

Institution: Falmouth University
Unit of Assessment: 34 - Art and Design: History, Practice and Theory
Title of case study: Crafting the Digital; analogue/physical interfaces to digital functionality, content and services
1. Summary of the impact This case study concerns analogue interfacing of digital content and services and examines interfaces which seek to be bespoke, inclusive, meaningful and engaging associations of crafted materiality. Through a series of deployments of prototypes in a range of real world contexts this case study demonstrates the value and interest, beyond academic research, for crafted physical interfaces.
2. Underpinning research This case study focuses on work undertaken by Dr Justin Marshall, Associate Professor of Digital Craft, in collaboration with researchers from UK universities including the University of Surrey, Newcastle University and the University of Dundee. Within the Autonomic research group [1] Marshall's research and professional practice prior to 2009 laid the foundation to investigate the potential for digital toolsets and systems to generate one-off, unique designs [2]. The principal activities that underpin this case study follow the 'Bespoke' project [3]. A key objective of this research project is testing the value of using bespoke crafted, analogue interfaces to digital services and content within a particular social community. Marshall was principally concerned with this strand of the project, and, in collaboration with other researchers, used the flexibility of digital design and production tools to craft bespoke 'communitised' (rather than individualised) devices. Devices include: 'Viewpoint'; a series of networked situated community voting machines, 'Talking Memory Box'; a device aimed at schools and families for recording, filtering and retrieving digital sound files and associating them with physical objects, 'Digital Buskers'; a duo of life-size busking sculptures that can be SMS-messaged to play the music of local musicians and 'Wayfinder'; a digitally-powered signpost that both announced forthcoming events and physically pointed to them. Insights gained from this research programme include: <ul style="list-style-type: none">• There can be recognised benefits of using physically situated devices (as opposed to ubiquitous mobile technologies) for locally-focused applications;• That the crafted physical characteristic of an interface, when married to elegant functionality, provides a user experience recognised as more engaging and meaningful;• That open systems and designs that are user-adaptable have a greater potential to be adopted and valued. Two devices, the 'Viewpoint' and the 'Talking Memory Box' were found to hold particular potential and were developed further in follow-on funded research projects. An iteration of the Viewpoint voting machine was developed by Marshall in collaboration with Nick Taylor from Newcastle University for tests in libraries and supermarket locations [4]. The 'Talking Memory Box' was developed with a number of hardware and software improvements through a collaborative research project with an Cornish arts organisation [5]. [1] See Autonomic research group Impact Case Study. [2] See Marshall REF output no.1 [3] See Marshall REF output no.2

- [4] See Marshall REF output no.4
[5] Kernow Educational Arts Partnership (www.keap.org.uk)

3. References to the research

Funded research and public engagement projects:

2009-2011: 'Bespoke: Increasing social inclusion through citizen journalism and bespoke design', RCUK Digital Economy award, £1.1m, EPSRC Ref: EP/H007296/1

2011/12: 'Enabling Simple Public Voting and Consultation in Local Communities', in collaboration with Newcastle University, EPSRC Impact award, £30K.

2013: "*Digital Story Book*", as part of Story Republic project undertaken in collaboration with KEAP, RSA Catalyst award, £2K.

Conference papers and presentations:

Marshall, J., Wallace, J., Wood, G., Thomas, J., Blum-Ross, A., & Olivier, P. (2013) *The value of Craft characteristics in interdisciplinary design development teams*, Crafting the Future, 10th European Academy of Design Conference, Gothenburg.

Taylor, N., Marshall, J., Blum-Ross, A., Mills, J., Rogers, J., Egglestone, P., Frohlich, D.M., Wright, P. & Olivier, P. (2012). Viewpoint: Empowering Communities with Situated Voting Devices. In *Proc. CHI 2012*, ACM, 1361–1370

Marshall, J. and Rogers, J. (2011) *Bespoke A Community Centred Approach To Design*, Victoria and Albert Museum as part of London Design Festival

Marshall, J, Rogers, J, Shorter, M, (2010). '*Parallel Lines: how design and craft find a convergence through a pragmatic approach to digital design*' 7th ICDHS conference, Design and Craft: A History of Convergences and Divergences, Brussels, Belgium.

