Institution: University of the West of England (UWE), Bristol
Unit of Assessment: 36 – Communication, Cultural and Media Studies, Library and Information Management
Title of case study: Experience Design Frameworks for Digital Economy

1. Summary of the impact

Research at UWE Bristol in new media and games has engaged business and policy communities. The resulting knowledge exchange has underpinned the AHRC Creative Economy Hub REACT (Research and Enterprise for Arts and Creative Technologies) which has stimulated £200k value of new business for SMEs in its first year of operation. The research has enabled start-ups, micro businesses and SMEs in the digital economy to use our critical and creative methods to improve their products and services. It has also made a significant contribution to the development of policy on games for young people.

2. Underpinning research

The research at UWE was conducted between 2002 and 2012 by Professor Jon Dovey, (Senior Lecturer 1996-2002, Principal Lecturer 2002-2003, University of Bristol 2005 – 8, UWE Professor 2008-present), Helen Kennedy (Lecturer 2002-2003, Senior Lecturer 2003-2008, Deputy Head of Dept 2008-2011, Assoc Head of Dept 2011-2012, Director of DCRC 2012-2013) and Dr Seth Giddings (Senior Lecturer 2001-present).

This research argues for the development of a new paradigm in media studies for understanding digital media as *lived experience* and not as text [R1, R2, R3, R4]. This paradigm led on to the development of new policy insights and a new design framework for digital media producers which emphasises the embodied media user in a ubiquitous computing environment [R5, R6].

The research highlighted a tension between a textual approach to the development of a new critical language for digital media [R1: pp 13–38] and an Actor-Network Theory influenced account of the embeddedness of digital technology in everyday life [R1: pp 219–279]. The embodied experiences that mobile media and gaming produce demand the new theorisations of the audience/ user experience [R2, R3 & R4]. This work was based in observation of users and producers of games and other digital media: it foregrounds embodied play as a key characteristic of user engagement with digital media technologies.

Giddings developed innovative research methods [R3 & R4] for examining the materiality of the interactions between people and digital media in order to address the problem of how to account for experience rather than interpretation. This emphasis on embodiment and evidence in work on games and play directly informed our approach to the research and KE work in the field of Pervasive Media.

In 2004 Dovey led a series of workshops for the DTI-funded Hewlett Packard & University of Bristol 'Mobile Bristol' research project which applied and developed the critical language developed in the research [R1 & R2]. These workshops developed a design framework for digital media producers which deployed a set of design dimensions aimed at giving producers the opportunity to think through the user experience in the emergent era of Pervasive Media. Pervasive Media exploit new conjunctions of sensors and actuators derived from the field of ubiquitous computing, where devices not only respond to human inputs from interaction (with a mouse and keyboard etc) but can also sense other features of their context such as location (or temperature, light, sound etc). UWE research argued that these affordances require a new understanding of the embodied user.

The workshop team developed a framework [R5] that offered producers the opportunity to develop their ideas along a series of dimensions – Immersion, Control, Mapping, Space, Time & Sociality – in order to design their projects for embodied users in actual environments. Dovey's subsequent Knowledge Transfer Fellowship (AHRC 2010-12) developed 12 case studies in Pervasive Media production and a series of short essays (on eg Attention, Context, Memory, Place and Play) to support designers in developing projects [R6].

3. References to the research

R1.Lister M, Dovey J, Giddings S, Grant I and Kelly K. *New Media - A Critical Introduction*.

(Routledge 2003 and 2009) – co-authored book.

R2. Dovey, J. and Kennedy, H. *Game Cultures: Computer Games as New Media* (Maidenhead: Open Univ Press, 2006) – co-authored book.

R3. Giddings, S. 'Events and Collusions: A Glossary for the Microethnography of Video Game Play' in the special section on 'Technologies Between Games and Culture', Crogan and Kennedy guest eds, *Games and Culture: A Journal of Interactive Media* 4:2 (April 2009): 144-157 http://dx.doi.org/10.1177/1555412008325485 .

