
Exploring Uses of Augmented Reality in Participatory Marketing

Niamh Conway, Alessandro Soro, Ross Brown, Selen Turkey

Queensland University of Technology (QUT)

Brisbane, QLD, Australia

nm.conway@connect.qut.edu.au, {a.soro, r.brown, selen.turkey}@qut.edu.au

ABSTRACT

This paper is an exploration of Augmented Reality applications to Participatory Marketing and overviews initial findings in this area of research. Participatory Marketing is the concept of marketing *with* customers rather than *at* them, and can potentially turn AR users from passive consumers to (pro-)active co-creators of this future media. We conducted a preliminary investigation to focus on possible challenges and opportunities.

INTRODUCTION

This paper reports on an exploration of Augmented Reality (AR) applications to Participatory Marketing and overviews initial findings in this research area. AR is a technology that superimposes digital elements into the user's point of view providing a composite view of reality. Initially supporting highly-skilled activities such as aircraft piloting, surgery etc. [1], the technology is emerging as a media form that could enable new experiences that blend physical and virtual worlds [2]. This is a current, broad interest in several fields, including HCI, with companies of high calibre such as Google, Microsoft and Apple competing and investing into the portable technology. Marketing, in the definition¹ of the Chartered Institute of Marketing, is "the management process responsible for identifying, anticipating and satisfying customer requirements profitably" [3].

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the owner/author(s).

CHI'19 Extended Abstracts, May 4–9, 2019, Glasgow, Scotland UK

© 2019 Copyright held by the owner/author(s).

ACM ISBN 978-1-4503-5971-9/19/05.

<https://doi.org/10.1145/3290607.3313086>

KEYWORDS

Augmented Reality; Participatory Marketing

¹As Baker noted, there are "as many definitions of marketing as there are people willing to make one!". See [3] for a more nuanced discussion of what marketing is and is not.

²Participatory Marketing draws specifically from value co-creation. Co-creation implies that collaborative value creation between the supplier and the consumer is a valuable asset in the value chain [15], due to a greater understanding of consumers' needs and wants. This participation between the supplier and the consumer is leading the way for future marketing practices, where customer engagement is at the forefront of every business.

The *profitability* marks a key difference with design research, that often (perhaps naively) focuses on what users may need, use, enjoy, but rarely goes as far as asking what people may *buy*. Participatory Marketing ²is a mind shift in the business community that includes greater understanding of consumers; to market products and services with them, rather than at them. [10].

As we will discuss in more detail below, the use of AR in Marketing, especially in a participatory way, is an under-explored and promising research avenue. We moved from two open-ended research questions to explore these topics: 1) Can AR enable new forms of participation throughout design, pricing, promotion and commercialisation of new and traditional services and products? and 2) What utilised products and services can people imagine impacted (for better or worse) by AR? We used these research questions to guide the focus group with PhD students of our Institution. Key findings point to interesting and currently under-explored research directions: 1) commercial AR applications in a social setting; 2) AR supporting digital rituals; 3) AR to support alternate realities; 4) AR to support digital life.

RELATED WORK

Participatory Marketing in AR is relatively under-researched, with Participatory Marketing itself a rather novel topic in marketing studies. Several studies look at how the capabilities of Participatory Marketing, assisted by the Internet of Things (IoT), allows for the co-creation of brand identity through value, experience, customer satisfaction and social recognition [7]. AR and IoT are leading the shift towards new product dimensions, such as value, identification and brand reputation. Consumers are increasingly presented with product choices and information, so it can be difficult for marketers to predict customer responses. By utilising valuable insights from commercial IoT products, marketers can benefit from real-time feedback, build a "community" among consumers, leverage customer self-service and develop future product strategies through collaboration. Marketing itself is evolving to see value in collaborating and co-creation with customers [9]. Participatory Marketing empowers interaction by offering experiences and seeking opinions and knowledge [7]. Gong highlighted a need to conduct effective cognitive marketing activities, especially critical for 'New Product Development' to ensure a connected customer experience [5]. For example, Gong's research found that only 1 in 5 customers find retailers understand their needs and preferences and the marketing messages they receive are "usually relevant". Jara and colleagues argue that integration into social computing, social media and community intelligence of the consumers, reaching participatory consumers is key to developing successful products. Today's consumers are refined, informed, connected and proactive [7]. Exposing consumers to experiential marketing campaigns in the saturated media landscape is however difficult. To achieve a high level of cut-through marketers have to trade-off media reach with customer participation.

