



# SuperCrafted Final Report May 2015

## Table of Contents

<b>SuperCrafted Final Report May 2015</b> .....	<b>1</b>
<b>Project Team</b> .....	<b>2</b>
<b>Funding</b> .....	<b>4</b>
<b>Project Timeframe</b> .....	<b>4</b>
<b>Project Overview</b> .....	<b>4</b>
Research Question .....	5
Aim .....	5
Objectives .....	5
Methods.....	5
<b>Summary of Contextual Review</b> .....	<b>6</b>
<b>Pilot Case Study</b> .....	<b>7</b>
Summary In the Frame.....	7
Summary Conclusions from In the Frame .....	7
<b>Knowledge Transfer/Exchange Workshops</b> .....	<b>10</b>
Workshops 1 & 2: Mega Media Wednesdays, 9 <sup>th</sup> & 16 <sup>th</sup> October 2014 .....	10
Workshop 3: Narrative, 13th March 2015 .....	11
Workshop 4: Online Design Interactions , April 2014 .....	11
<b>Interviews with Makers Stage 1</b> .....	<b>15</b>
Interview with David Forsyth .....	15
Record of interview with Holly Young.....	16
<b>Designer maker interviews stage 2</b> .....	<b>17</b>
Record of interview with Mirri Damer .....	17
Record of interview with Nick Langan .....	17
Record of interview with Jo Bury .....	18
<b>Technology Developments</b> .....	<b>19</b>
Augmented Reality Trial.....	19
Shared Online Environment.....	19
<b>Future Work</b> .....	Error! Bookmark not defined.
<b>Appendix 1: Possible Funding Routes for Small Business Digital R&amp;D</b> .....	<b>23</b>





Appendix 2: Bespoke Production Interview Questions .....25

Appendix 3: Steps for initial set-up in order to create A.R. content. ....26

## Executive Summary

The Supercrafted project was concerned with researching ways in which Superfast Broadband can help craft micro-businesses improve access to global markets and forge new relationships with audiences, customers, makers and suppliers. The project investigated digital technologies that could facilitate new types of online interactions. It sought to achieve this through workshops and live projects with makers in Cornwall. Workshops explored the potential of the Internet to add value to the craft sector through the use of existing technologies and through discussion with makers to develop ideas for technology development that would augment and enhance capabilities in ways that would meet the specific needs of micro craft business.

Four key areas for new types of digital engagement were identified through the literature:

**Dialogue:** practitioners’ use of social media, personal websites and marketing platforms;

**Narrative:** digital content used to tell a back story; **Personalisation:** use of online interactions that allow customers input into the process of creating a unique product; and

**Community:** digital engagement through new business models based on networked distributed making and marketing platforms. **Dialogue, narrative and personalisation** were specifically explored through the Supercrafted project.

The research revealed the breadth of skills required for individual makers to tap into the huge potential of online capabilities to forge new relationships. Some of these skills are embedded in prevalent cultures of digital communication, but a sophisticated and tailored approach to social media for example for micro- craft businesses is required. In the Cornish context, practitioner’s access to mixed skill networks and training that meets their specific needs is perhaps the most significant challenge.

Some makers expressed their concern about both the amount of time it would take to learn new skills and then also to attend to social media, website narratives, online newsletters etc., and how that would take them away from making. Others were already using digital





applications, but needed to develop more specific ways of using them that would effectively extend their reach. Questions arose about the purpose of a website, its audience and the importance of narratives created through digital media.

This highlights potential areas for future work in the area of digital skills development for micro businesses, the cost of outsourcing digital skills, and the potential to develop team based interdisciplinary or co-operative working practices.

Bespoke making and working to commissions became the focus of the latter part of the project as an area in which online communication could be effectively used. Makers clearly articulated that conversations with clients about commissions needed to be individual and private rather than public, and that these conversations were specifically about developing mutual trust and understanding. Websites, social media and public platforms such as Twitter or Pinterest were not felt to be useful to them in this context, but might provide an introduction via a work of mouth recommendation. Where high value, low volume production or making one-off items is central to a small specialist business then spending time developing relationships with individual clients was understood to be essential. It is often important to makers that they actively sell their own work through their studio or at Trade Fairs. In terms of undertaking a specific commission, makers noted that there was a need to communicate work in progress, but to do this in a sensitive and controlled way that would reassure the client, but not give them too much space to for requesting changes to a design. The ability to enable an individual customer to see aspects of work in progress and to be invited to make comments at particular stages of a commission were felt to be valuable. This was understood as important in enabling the client to tell the story of the creation of a bespoke product and to share their experience with personal contacts via a wide range of analogue e.g. word of mouth and social media. These particular aspects of maker/customer relations were used as the starting point for developing the shared online environment in the final stages of the project. This unique platform is perhaps the most interesting and relevant fit to the way in which crafts people currently run their businesses and provides the basis for further work with both makers and clients.



