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The Role of Social Media in Artisanal Production: A Case of Craft Beer

Full Paper

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ABSTRACT

We present craft beer as part of an artisan industry case study that demonstrates how the use of social media creates a community narrative that engages both producer and consumer around the artisanal produce and its values. In contrast to mass drinks production, the past decade has seen a resurgence in specialist artisan 'craft beer' producers, making niche, high-quality products. Specifically, we examine the craft beer industry's use of digital technologies as a way of engendering bilateral consumer engagement with their products, and how it can influence brewing practices and support in-the-field quality control. A qualitative approach, using grounded theory, was undertaken to understand the digital relationships between key stakeholders in the craft beer community, including craft brewers, retailers, bloggers, and fans, through a series of interviews, ethnographies, focus groups, and public events. Our analysis reveals future design considerations for these stakeholders, with findings supporting the design of future interactions that can further strengthen the relationship between small, artisan industries and their consumers.

CCS CONCEPTS

• **Human-centered computing → Human computer interaction (HCI) → HCI design and evaluation methods → Field studies**

KEYWORDS

Artisan industries, sharing economy, social media

1 INTRODUCTION

Craft micro-breweries are an example of commercial ventures that produce *artisanal* drinks; that is to say their products, craft beers, are expected to have been made in small batches using high quality, often locally sourced ingredients and, in many cases, using methods "handed down through generations but now in danger of being lost" [46]. Craft micro-breweries are typically small, independent businesses in one of two forms: standalone conventional breweries, or brew pubs/bars; the latter being comprised of a brewery co-located with its own bar/tap room where beer is sold and consumed. As would be expected from an artisanal approach, craft brewing operations are small-scale and labour intensive, employing relatively low numbers of highly-skilled workers to produce unique, slow-brewed, full-bodied beers using traditional and, also, experimental brewing methods that push the boundaries of brewing science [13],[31]. As such, the characteristics of all aspects of the business including sourcing, production practices and consumer engagement are typically different from large-scale international brewing concerns that dominate both industry and supermarket shelves [35].

The general need to differentiate artisan produce from that created by large-scale mass-producers [1] drives the rallying of *community* activity around such products, for example through intimate face-to-face events and innovative use of digital platforms. Without the large resources required for scalable conventional marketing outreach, craft breweries have instead made substantial, and frequently innovative, use of social media to engage with beer drinkers. By leveraging social media, the consumer is brought closer to the producer through bilateral, transparent communication, engendering community values around the artisanal produce. For example, craft brewers in the UK commonly engage directly with consumers to gather opinion on brewing a particular beer style [12], and routinely use bespoke mobile recommender apps to gather consumer opinion. In the US, work has been carried out that describes how US craft breweries have also adopted a strategy of fostering a 'craft beer culture' using brewery visits, beer events and social media [24], whilst other work reports that customers of a brew pub in Minneapolis "follow the Twitter feed almost religiously" demonstrating fan-like behaviour and attitudes [7].

In addition to innovation around producer/consumer interactions, there is also evidence that craft brewers are adopting unique digital approaches to producer/producer collaborations and relationships; for instance, [8] recently describe the 'unconventional' use of social media by a US craft brewer in promoting its own competitors. This range of digital innovation has allowed the craft brewing industry to communicate their underlying philosophy and values instilled in their beers to a committed audience of followers, fans and consumers.

In this paper, we investigate UK craft breweries as a case study of a digitally-engaged artisan industry, and demonstrate how their use of social media and mobile technologies creates a community narrative that engages both producer and consumer around a product and its values. In particular, we examine the craft beer industry's use of social, digital technologies as a way of engendering deep engagement with their products, and how this influences brewing itself as well as facilitating practices associated with fandom communities [27]. We present a qualitative study, analysed through grounded theory, undertaken to understand the digital producer-producer and producer-consumer relationships through a series of interviews, ethnographies, focus groups, and public events. Our analysis reveals design considerations for key stakeholders in the community, including craft brewers, retailers, bloggers, and fans. These considerations take into account relationships between producer/producer, consumer/producer, and consumer/consumer. Moreover, our findings contribute wider insight towards designing future interactions that can further strengthen the relationship between artisan industries and their consumers.

Our contribution complements a number of areas of current interest by the HCI, CSCW and interaction design communities; firstly, of course, it extends previous work in understanding the digital relationships between businesses and consumers on social media, with a specific focus on customer and community engagement [33], [25]. However it also extends current thinking around the nature of the relationships between food, HCI and digital living (e.g. see [14],[15]), and has special resonance with work focussing on critical reflection on food production and consumption [16], including so-called slow technology [36]. Our work examines everyday practices of engaging with food in ways that oppose mass production and consumption [3], as a prelude to designing for those practices. Our contribution therefore also provides a valuable understanding of the current digital and social media landscape across the craft beer community, which could be generalized to other artisan industries whose practices and motivations have often been associated with slow food movements [44]. Finally, our work also offers a useful bridge to an existing body of research work by the digital fandom community, which may offer the means to better understand aspects of consumer engagement with artisanal food and drink products.