This has profound implications for AR interaction design. On one hand, scholars are envisioning social and collaborative uses of AR, for example, as a mediator of both co-located and remote settings to enable communities of practice to utilise their know-how [8]. On the other hand, business models for future products are driving towards an even more intrusive "attention economy" [4], with advertisers gaining access to users' eye gaze in real-time. From an HCI perspective, marketing can show interesting new insights on AR research to complement the common user-centred design approach. A customer-centred approach can potentially shed light on possible business models that may flourish in AR, besides obvious hyper-networked contextualised access of information.

METHOD

Adopting a convenience sampling approach, PhD students in CHI discipline in our institution were invited to participate in a focus group (see Fig. 2). Participants were informed of the aims of the research and the focus group lasted for approximately 90 minutes. Six participants (ages 20-30) joined the workshop that was organised and conducted by the first author with support from 2 co-authors. They vary in educational backgrounds, including computer science, psychology, information technologies, anthropology, games design, and all participants were at different stages of progress in their PhD studies. None had an academic background in marketing, nor had familiarity with 'Participatory Marketing'. In addition to sketching material, participants were invited to trial demo software on two commercial headsets, respectively for VR and AR (Gear VR headset and Microsoft Hololens). The focus group discussions were audio recorded, and the team took notes on their laptops during the proceedings. Initially, the participants were introduced to the topic of AR, including common, highly-adopted uses of the technology and the differences between AR and VR. The topic of Participatory Marketing was introduced to explain the fundamentals of marketing, specifically to those from non-marketing backgrounds. In order to begin addressing the research questions, the participants were then asked to draw a scenario based on AR in the future of marketing, to discover how they value of AR in marketing situations. Participants were then asked to explain their images, and give further clarification of their scenario. Further discussion was encouraged to build off other ideas. After discussing the initial scenarios for about 30 minutes, the participants were asked to write a love letter and a breakup letter [6] towards the AR technology. This encouraged people to envision their thoughts and feelings towards the technology, which may not otherwise resonated with participants through usual methods. The breakup letter particularly sparked conversation of participants' hesitations towards future adoption of the technology. This building-off-ideas strategy was encouraged.

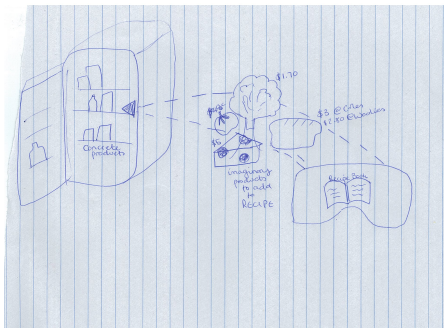


Figure 1: Scenario sketch of an AR fridge created by one participant to the focus group



Figure 2: Participants to the focus group, one participant is wearing a Microsoft HoloLens AR headset.

FINDINGS

Discussed ideas and insights varied and tapped into each participants current research. This exploratory study exposes valuable avenues for research, and we are conscious that findings do not necessarily represent the concerns of the 'average user'. We first present the results of the scenario sketching, then the topics that emerged from the love/breakup letters. We finally discuss our findings.

The results of the focus group were discussed within the research team, and the raw findings were distilled down to a number of 'promising themes' based on iterative discussion of the previous literature, and available technology. From the guidance of research questions, four themes emerged as worthy of further, more formal investigation: 1) commercial AR in a social setting; 2) augmented digital rituals; 3) envisioning alternate realities; 4) digital life. Furthermore, the love letter and breakup letter were very useful to switch on the participants' critical thinking, and resulted in many insightful comments and reflections.