## **Project Team**

Principal Investigator: Dr Katie Bunnell, Associate Professor of Design, Automatic Research Group, Falmouth University

RA (Oct 2012 – June 2014) Dr Isabelle Risner, Falmouth University

RA (Nov 2014 – May 2015) Technologist: Dane Watkins, Falmouth University

Associate Researcher Business (Nov 2014 – May 2015): Sam White, Lecturer, BA Business Entrepreneurship, Falmouth University

## **Funding**

The Supercrafted research project was jointly funded by Falmouth University and Superfast Cornwall.

## **Project Timeframe**

Oct 2012 – May 2015

## **Project Overview**

The Supercrafted project was concerned with researching ways in which Superfast Broadband could help craft micro-businesses to improve access to global markets and forge new relationships with audiences, customers, makers and suppliers. The project investigated digital technologies that could facilitate new types of online interactions. It sought to achieve this through workshops and live projects with makers. Workshops aimed to explore the potential of the Internet to add value to the craft sector through the use of existing technologies and through discussion with makers, to develop ideas for technology development that would augment and enhance capabilities in ways that would meet the specific needs of small-scale craft production.

This final report is split into two phases marking a change in staffing two thirds of the way through the project and a four-month gap in activity. A technologist RA and a business researcher formed a new team with the original PI in November 2014 and enabled a shift in project emphasis from the use of existing technologies to technology designed specifically for makers to communicate online with individual customers.



This report brings together brief summaries of project activities, drawing together their outcomes into a concluding section that highlights potential for future development.

### Research Question

How can the use of the Internet and in particular Superfast Broadband benefit craft makers in regions of relative isolation such as Cornwall?

### Aim

To identify, review, and develop innovative examples of online tools and environments for the craft sector.

### Objectives

- review current online interactions of relevance to the sector and evaluate their usefulness to craft businesses.
- highlight existing online applications to the sector
- demonstrate how new connections can be forged
- identify specific areas for experimentation for the sector
- develop an application specifically designed to meet the needs of the sector

### Methods

- **Contextual Review** – survey of literature and unstructured interviews with business identified as relevant to the field.
- **In the Frame Case study project** working with accessible low cost technologies and with entrepreneurial practitioners, in an inter-disciplinary and collaborative way to demonstrate innovative applications that add value.
- **Knowledge exchange workshops** with participants in the craft value chain including makers, consumers, curators, retailers, suppliers, raising awareness of digital capabilities and existing online tools and environments, gaining insight in to sector needs and developing sector thinking.



- **User Centered Technology Development** (Augmented Reality and an Online Digital Sketchbook for bespoke production) - creating digital tools designed specifically for the needs of a maker through workshops, individual interviews and user evaluation.

## **Summary of Contextual Review**

The literature review looks at research published within the last 5 years addressing digital innovation, the business context of the craft sector and applications in related fields such as retail sales. The review provides evidence of dynamic changes taking place across a wide spectrum of interest to the craft sector, driven by digital technology and Internet capabilities. These changes enable the forging of new relationships within the craft value chain, relationships instigated and enacted with the help of a multiplicity of virtual digital platforms. Through social media, film, interactive websites, marketing platforms, web-based making facilities and their related communities the possibilities for new channels of digital engagement within the craft sector are very wide. These possibilities include changes in ways to get in contact with, inform, or work collaboratively with customers and other makers, changes to the accessibility of production methods and facilities, and changes to ways of marketing and selling goods.

Four key areas for new types of digital engagement were identified through the literature:

**Dialogue:** e.g. Practitioners' use of social media, personal websites and marketing platforms to connect to audiences, build interest, and provide peer endorsement.

**Narrative:** e.g. Digital content used to tell a back-story or integrate content within craft objects and digital information accessed at point-of-sale, or in exhibition settings.

**Personalisation:** Digital interaction e.g. websites that allow customer design input, co-creation, ways of engaging audiences in digitally making bespoke and unique objects.

**Community:** Digital engagement with, and for, the wider craft community enabling access to markets. e.g. networked distributed making and marketing platforms; offering craft engagement, knowledge, networking, manufacturing, and selling opportunities. This theme also covers community-based digital making facilities, such as fablabs.



The literature showed that consumers are embracing a wide variety of digital developments including apps, use of mobile devices, and online shopping including the rise of websites such as Etsy. Through the Internet makers have an opportunity to embrace these changes in consumer behaviour in order to continue to reach existing audiences and to reach new markets. In addition to retail opportunities, the literature raised an awareness of the use of digital technologies in telling a story; such as in museums and for example the Ai Wei Wei installation at Tate Modern – as a vehicle to not just deliver information but to capture the audiences’ emotional reactions to what they were seeing and experiencing.