4. Details of the impact

Artefacts from a national collaborative research programme, 'Bespoke' [1], featured at the London Design Festivals of 2011 and 2012 [2][3]. This internationally renowned festival annually attracts visitor numbers of 350,000+. [4]. Artefacts have been demonstrated and exhibited internationally at the British Council and AHRC backed design festival, 'Unbox', in Delhi, India [5]. 'Unbox' abjures established academic conferences and promotes as a 'celebration of interdisciplinary thought & work'. Devices have been showcased at The Mozilla Festival 2013; Marshall and Rogers were invited to contribute to the 'Making the web physical' strand [6].

The 'Talking Memory Box', iterated the 'Digital Story Box' for the project with KEAP was used by the Story Republic project [7] at schools across Cornwall to encourage children's engagement with local poetry and to allow them to associate their recorded responses with objects that they had found and/or made. These successful deployments demonstrate the device's potential for further work within a educational contexts (see section 5 for details). Deployments of adapted versions of this device in other contexts have also proved valuable. These deployments include the local history projects in Newcastle's Byker Estate [8] and Cornwall's Hayle [9].

Beyond the funded Impact award, the second iteration of 'Viewpoint' has been successfully trialled recording community opinion related to sustainability and energy use. [10]

[1] www.bespokeproject.org.uk

[2] 2011: 'Bespoke' at the V&A exhibition and seminar, London Design Festival, with accompanying project publication (edited by Marshall, Rogers, Blum-Ross and. Available as

PDF <http://bespokeproject.org/uploads/files/bespoke.pdf>.

[3] 2012: Bespoke work exhibited at 100% design, Earls Court, London Design Festival, as part of 'On our doorstep: local design activism', curated by Nick Gant, Brighton University.

[4] <http://www.london.gov.uk/priorities/arts-culture/promoting-arts-culture/20-facts-about-london-s-culture>
http://www.vam.ac.uk/data/assets/pdf_file/0008/178721/annual_review_2011_2012.pdf
 (p.16)

[5] Unbox Festival, New Delhi, India
<http://unboxfestival.com/#/events> http://unboxfestival.com/PDF/UnBox2013_101.pdf
<http://mediainnovationstudio.org/bespoke-unboxed>

[6] The Mozilla Festival, London 2013 (<http://mozillafestival.org>) is an event that focuses open learning and making the web better. It draws a diverse international participants/audience including academics, businesses, third sector, charities, as well as those broadly interested in an open approach technologies related to the web.

[7] <http://thestoryrepublic.co.uk/>

[8] <http://www.northernarchitecture.com/community/what-39-s-happening/2013/06/27/323-byker-lives-a-sense-of-place.html>

[9] <http://www.falmouth.ac.uk/content/lucy-frears-phd-student>

[10] <http://www.wren.uk.com/>

5. Sources to corroborate the impact

In an accompanying letter of support, Amanda Harris, Director of the Kernow Education Arts Partnership (KEAP) and collaborator on the RSA Catalyst project, recognises the impact of the Story Box on Story Republic project went beyond expectations. Marshall and Harris intend to pursue these unexpected benefits in future projects.

Amanda Harris Kernow Education Arts Partnership (KEAP) is prepared to corroborate this case study (contact details given separately)

The RSA report on the deployment of the 'Digital Memory Boxes' states:

'So far it is clear that the Digital Story Box is a wonderful motivational tool for learning which embraces new technology but does not require a screen and encourages independent use. We have only scraped the surface of its possibilities but we know that teachers and schools are very excited by its potential.' [1]

Recognition of value and impact is provided following a specific deployment of version two of Viewpoint within the Wadebridge Renewable Energy Network (WREN) project. Professor Stephen Frankel, Chair of the WREN Board, recognises:

'The value of having physically situated, but digitally networked, voting machines as a mechanism for gathering feedback and opinions from our local community on issues surrounding renewable energy and energy conservation.'

From a broader perspective, and in her letter of support, Irini Papadimitriou, Digital Programmes Manager at the Victoria and Albert Museum and organiser of the Digital Design Weekend at the

Impact case study (REF3b)

V&A, recognises the value and relevance of Marshall's digital craft work and the visitor interest his collaboratively-developed 'devices' generated. Papadimitriou situates Marshall's work in an developing area of interest within the V&A; linking the physical and the digital, craft and technology.

The broad theme of the case study will be pursued by Marshall in collaboration with Rogers (Dundee University) and others in related works focused on reifying the web and the visualisation of big data through research applications to which crafting physical bespoke devices is central. A further grant application to the RSA Catalyst Fund to explore ways to support schools' ICT and DT departments to build bespoke digital Story Boxes has been submitted.

[1] <http://www.rsablogs.org.uk/2013/fellowship/story-republic-digital-educational-tool-cornish-schools/>