Scenario Sketching and Discussion

Commercial AR in a Social Setting. A number of scenarios explored shopping as a social activity to envision new uses for AR. One scenario suggested to tie price comparison and nutritional information to products in supermarkets. Another suggested offering situated and embodied feedback on products, services, and places, providing real time mapping of transport schedules to a location. One participant proposed incorporating AR in real estate to let users add additional elements to houses for sale, allowing them to envision how it may be furnished or renovated.

Augmented Digital Rituals. Several scenarios related to mixed physical/virtual practices and family rituals, such as Christmas decorations, preparing meals, and storytelling. It should be noted that the focus group was held during the holiday season, influencing participants towards some more traditional scenarios in this case. One participant proposed to compete in public space to decorate a Christmas tree, therefore marrying the gaming and social aspects of AR. Another suggested to augment hand-made objects with stories, especially in the context of older adults wanting to connect with family members. Another scenario imagined augmenting the practice of cooking meals and shopping. These were the first ideas generated, and probably ones which heavily drew on existing Ubicomp/IoT applications in the food industry.

Envisioning Alternate Realities. One participant highlighted how the marketing of city heritage does not do justice to its cultural significance. In countries with a history of colonisation, AR may allow envisioning of different perspectives, for example showing stories shared by traditional owners of the land where a colonial building is located, or seeing a landmark prior to urbanisation. In place of an iconic infrastructure, for example a bridge, AR may allow users to see traditional means of

Example Love Letters from Focus Group

“Since we’ve been together I’ve seen the world in a totally new light [...]”.

“My Dearest Darling Auggie
How do I love thee? Let me count
the ways! You help me find my way when
lost, you help me choose products in shops
[...]”.

Example Breakup Letters from Focus Group

“To whom it may concern (yes AR, that’s you!),
What about the effort and time we should put
on things we care? [...] Do you think you know
me that well?”

“You are so uncomfortable and cumbersome.
You weigh on my mind. You always need to get
away and ‘recharge’ after a few hours together.
My world is better without you, and I never
needed you anyway.”

crossing the river, or modern alternatives that are more sustainable. These applications were intended to “invite speculation on possible futures of the city”.

Digital life. Some scenarios pointed at radical forms of symbiotic integration between reality and augmentation. One scenario envisioned augmenting advertisements at bus stops with the possibility to experiment by mixing the visual narrative of advertising with real life. For example, by incorporating the viewer into the imagery using advanced ML techniques for scene generation [14].

One participant suggested applications to assist older adults to fully participate in physical activities they can no longer do, such as virtually visiting relatives; another scenario proposed to reverse the principle of AR to embed the user within advertisements.

Love/Breakup Letters and Discussion

The love/breakup letter is a less known method of anticipating (dis-)illusions in interaction design. The method is intentionally playful to let participants focus on elements other than utility of envisioned designs. When asked to write a love letter to AR, participants invariably resorted to irony and played with set phrases of novelised infatuation, making them intentionally resonate with (often unmet) promises of new technologies. The breakup letter invited participants to bring imagined experience to closure, pulling, so to speak, the loose threads of the ‘relationship’.

DISCUSSION AND CONCLUSION

Participants of the focus group shared valuable insights to how AR could be integrated into society, however made particular emphasis on the incorporated AR technology to have a purpose; to ensure that they were not unnecessarily exposed to visual clutter. The scenarios in commercial AR largely envisioned user-generated content to be retrieved and manipulated in real-time, drawing specifically from the collaborative nature of Participatory Marketing. The challenge for marketers is to determine which additional visual information is necessary to support the collaborative product/service without becoming a nuisance - ultimately deterring adoption.

A significant need highlighted was to incorporate social elements into AR technology in order to market digital rituals, which will add value to pre-established rituals. The scenarios mentioned are interesting in how they position AR at the boundary between word of mouth (in a sense, the Holy Grail of online marketing[13]) and textual information, playing on the mixed material/immaterial nature of AR. Marketers are already looking at how to make AR experiences more engaging and interactive [11]. Our findings show opportunities for marketing to evolve towards collaboration and co-creation with customers.