## **Pilot Case Study**

### **Summary In the Frame**

This summary is an edited extracted from [Risner, I., Bunnell, K., Cleverley J., \(2013\) Crafting Audience Encounters in Making Futures Journal Vol 3 ISSN 2042-1664](#)

**In the Frame** was a team-based project involving academic researchers, filmmakers and technologists working with Level 3 Contemporary Craft students at Falmouth University. This project demonstrated the potential to engage audiences, promote practitioners and add value to craft work, through the use of relatively low-cost and accessible digital communications technologies in the context of a public exhibition. The project involved: filming, photographing and editing together audio-visual material; the creation of a website from which to access films and leave feedback; and a number of options for viewing web--based film footage including Quick Response (QR) codes and smart phone technology, iPads and a desktop computer to deliver internet-hosted content. The aim of the project was to enhance public engagement with the student work through a short professionally produced video that could be accessed in a number of ways. This enabled students to create an audio-visual alternative to a standard text-based artist’s statement they were expected to write as part of their professional practice.

### **Summary Conclusions from In the Frame**

- The use of film to construct narrative about the provenance of an object was very well received by the exhibition audience.



- After some initial concerns, student confidence in dealing with digital media as a way of providing the back-story to their work was greatly enhanced.
- Evidence for the potential for video and website hosting to engage an audience before and after an exhibition was starting to emerge through conversations with the audience that were initiated within the exhibition timeframe. These could have been sustained through an ongoing wider social media and website hosting strategy.

The research demonstrated how contextual material can add value to the audience experience. The delivery of this material needs to be given site-specific consideration with content and delivery mechanisms tailored both to the audience and the exhibition setting. In particular, consideration should be given to the level of audio intrusion, and the ease of use of mobile devices. This consideration needs to take account of a range of different audience preferences and scenarios. For example, only those smart phone users who already had a QR code reader installed were interested in this particular mode of access whereas the iPads provided in the exhibition space were more easily accessible and widely used.

Audience feedback and engagement through digital channels was relatively easy at an immediate level with direct comments on exhibited work posted by a number of visitors during their visit to the exhibition. A longer term strategy that integrates an exhibition website with a number of social media platforms to actively promote makers and work beyond the confines of the exhibition has great potential for building on-going relationships with audience.

In this case the combination of high quality film production and focused passion of the students talking about their work resulted in content that the audience expressed their appreciation of and felt added value to their experience. It proved possible to 'bolt-together' a low-cost bespoke technology solution using widely available Internet applications including QR code generation, Word Press website development and linking this to Vimeo video hosting. The most expensive part of the project was the filming and editing time. In order create a film that they felt was an appropriate representation of themselves as makers, students needed to engage in an iterative process of filming, viewing and editing. This served to highlight their awareness of the need to manage their





online identities as an integral part of developing professional practice and the need to deliver this as part of an educational programme.

As a pilot study, In the Frame proved both the popularity of film and the feasibility of low cost applications for craft maker narratives. The research also suggests more value could be unlocked both for audiences and the event organisers, by using such projects as part of a wider digital marketing strategy.

In the Frame is just one example of how projects can make use of the extensive diversification of communication channels and platforms available through Internet-based digital media. This enables new types of information to be presented, data exchanged and connections to be made, providing new collaborative opportunities that can find expression within the work itself, or within the design, manufacture and marketing of work. The conclusion drawn from this project and the wider literature review was that this diversification of communication channels and platforms, facilitated by low cost Internet applications, in turn facilitates a potentially transformative impact on the relationships within craft value chains – the chain of participants actively engaged in craft businesses - from materials suppliers through to makers, sellers, audiences and buyers.

Increasingly exhibition visitors have begun to expect interpretive resources to underpin and enhance their experience. Increasingly too, opportunities are afforded by social network platforms to comment, share, leave traces, and go behind the scenes. The construction of a mobile virtual encounter with the artist through this project can be seen as an extension of these modalities. Enhancing the visitor experience through digital technology presents a curatorial design challenge, one that needs to be tailored to acknowledge the growing sophistication of both visitor expectations and digital literacy.

Relatively recent studies of the use of PDAs and the like in museums and art galleries designed to bookmark selected exhibits in order to extend the visit (Filippini-Fantoni and Bowen, 2007), concluded that the idea that visitors might continue their investigation and exploration once outside the confines of the exhibition had been shown to be less effective than might have been expected, and that perhaps the enhancement of experience during real-time encounters with objects should form the main focus of such initiatives. The rise of social media platforms would seem to support the democratization of exhibition interaction



and is shaping an audience-centric world of connected opinion and discourse. As In the Frame demonstrates, the drawing upon of the architecture and vernacular of social media serves to provide a recognizable and sympathetic experience for the exhibition visitor.

### **Knowledge Transfer/Exchange Workshops**

The experience of undertaking In the Frame provided the basis from which to develop wider sector engagement with Supercrafted activities. A series of four Knowledge Exchange workshops were devised in collaboration with Jane Sutherland at Creative Skills Cornwall who has extensive experience of devising skills development workshops for the arts sector in Cornwall, and advertised to makers through CSC and Falmouth University marketing channels.

#### **Workshops 1 & 2: Mega Media Wednesdays, 9<sup>th</sup> & 16<sup>th</sup> October 2014**

Two full day workshop event for crafts practitioners were designed to look in detail at the use of Social Media and video narrative to support craft practice was planned and took place on consecutive Wednesdays in October.