The remainder of this paper is structured as follows: firstly we provide a more detailed background discussion of previous relevant research and an analysis of how the craft beer community currently engages with technology; secondly we describe the methods used for data collection and analysis. Finally, we discuss design considerations and present a summarised conclusion.

2 BACKGROUND

In this section, we discuss previous research as well as technological development and marketing activity relevant to the work presented here. We begin broadly by exploring the general importance of digital social marketing and supporting consumer choice through technology, before discussing how artisan producers and – in particular craft brewers and consumers - have so far utilised social media and other digital platforms.

2.1 The Importance of Digital Social Marketing

It is well known that branding and marketing tools are important for companies to grow a community around their products, with strategic application of such tools recognizing the relationship between a product and the values or benefits the consumer is looking for [37],[40]. Said et al. [39] demonstrated through qualitative analysis how businesses manage their social media presence to facilitate social influence around their products whilst Mahoney et al [33] emphasize attempts that commercial entities make to leverage the affordances of social media to seemingly involve consumers in product design choices.

Hou and Lampe [29] investigated the use of social media by non-profit organisations to increase public engagement, presenting their findings in terms of design implications for social media engagement strategies. The common goal of these studies was the analysis of engagement with consumers through social media, findings as yet do not paint a clear picture on designing the journey of communities engaging with producers from initial interaction, through to building sustainable, digital relationships.

2.2 Technology to Support Consumer Choice

The craft beer segment of the UK market is an example of a niche product competing against a myriad of multi-nationals with large branding budgets at their disposal. In recent years, through skills nurturing and experimental brewing, UK craft breweries now produce uniquely positioned artisan products. Research has shown that for artisanal beer producers residing in niche market corners, product identity and differentiation are all the more important to retain business viability [35]. However, the craft beer industry is now reaching the point of hyperdifferentiation [18]; a vast array of craft produce is available and consumers want to be more informed of what products meet their precise desires [17],[19]. For example, community-driven online reviews, available in smartphone applications, go some way to inform the consumer on exactly what they want, essentially the community is the democratized, digitization of ‘word of mouth’ [22].

Research on the design of *real-time, in-situ* systems to engage and inform consumers on the selection of artisan produce was carried out by Taylor et al. [45], with the artisan product focus on specialist tea. The authors found their prototype recommender system was able to engage consumers and provide relevant information in making a tea selection, they also observed that consumers enjoyed the random element of being nudged into trying something new. Their work also draws parallels with artisan wine selection by consumers, highlighting the difficulties of making an informed choice. Other work has also investigated the effectiveness of online review profiling, and digitization of signage and menus in restaurants [10],[38]. In many ways, craft beer community applications support consumers in making an informed choice based on their personal values. However, with little research carried out understanding how to best support the artisanal producer to consumer relationship, there is scope to add value to these meaningful connections.



Figure 1. Scalable community-driven craft beer applications

2.3 Digital Practices by Craft Beer Producers

A number of socio-digital communication channels exist that support the craft beer community from the

perspective of both breweries and consumers. Work has emphasized the casual, everyday talk by consumers about beer in an online setting on social media platforms such as Twitter [48], and it is unsurprising that general social media platforms such as Twitter and Facebook are commonly used by craft brewers [24],[7],[8] as marketing tools. However, a number of bespoke mobile-centric crowd-sourcing, recommender, check-in, and review applications have been also embraced and maintained by the community. Mobile applications such as *Ratebeer* and *Untapped* (see Figure 1) facilitate the generation of both brewer and user-generated content around craft beer products. Specifically, breweries add products to the applications' database, and the app supports beer fans in the creation of reviews on a specific beer or brewery.

To illustrate community engagement levels, Ratebeer has over 240k beers in its database from 16k breweries, and over 4.5 million user-generated ratings and reviews. Such applications are designed to engage and inform the community around the product, and more generally, to take ownership of craft community values, and provide consumer information. These systems are typically asynchronous by nature and do not provide real-time information; rather they primarily function as a community repository of information that can aid the *in-situ* consumer in the sometimes daunting task of selecting a beer from their local pub, supermarket or beer festival. HCI research has found recommender and online review systems designed with attributes that resonate with consumer values, for example, through reviewer profile matching, can enhance the experience of making informed choices [21],[10].

2.4 Beer Fandom

Given the online engagement of consumers as a community around craft beer we frame this as an example of digital fandom culture [6]. The practice of fandom involves the nurturing of social and cultural capital that exists in a community between fans and other fans, and artists [32]. For example, fandom capital can comprise of specialist knowledge of a niche area, or appreciation of a particular lifestyle. Contemporary fandom practice is evident, for example, in the music industry. Music fans engage with recording artists and celebrities by using social media as tools to connect and strengthen their community fan base through shared values. An example of this is Lady Gaga who uses social media to empower fans to make a contribution to her work; such as wearing fan-designed clothing when performing, effectively rallying the importance of the fan community around aspects of the creation of her music [5]. This type of intimacy on social media between artist and fan leads to a kind of "perceived access to private, backstage behaviour" [20], increasing authenticity and engagement.

