case study:

- Managing Director of ROI Team Ltd, a research organisation which conducts shopper research for the Mall Corporation.