The first event was attended by seven crafts practitioners and included presentations and workshop activities: looking in depth at the role of Social Media marketing in small business, highlighting the benefits of different social media platforms, content curation and planning and carrying out brand auditing exercises; an introduction to and practical demonstration of creating a professional business page on Facebook

The second event focused on individual support for Social Media and making a low cost promotional film for use on Facebook. An experimental workshop in film-making enabled participants to think through the representation of their brand for a 1 minute film.

Evaluation of these workshops was carried out through questionnaires. Feedback revealed that the workshops had effectively highlighted new technologies such as Pinterest, Twitter and Hootsuite that makers had not been aware of previously, and had supported a more sophisticated approach to the use of more familiar applications such as Facebook. Makers were inspired to make their own short films using the advice provided by the film-makers and accessible smartphone technology. Reservations were voiced about the amount of time



that managing social media marketing was likely to take and the requirement to learn even more skills as a sole practitioner.

### **Workshop 3: Narrative, 13th March 2015**

The third workshop in the series focused on the use of digital technologies to present narrative in Craft practice. This brought together over 50 participants from across the craft sector including students, lecturers, researchers, craft practitioners, representatives of galleries and professional development organisations. The day included presentations from: Alex Monroe, a jewellery designer-maker whose international brand is founded on narratives of rural England; Madeleine Furness, Maker Development Officer, from the Crafts Council; Prof Mike Wilson who spoke about the application of digital technologies to creating powerful narrative communication. These presentations were followed by a hands-on workshop on writing for online environments lead out by Jez Prins, professional website copywriter. Evaluation was carried out via questionnaire and the response was very positive with participants commenting that they had learnt a lot about representing themselves more effectively through narrative and were more confident about developing this approach for their own websites, blogs, Facebook pages. Examples of participants' responses to a question about what they would take away from the day are as follows:

“Certain ideas concerning how to present myself and my work as a story, specifically showing my workshop and the materials I use as an integral part of my website rather than just my work”.

“Encouraged by what has been said re narrative to continue working on my website construction”

“Interactive personalisation of website and better blog”

“A more autonomous website”

### **Workshop 4: Online Design Interactions, April 2014**

This final workshop was concerned with developing sector thinking about the potential uses of online design interactions for craft based businesses. This area was understood to represent a more radical leap in practice for makers. It was therefore targeted at makers who had been identified through previous workshops as specifically interested in exploring how digital interaction might facilitate bespoke commissioning, a high added value activity common to their businesses. Participants in the event included 5 invited makers – David



Forsyth, Driftwood Surfboards; Jo Jones & Ben Whorwood, Elements of Pattern, Callum Kiss, Tom Raffield Design and Nick Langan, Journeyman Furniture, two technologists from Buzz Interactive and three researchers from the Automatic research group.

The workshop employed a multi-method approach to developing discussion about interaction starting with an introduction and presentation of example websites from the RA; identification and mapping of key points by participants; hands on experience of creating design files and producing physical samples from data using facilities and expertise in Makenow, Falmouth University's open digital making workshop; and the co-creation of a mind-map exploring what is involved in creating an interactive online website lead by participants Buzz Interactive.

The introduction focused on the nature of collaborative value chains and specifically the ways in which online interactions between customers and makers were changing the relationships between maker and consumer. A series of existing websites was used to spark a discussion about the nature of online interaction, augmented reality and remote manufacturing. These included:

<http://www.granniesinc.co.uk/design.php>

<https://www.tattydevine.com/name-necklace-new.html?sk240306>

<http://launchrock.fabsie.com>

<https://www.opendesk.cc/how-it-works>

<http://n-e-r-v-o-u-s.com/tools>

<http://www.fluid-forms.com>

<http://autochina.me.uk/dyo/autochina.html>

The following questions were posed:

- What do we mean by Design Interaction?
- To what extent is interaction demonstrated by example websites?
- How does this relate to bespoke making in craft business?
- How does it relate to product mass customisation?

Participants used post-it notes to identify issues of relevance and points for discussion these were mapped onto whiteboards with each questions as a heading. The post-it comments



acted as ‘aide memoires’ for points that arose in discussion as well as providing points that could be pursued the RA after the workshop. Comments reflected a discussion about challenges with user experiences of online interactivity eg. queries were raised around ‘interface complexity’, ‘customisation vs creation’ and ‘use of language and tone of site to engage people’. Comments reflected group discussion that the kinds of personalised sites used as examples offered a ‘semi-bespoking’ experience where a complex combination of user choices could result in a unique object. It was ease of use and clarity of navigation that was felt to be a key determinant of success in this activity. In the comments and points identified on post-it notes and in discussion throughout the day, participants were clear that this process of customising was different from a traditional bespoke process. This was described as a more subtle and nuanced journey over time in which a customer and maker developed an individual relationship of trust through conversations about desires, context of the commission, design examples, attachment to and significance of objects to be created.