R4. Giddings, S. & Kennedy, H.W. '"Incremental Speed Increases Excitement": Bodies, Space, Movement, and Televisual Change' *Journal of Television and New Media* 11:3 (May 2010): 163-179. http://eprints.uwe.ac.uk/8362/ http://dx.doi.org/10.1177/1527476409357592

R5. Dovey J & Fleuriot C 'Dimensions of Mobile Media Design' in Rieser M The Mobile Audience Rodopi, 2012.) (originally 'Locative Media: Common Language' Dovey J & Fleuriot C 2005 online at New Media Knowledge (http://161.74.14.141/article/2005/4/22/locative-media-common-language) accessed 31.8.12.

R6. Dovey J & Fleuriot C 'Cooking Up – Communicating Pervasive Media' *Ubiquity* 1:2 (2013) Intellect Online & pp 145-165 http://dx.doi.org/10.1386/ubiq.1.2.145_1

Key grant

AHRC KE Fellowship 'Aesthetics and Value of Pervasive Media' PI Dovey (£208,742, 2010-12).

4. Details of the impact

4.1 Knowledge exchange with start-ups and designers

The research above underpins the formation of active knowledge exchange relationships with micro businesses and start-ups in the digital media innovation sector which has enabled them to start up, develop their market profile, produce better media products and services, and increase their market share. Co-creating a critical language for Pervasive Media enabled new start-ups and designers to articulate their offer to the market with more clarity and the design dimensions approaches enabled them to deliver better products and services [S5, S6].

4.2 Pervasive Media Studio and Calvium

The experience design framework developed by the 2004 workshop team (and published in R5) was incorporated in Hewlett Packard's (HP) MediaScape training materials. (MediaScapes were the forerunners of Pervasive Media.) The improvement in HP's ability to communicate the potential of mobile media led to Dovey being invited in 2008 to bring the UWE Digital Cultures Research Centre team (including Fleuriot, Giddings and Kennedy) to become co- founding members of the Pervasive Media Studio. This is Watershed Media Centre's innovation lab partnering University research and digital start-ups. (It was cited in the 'Creative Britain: New Talents for the New Economy' Feb 2008 DCMS report as a 'ground-breaking new innovative place of learning'.)

The Director of Watershed's Pervasive Media Studio confirms that "The partnerships, collaborations and knowledge built up through your research into Experience Design and Games in the emerging ecosystem of Pervasive Media has been invaluable in catalysing and supporting our network of artists, creative and technologists." She adds that the research "has shaped policy [and] strengthened our business performance" [T1].

The design framework also at the core of the approach to mobile media design adopted by Calvium Ltd, a new spin-out company from the HP Bristol Labs that also became a founding member of the Studio. Their Creative, Sales and Marketing Director says that the research and partnerships from the workshops "have had a lasting impact on the development of our own business (Calvium) and on the wider innovation community round the Pervasive Media Studio. […] Calvium now have a thriving consultancy and app development business built around our own Experience Design framework honed from the early experimental work".

4.3 Creative innovation network

The original design frameworks and common-language approaches to embodied experience design were key contributors to the formation of a vibrant creative innovation network. The stakeholders in this network are Creative Industry start-ups, SMEs, cultural industry agencies, media professionals and practice-based researchers in media, design and digital innovation. The research insights from the 2004 workshop have been debated face to face, discussed and developed through the DCRC and Pervasive Media Studio networks and events. These have reached a range of audiences (of up to 300 people) including business and the general public. The design framework and common critical language developed by the research have been shared as follows:

a) SME creative economy partners who have participated in workshops or case studies. Specific examples of these companies include Mobile Pie (games) [see T4], Thought Den (design), Interactive Places (heritage), Play it Again Sam (music), Duncan Speakman (artist), Guerilla Dance Company, Calvium (app platform developers) [see T2], Stand and Stare Theatre, Matter to Media, ProtoType Theatre, igLab (games) and Moksha (design). These companies have been enabled to improve their sales through experiencing the co-created methods of the design framework. For example, the MD of Mobile Pie (a games development studio) confirms that "Having such direct access to an academic team has proven immensely useful to our business over the years, helping us to make sense and understand the wider implications our work in such a fast moving industry" [T4].

b) Summer schools for 24 Creative Producers run in 2010 and 2011 (in conjunction with iShed). Producers gained an in-depth understanding of how to transfer their existing skills into the emergent domains of Pervasive Media by understanding embodied user experience [S1].

c) iShed's 'Sandbox' production programme has led to the creation of 44 innovative digital media products, all of which have incorporated UWE's 'design dimensions' approach in their planning stages.