The scenarios related to territorial marketing operate at the intersection of technology, participatory development and marketing; an area that can potentially offer vast opportunity to smaller communities to participate in this emerging market in their own terms (see e.g. [12]).

Finally, the theme of digital life, not surprisingly, elicited polarised reactions (see e.g. [16]). The applications mentioned were mainly trivial activities, yet many participants expressed concern regarding AR being an unnecessary addition to the already present technology. It was emphasised that the symbiotic link between reality and augmentation be a purposeful collaborative technology, to ultimately encourage adoption and market the value of the technology.

In summary, this paper aims to explore the under-researched area of AR in Participatory Marketing. Our findings so far have highlighted the need for a purposeful technology due to the already saturated landscape of advertisements that hinder cognitive capacity. Future research can explore how technology can support the collaborative nature of this form of marketing in commercial settings to determine whether Participatory Marketing is a viable marketing alternative in the future.

REFERENCES

- [1] Ronald T Azuma. 1997. A survey of augmented reality. *Presence: Teleoperators & Virtual Environments* 6, 4 (1997), 355–385.
- [2] Ronald T Azuma. 2016. The most important challenge facing augmented reality. *Presence: Teleoperators and Virtual Environments* 25, 3 (2016), 234–238.
- [3] Michael J Baker. 2016. What is marketing? In *The Marketing Book*. Routledge, 25–42.
- [4] Thomas H Davenport and John C Beck. 2001. *The attention economy: Understanding the new currency of business*. Harvard Business Press.
- [5] Wenjie Gong. 2016. The Internet of Things (IoT): What is the potential of the internet of things (IoT) as a marketing tool?
- [6] Bruce Hanington and Bella Martin. 2012. *Universal methods of design: 100 ways to research complex problems, develop innovative ideas, and design effective solutions*. Rockport Publishers.
- [7] Antonio J Jara, Antonio F Skarmeta, and Maria Concepcion Parra. 2013. Enabling Participative Marketing through the Internet of Things. In *2013 27th International Conference on Advanced Information Networking and Applications Workshops*. IEEE, 1301–1306.
- [8] Thomas Ludwig, Peter Tolmie, and Volkmar Pipek. 2019. From the Internet of Things to an Internet of Practices. In *Social Internet of Things*. Springer, 33–47.
- [9] Salvatore Parise and Patricia J Guinan. 2008. Marketing using web 2.0. In *Hawaii International Conference on System Sciences, Proceedings of the 41st Annual*. IEEE, 281–281.
- [10] Bernd H Schmitt. 2000. *Experiential marketing: How to get customers to sense, feel, think, act, relate*. Simon and Schuster.
- [11] Joachim Scholz and Andrew N Smith. 2016. Augmented reality: Designing immersive experiences that maximize consumer engagement. *Business Horizons* 59, 2 (2016), 149–161. <https://doi.org/10.1016/j.bushor.2015.10.003>
- [12] Donald Sinclair. 2003. Developing indigenous tourism: challenges for the Guianas. *International Journal of Contemporary Hospitality Management* 15, 3 (2003), 140–146.
- [13] Michael Trusov, Randolph E Bucklin, and Koen Pauwels. 2009. Effects of word-of-mouth versus traditional marketing: findings from an internet social networking site. *Journal of marketing* 73, 5 (2009), 90–102.
- [14] Aaron van den Oord, Nal Kalchbrenner, Lasse Espeholt, Oriol Vinyals, Alex Graves, et al. 2016. Conditional image generation with pixelcnn decoders. In *Advances in Neural Information Processing Systems*. 4790–4798.
- [15] Manuela Vega-Vazquez, MarĀna ĀĀngeles Revilla-Camacho, and Francisco J. CossĀo-Silva. 2013. The value co-creation process as a determinant of customer satisfaction. *Management Decision* 51, 10 (2013), 1945–1953.
- [16] Judy Wajcman. 2004. *Technofeminism*. Polity, Cambridge.