A bespoke relationship was viewed as one in which the customer trusted a maker to explore their ideas and creativity, over time, in the service of a joint vision, possibly working through a number of tests and options in an iterative cycle. Online systems were likely to have rules already embedded, where the customer was felt to be working through combinations of choices, perhaps to a greater degree already framed and restricted from the outset. However, benefits of both ways of working were clearly identified and it was felt that there was a spectrum along which bespoke practices and online systems may overlap, with the specific user experience varying to a large degree within a very wide range of practices that were all labelled ‘bespoke’.

Questions were raised around the specific balance of responsibilities within online systems for things like quality control (with distributed making), safety of designs, and maintaining brand consistency. The specific position of the ‘designer’ within online systems was discussed and it was felt that any web based system needed to take a very specific position with regard to the amount of freedom in design allowed to the customer and control exerted by the designer through the system parameters. Such set-ups were required to be ‘a one-to-many’ rather (than a one-to-one) environments and therefore needed to have



more designed-in background features, testing and set-up costs. The question was also raised ‘when do customers want more choice?’ It was pointed out that ‘customers’ were not specifically or separately represented within the workshop and further research may be needed on customer reactions to online making environments.

### **What’s involved in creating an online design site?**

Buzz Interactive shared their expertise in developing interactive web site design and worked collaboratively with the rest of the group co- create a large scale mind-map using the following questions as a starting point for contributions:

- Who are the players?
- What info is needed?
- How long does it take?
- How much might it cost?
- What’s the process involved?
- What factors determine success?
- What are main problems?
- How many levels of choice can you have?
- Content management systems/testing involved?

The day ended with an exercise to identify the values that participants associated with bespoke making through the creation of individual wordclouds. A discussion of similarities and differences between bespoke and online making was facilitated and a number of technologies that might be appropriate to bespoke making were identified and discussed. These included augmented reality and sketchbook applications. Participants showed a particular interest in the possibilities for adding value to bespoke making and the relationship with bespoke customers through technologies that could help customers visualize products before the design was finalized and help create a shared vision of the finished product in situ, for example, the ability to use augmented reality to create visualisations, for example allowing the customer to see the product to the right scale, in



different colours or alternative options. Sketchbook applications were of interest in that it was identified by participants that creating the 'story' of the making of a bespoke commission was of particular interest to customers. A discussion centered on the possibilities for adding value for customers by providing a digital space, perhaps via a tablet or iPad, that could facilitate the customer and maker coming together to log design influences (referencing websites like Pinterest) and agree designs, chart progress with photographs and so forth. It was felt that this kind of digital story might be of value to both customers and makers.

At the end of the workshop participants requested information about possible funding routes for further research and the RA held meetings with Eleanor Jubb to assess possible routes. An email detailing the following information was sent to participants (see Appendix 1)

### **Interviews with Makers Stage 1**

As a result of the outcomes of Workshop 4 a series of interviews with individual makers was devised to gain more indepth insight into the commissioning and bespokeing processes they were currently involved in. Makers were invited to take part on the basis of previous involvement in the project and on the nature of their practice.

Two interviews were conducted in June & July 2014 with David Forsyth, Furniture Designer and Holly Young, Hatmaker. The following records were submitted by the RA, Isabelle Risner, who conducted the interviews.

#### **Interview with David Forsyth**

The RA and David spoke for around 30 mins. DF explained the role that bespoke surfboard making played within his overall business and how the board manufacturing process worked. The boards are individual and beautiful objects requiring considerable work and consequently relatively expensive. An order may take two months to complete. Bespoke board making is just one aspect of the business. An initial enquiry would be followed by detailed conversations to assess the customer's requirements, for example looking at physical and surfing preferences, expertise and choices of materials, wood, with thickness,



width, height, shape of the rails and so forth needing to be exactly specified. All the designs are then computer drawn and 3D modelled. A deposit is taken. Decisions are mediated through phone conversations and, for example, by looking at the company website for design examples. DF explained how he has already experimented with providing customers with a record of their commission and showed the RA an example pdf booklet developed for a client. This was titled a 'Board Building Book' and included a 'Certificate of Ownership' and pages for information about sourcing wood, machining, CAD design and CNC milling though to manufacture, sanding and finishing. It included space for individual photos of the handover of the board and a 'surfing log'.

The RA and DF discussed briefly whether this kind of logbook could be adapted to a digital format as a joint space for the design and recording of a commission. The RA agreed to discuss this idea with the research team and also briefly discussed interest in AR as a tool for bespoke commissions, the RA showing him the doorbell test previously developed. DF is already knowledgeable in this area.

### **Record of interview with Holly Young**

Thursday 26<sup>th</sup> June the RA met with Holly Young at her studio in Truro for approx. 30 mins. Holly explained the background to her business and how she has built the business up to a stage where she is able to pursue it full time. Most of her work is bespoke hat making for special occasions. She also sells through online market place Not on the High Street. Bespoke work, e.g. for weddings is generally initialised in person and for locally-based clients, for example brides whose families are local but she also has commissions out of county.