4.5 Pervasive Media Cookbook

The Knowledge Transfer Fellowship described in section 2 above led to the publication in 2012 of the online 'Pervasive Media Cookbook' (http://pervasivemediacookbook.com/). This was co-produced with the Pervasive Media Studio. It included 14 case studies of different kinds of Pervasive Media project. The Cookbook republished and updated the research's original design framework, together with other materials, providing the world's first 'how-to' guide to producing Pervasive Media. The Cookbook has expanded the market in this field of digital innovation by offering the first guidebook aimed at first-time producers [S2].

4.6 REACT

The accumulated experience of the UWE team in knowledge exchange based in the research above underpin UWE's leadership of REACT (Research and Enterprise for Arts and Creative Technologies), one of the AHRC's four £4.8m Creative Economy Hubs. Dovey is its Director. REACT has hosted 300 academics and businesses in 'Ideas Labs', formed 100 new relationships between academics and business and produced 30 digital media projects. These build on the approaches to experience design and co-creative research relationships developed from the original 2004 workshops (see section 2 above). REACT has taken the approach to digital media experience design arising out of the research and built on it in the fields of heritage, publishing and future documentary. This has led to partnerships producing prototype products and services that enhance the product portfolio of Creative Economy businesses. Companies supported by REACT have produced an additional £500k worth of business in the year since their completion. Partner companies have invested 5800 hours of paid time into the projects so far produced. The creation of new academic/business relationships is at the core of REACT's achievements [S3].

For example, the Creative Director of Splash & Ripple writes that "REACT enabled me to get our first commission… The fact that the Sandbox was informed by research into Experience Design principles that we could put into action was a really great help in developing our ideas for the

project." Her involvement with REACT "has directly resulted in many new leads and a £100k commission for the National Trust. My business is now established as a new brand within the Heritage Market" [T3].

5. Sources to corroborate the impact

Testimonials (available from UWE, Bristol and numbered in same order on REF system)

T1.   Director, Watershed Pervasive Media Studio, Bristol (see 4.2)

T2.   Creative, Sales and Marketing Director, Calvium Ltd (see 4.2 and 4.3)

T3.   Creative Director, Splash & Ripple (see 4.6)

T4.   Richard Wilson, MD, Mobile Pie "Having such direct access to an academic team has proven immensely useful to our business over the years, helping us to make sense and understand the wider implications our work in such a fast moving industry." (see 4.3)

Other sources

S1.   Creative Producers Summer School Video: evidence of impact in improving participants ability to test and iterate for embodied experience design e.g. Freelance Digital Producer talking at 1 min 40 sec (see 4.3b).

S2.   Cookbook Launch Video: impact of common language work on producers' ability to conceptualise Pervasive Media projects by creating a 'tangible' 'road map' e.g. Technical Director, App Development Micro Business, at 0.12 sec (see 4.5).

S3.   'Being Reactive' Video Documentation evidence of benefit to business of REACT process "What this has given me a chance to do is to step away from day to day work and think about products, content, things that I can use in the future." MD, Calling the Shots speaking at 2 min 50 sec (see 4.6)

S4.   *"How To - Urban Gaming'* Article in Wired Online (24.09.12) based on the Design Dimensions (R5) written by Pervasive Media Studio Director Clare Reddington showing continuing impact of design framework in the high-profile tech-sector publication. See citation at the end of the article '*These design dimensions are inspired by work undertaken by The Digital Cultures Research Centre.'* http://www.wired.co.uk/news/archive/2012-09/24/how-to-urban-gaming-tech (see 4.2)

S5.   Online citation for Reference 5 from design blogger 'What Dovey and Fleuriot do in the chapter is develop what they call "descriptive dimensions of mobile media design" The list is an *immensely useful checklist for anyone planning on creating any kind of interactive mobile media art with an emphasis on location and mixed realities.*' (see 4.1) http://the3inchcanvas.wordpress.com/2012/04/09/dimensions-of-mobile-media-design/

S6.   Evidence that the Cookbook had impact on the businesses of the partners in the case studies. 90% of Cookbook project partners said they had learnt new aspects of their practice, changed the way they worked and *could communicate their work better* as a result of the Knowledge Transfer Fellowship. (Survey Monkey) (see 4.1)