Consultations carried out in her studio often involve photos and samples, for example of feathers etc as aids to the conversation, conversation sometimes continuing by email. Holly expressed interest in both sketchbook and AR applications and an initial discussion was had around the idea of borrowing a hat as a way to test whether a scanned 3D CAD file could be used as a way for customers to try on a design as part of the commissioning process. Holly was happy to lend a sample to see if this could work.





## **Designer maker interviews stage 2**

In January & February 2015, a further series of designer maker interviews were conducted.

### **Record of interview with Mirri Damer**

Mirri is a jewellery designer who has a distinct style and is well known locally. She recently designed Dawn French's crown when she was installed at University chancellor. Whilst Mirri does take on bespoke projects, they are always designed within the parameters of her existing designs and styles. Customers will visit her studio or see her at shows and then commission a piece that is based on altering a product that already exists. Very occasionally, commissions are undertaken without a face-to-face meeting but Mirri finds this less desirable.

A large part of Mirri's work is taking existing pieces of jewellery that might be family heirlooms, and reworking the constituent parts into a new piece in Mirri's style. There will be a lot of consultation with the client in the early stages of the process but once the design is approved and creation has begun, there isn't much contact. Mirri doesn't draw the design at the beginning and she doesn't use CAD; it's not until the end that the client sees exactly what they're getting. Mirri doesn't lead clients to expect contact during the making process. Mirri provides each client with a small booklet that shows the 'before' and 'after' of a piece – a photo of the original jewellery and a photo of the new piece. She may also include a photo of the original owner so the family have a record of the heirloom and a record of the provenance.

Mirri can see a place for an online sketchbook as a way of keeping her clients updated during the making process as she recognises she tends to go quiet during this time and they may wonder what's happening. It can also save her time as it will save on phone calls and answering emails.

### **Record of interview with Nick Langan**

Nick is a furniture designer and maker. The initial consultation stage, either by phone or email, is very important; not just to discuss requirements but also to ensure they are a



serious customer whose project is likely to progress. Then a customer visit is vital – see the taste of the client and where the piece will be. He has worked with clients upcountry so this can be difficult although he is starting to work with 3D design now to help this process. He described these digital applications as a ‘godsend’ and that they have changed the way he works.

For smaller projects, the next communication with the client after the designs are signed off will be to arrange delivery. For larger ones, the trigger for communications will be the request for the next staged payment, which will be accompanied by a work in progress picture and some commentary on how the project is progressing.

Nick couldn’t see that the digital sketchbook app would be beneficial to him or his clients – he believes that would take too much time away from the process and also that his clients wouldn’t make use of the app. Each piece of furniture takes quite a long time to make, so any time away from that isn’t necessarily a good use of time.

### **Record of interview with Jo Bury**

Jo is a jewellery designer studying for a MFA at Falmouth University and so has yet to get her own business fully off the ground. Her perspective therefore is how she aspires to work with her clients.

The conversations around the commissions she has undertaken so far have felt long-winded for her; involving sharing sketches and proofs by email or in face-to-face meetings, so a digital app would be welcomed, especially during the work-in-progress stage.

Jo has used Pinterest in the past – creating a board for each project which both she and the client can contribute to, including adding comments to images. At the end of each commission, the board is deleted so there is no on-going record in the public domain of the project.

Jo agreed to trial the digital sketchbook app and to give input into the functionality developed so far so it can be optimised as far as possible before the end of this stage of the project.



## **Technology Developments**

### **Augmented Reality Trial**

In June 2015 Johnny Pope, technologists and resident in AIR was commissioned to develop an augmented reality trial that could be used to demonstrate to makers how augmented reality could be used in the context of a their business. The RA supplied a 3D CAD file of the doorbell at Trellisick House created from multiple photographs taken using a digital camera and PhotoScan, photogrammetry software to combine the images together into a 3D mesh. An AR marker was created from part of the Supercrafted logo and a working model of the augmented reality doorbell was then available on a Samsung tablet and was used during subsequent interviews to demonstrate the concept of AR and engage possible makers.

This trial resulted in the development of a clear pipeline to create and deliver AR content to the Android Platform (see Appendix 3). The IOS was not part of the trial at this stage as it requires an Apple developer license. Via this pipeline creating additional A.R. content could be a relatively quick process with Johnny estimating about 30min or less per product with the caveat that content from scanned data cannot be understood as production ready and this was the area that where more work would be required to optimise files sizes produce high quality AR objects.

### **Shared Online Environment**

The aim of the shared online environment is to facilitate micro craft businesses in documenting the development of their craft products and support the long distance selling of their work. The digital sketchbook will demonstrate the provenance of the craft objects by showing how the project was constructed through text, photographs and video. The digital sketchbook will also work as a communal space for micro craft businesses to share their work with potential clients through visual dialogues.

Since January 2015 The Digital Sketchbook has been developed entirely on Google App Engine (GAE) and all previous development on the Linux Apache MySQL PHP (LAMP) shared hosting has stopped. The research team was concerned about security breaches on the shared hosting and decided to develop the sketchbook entirely on GAE which is thought to be more secure. One of the key features of the digital sketchbook is that it should offer a private and secure space for micro craft businesses to store and share pictures of their



work, if the hosting was not secure then the sketchbook could not be secure. Most social media sites focus on making the content shared as widely and publicly as possible whereas micro craft businesses want to retain control and copyright of all their content. The primary aim of the digital sketchbook was to create a secure and private space for micro craft businesses to store their content and share specific aspects of their work with invited guests. As well as providing secure hosting GAE offers scalability with the flexibility to grow with any numbers of subscribers and with as much content as they wished to store.

By March 19th the research team had developed a working prototype of the digital sketchbook, which enabled users to:

- create a new account
- secure log in
- upload pictures by email
- upload pictures through a web interface
- annotate pictures with text
- annotate pictures with drawings
- view pictures in a grid
- view pictures as list
- sort pictures by date created
- sort pictures by date uploaded
- sort pictures by title
- tag pictures by icon
- sort pictures by icon

On March 19th the research team met with Joanna Bury a jewellery designer based in Cornwall to discuss how the digital sketchbook would facilitate her micro craft business in documenting the development of her jewellery products.

Ms Bury made a series of recommendations for the sketchbook that she felt would make it a useful resource for her business.

**Tagging:** instead of the icon tagging the user can tag pictures with a word or series of words. Dropbox uses the metaphor of a folder to group content. The metaphor breaks if the user



wants to collect the same content in different folders. We use tags to group content and content can be grouped into multiple tags.

**Moodboard:** a collaborative space for the micro craft business to show potential clients and collaborators current visual ideas and comments.

**Sharing:** Ms Bury had been using Pinterest to share images of work but Pinterest was too public and the user cannot control who can and cannot see the boards. We have now implemented a system where tagged pictures generate a mood board and the user can invite people via email to see the board, the user can also remove access from invited guests. This creates a controlled system for the user to manage who see their work.

**Annotating:** the drawing tool enables users to draw directly onto pictures they have uploaded to their account. Drawing allows the user to highlight aspects of the picture. We tested the drawing tool on Ms Bury's Windows tablet and on a Samsung smart phone. While useful the lines were erratic and finish rough. It was thought that due to the erratic lines the drawing tool did not look professional enough for a craft business site. Ms Bury suggested that a scalable vector graphics (SVG) tool would look more professional and appropriate as most craft business were familiar with similar vector tools. Implementing the SVG tool has been stalled due to a conflict in the different JavaScript codes.

The digital sketchbook facilitates micro craft businesses to document the development of their craft products through a cloud storage and archive service that supports the long distance selling of their work through a collaborative workspace. The digital sketchbook demonstrates the provenance of craft objects by showing how the project was constructed through text and photographs.

The digital sketchbook will be demonstrated at a public event on 11th June at the Academy for Innovation & Research at Falmouth University.

## 7. Summary of findings

The Craft Council research identified that digital technologies and apps are playing a more and more significant role in consumers' buying journeys through all of their purchasing



decisions. They expect to be able to conduct at least part of a transaction online, whether that's researching, commissioning or paying.

Designer-makers therefore need to consider this and likely adopt new strategies that will allow them to compete in the market. For some, this may not be easy as there is a skills gap around digital technologies, especially around the various communication and networking tools now available, and especially amongst older practitioners. From the small sample interviewed for the Supercrafted project, it was identified that whilst the designers are using digital technologies during their design process – CAD, 3D etc. – they are not using digital tools for communication. However, one subject was an exception to that, where she was using Pinterest to share design ideas but adapting its functionality to suit her own needs.

It was also identified that there is a slight tension between customers enjoying having input into the bespoke process, and designer-makers not necessarily welcoming that. The designer-makers' attitudes were varied but one common theme was the fact it added time to the making process which wasn't always available.

A further common theme amongst the designer-makers was that they consider they 'own' their designs having spent a considerable amount of time refining their style and building their practice. They are therefore willing to only go so far to incorporate a customer's input into a piece. 'Bespoke' for some makers means a piece that is made especially for a client that may incorporate some unique design elements but is recognisably in the maker's style. They would not take on a commission where the customer exactly specifies the piece.

From the feedback received so far on the Supercrafted application, it has been understood that any digital solution must be easy and intuitive to use – possibly resembling some of the design tools they currently use - and there must be the ability to customise some of the functions within the application so it can be personalised for each designer-maker's requirements and practice.

## 8. Next steps

Some of the suggested enhancements to the shared online environment have yet to be implemented and once that has been done, it is hoped Joanna Bury will be able to revisit the application and test it by applying it to a real project she is working on.



The research team would also like other designer-makers, especially more established practitioners, to test the application against a real project and to get feedback from the customer as to their experience. In particular we would like to explore the ways in which having a record of the process of creating a bespoke commission enhances the customer's perception of the finished piece.

Further functionality enhancements to the app are likely following the user testing, particularly in relation to the customer experience which hasn't been fully explored to date.

There are likely to be other users or applications that would find a digital sketchbook type tool useful. It may have a role within academia and the research team would welcome approaches from academics to test it within this arena. It may not be limited to teaching the creative arts and also have applications to primary and secondary education as well as tertiary.

## 9. Conclusion

There would seem to be a role for a shared online environment application within a designer-maker's practice although the full potential for the tool has yet to be explored. However, in order to fully realise the potential of the tool, designer-makers may find they need to shift the way they communicate with the customers, and the intensity of that communication, in order to meet the expectations of customers in the digital age.

## **Appendix 1: Possible Funding Routes for Small Business Digital R&D**

Some links to innovation funding for businesses -

**Business Innovation Fund** - Fund for Cornish businesses to help them access external expertise from Universities or other experts. Match funding of R&D project – 50% from funding and 50% from business.

<http://www.cornwalldevelopmentcompany.co.uk/investment-funds/business-innovation-fund.html>



**Knowledge Transfer Partnerships** - National scheme funded by the Technology Strategy Board to build a partnership between a company, a University and a recent graduate. National funding pot funds 60% of the project cost and the business funds 40%. Better suited to larger businesses.

<http://www.ktponline.org.uk/>

**Technology Strategy Board – Smart Grants** - The TSB provides lots of grants and opportunities for funding around the development and adoption of technology – it is pretty competitive. They are for high growth potential SMEs to carry out science, engineering and technology R&D projects. There is a range of grant sizes – usually funding 60% of the project cost.

[https://www.innovateuk.org/-/smart?redirect=https%3A%2F%2Fwww.innovateuk.org%2Finvestment-for-growth%3Fp\\_p\\_id%3D101\\_INSTANCE\\_f1sKWfpunv5a%26p\\_p\\_lifecycle%3D0%26p\\_p\\_state%3Dnormal%26p\\_p\\_mode%3Dview%26p\\_p\\_col\\_id%3Dcolumn-1%26p\\_p\\_col\\_pos%3D1%26p\\_p\\_col\\_count%3D2](https://www.innovateuk.org/-/smart?redirect=https%3A%2F%2Fwww.innovateuk.org%2Finvestment-for-growth%3Fp_p_id%3D101_INSTANCE_f1sKWfpunv5a%26p_p_lifecycle%3D0%26p_p_state%3Dnormal%26p_p_mode%3Dview%26p_p_col_id%3Dcolumn-1%26p_p_col_pos%3D1%26p_p_col_count%3D2)

**Technology Strategy Board – Innovation Vouchers** - £5K of voucher to be ‘spent’ at a University. Only specific sectors – Agrifood, built environment, cyber security, Energy, water and waste and open data. Relatively straightforward application process. <https://vouchers.innovateuk.org/>

For further information contact: **Eleanor Jubb**, Knowledge Exchange and Collaborative Research Manager, Falmouth University

Out of this workshop day two possible areas for future development in the area of online interaction were identified:

- the development of an online environment that would enhance conversations involved in commissioning and bespoke products





- the use of Augmented Reality to enable customer to visualise large or very expensive pieces of work in their own environments prior to buying.

## **Appendix 2: Bespoke Production Interview Questions**

In both cases the RA explained the nature of the Supercrafted research to participants, asked them to sign a consent form to take part in research and discussed the bespoke side of their business and whether they would be interested in helping the research aims by testing a digital application. A brief interview script and broad list of interview questions was developed by the RA as a starting point for interviews, this was as follows:

We are keen to write a report looking specifically at bespoke making and are trying to identify what tools makers are using now and demonstrate some of the tools we think that makers might find interesting.

We would expect to publish a research report in the autumn which could include a number of short case studies – about 500- 1000 words long just outlining how different businesses are using digital technologies in bespoke making now. I can show you draft copy before publication.

So,

1. Could you tell me a bit about the bespoke side of your business? What place does it hold in the overall mix of your work?
2. So, when you get a bespoke client – is it always in person, or sometimes someone up country?
3. How do you communicate and develop that relationship?
4. Over what kind of time frame do these project usually take place?
5. Are you using any specific digital means to – to keep in touch?

To help them decide what they want?

To share in the design of the object?

To provide a record of the project as a whole afterwards?

Which bit would you/clients be most interested in?

What do you think about AR? – show AR test.



6. Would you be interested in using one of your projects to try out a sketchbook or AR demo on clients?

7. Would you be willing to come to another workshop where we could show some of these apps to some customers etc. Thank you etc.

### **Appendix 3: Steps for initial set-up in order to create A.R. content.**

- Download Unity and install
- Register on Vuforia.com (A.R. site)
- Download and install Vuforia UNITY packages for IOS and Android
- Go to Android and download & install the DEV kit (Same for IOS - \$99)
- Set-up Unity to use the specified DEV kit
- Steps for creating a piece of A.R. content (once the above has been completed)
- Acquire a 3D model in the form of an .obj
- Simplify model (decimate) in order to run on a phone, using a 3D program
- Create a "Marker" on the Vuforia site and download the resulting UNITY package
- Import the .obj into UNITY as well as the marker package
- Set up your scene in UNITY and export to your desired package
- The website for the A.R. markers and dev kit are here: [vuforia.com](http://vuforia.com)