In a similar fashion, beer fans will connect with their favourite craft breweries and brewers, and through the types of novel social media interaction initiated by craft breweries such as Brewdog's Mashtag [12], are able to make a contribution to brewing practice, whilst at the same time increasing their emotional investment and perceived importance of their relationship with the brewery and craft community connection. Mashtag allows fans to vote for brewing attributes to create a brand new beer over social media, such as beer style, hops, malt, ABV, any niche processes such as barrel aging, and finally the name of the beer. Therefore the social media relationship between a single craft brewery and many thousands of following fans is very much a reciprocal one. However, it was evidenced in this work that very often the fans met each other and developed friendships at many of the craft social meetings such as "Meet the Brewer", bottle sharing, and festival events. This echoed the findings of Baym [2] in a study of online connections between musicians and fans.

3 CASE STUDY APPROACH

Our case study focused on the rapidly expanding, UK craft beer scene, including craft brewers, consumers, and active members of the community such as bloggers and retailers. Data collection employed qualitative approaches; interviews, focus groups, social media data collection, and a combination of contextual inquiry and ethnography.



Figure 2. 'Brew day' - full cycle of beer production

Analysis was carried out using a Grounded Theory (GT) approach [42], to label and categorise the emergent themes from the data.

To understand a community as diverse as the craft beer scene, and for the purposes of this work, it was necessary to become immersed within it, essentially *living* the experience. As such, appropriate elements of our data collection adopted an ethnographic approach, specifically with active participation in a craft 'brew day', as well as meet the brewer and craft bottle sharing events. 'Brew days' refer to the days in the standard operation of a craft brewery where a new batch of beer is brewed (see Figure 2). It is labour intensive, with the main tasks for a single brew usually completed in a single day. When complete, the brew is then left to ferment until ready for consumption. Brew day activities are often published to social media through posts and video, inviting a dialogue with the community.

3.1 Participants

A small scale, albeit rapidly expanding UK craft brewery was the main focus of the study. Interviews with the brewery director and head brewer were carried out to understand their use of social media and how they project their brewing practices and philosophy to the wider craft community. Key participants that took part in the wider study included: two brewers, one brewery manager, two independent craft beer pub landlords, four beer bloggers, five beer fans, one craft beer retail shop owner, and one graphic designer for a brewery. Figure 4 illustrates the main community actors who engaged with the study, and is representative of an overview of the craft community.

3.2 Ethnographic approach

An ethnographic snapshot of a complete brew day was undertaken *in-situ* by the authors to understand craft brewing practices, and how the discrete processes that form such practices are communicated back to the community via social media. This involved participating in the creation of a craft brew, from selecting hops, through to the final process of brewing.

Outside of the brewery setting, one 'Bottle Sharing' and two 'Meet the Brewer' (MtB; see Figure 3) social events were attended with interviews and field notes recorded for analysis. MtB events bring together brewers and consumers of the craft beer community to participate in a discourse of craft brewing



Figure 3. Meet the Brewer, brewers engaging with community

practices, entwined with tasting and Q&A sessions showcasing the brewery's beers.

One of the MtB events was staged solely by this study's main participating brewery, while the other was based on a collaboration brew with an internationally renowned Danish brewery (see Figure 3) that captures the community experience of MtB events. Interviews with brewers and consumers at both MtB events were carried out as well as social media data collection from Twitter. The interviews were designed to support unpicking the experiences of the craft beer community, and their digital engagement with breweries.

A craft beer 'bottle-sharing' event was attended by the authors. The event was organized by the study's retail shop participant. Participants brought bottles of craft beer to share, with the condition of regaling the group on the story of how they obtained and selected the bottles. The narrative of how the event unfolded was communicated through a beer blog afterwards.

3.3 Data Collection and Analysis

The large amount of qualitative data collected from the various sources was split into two parts. One that describes the community from the perspective of craft producers and their use of social media, and the other describing beer fandom of consumers and their digital relationship with producers.

Grounded theory is suitable for deriving thematic concepts that support further research direction from a corpus of data, and specific to this work, to inform the design space of technologies that support the artisan craft beer industry and community. Interaction design researchers have used GT approaches to analyse and explain phenomena such as digital performance spaces [9] and to inform design [43],[30] - both of which are difficult to understand through quantitative analysis alone.

In this work, GT allows us to understand the craft beer community's use of social media and other technologies that develop and support digital relationships between community stakeholders. Furthermore, it allows us to derive a significant research contribution in terms of design considerations in how to support the community through further digital innovation. When combined, we can develop a fuller understanding of the craft community's intrinsic values, and how to instill and enhance these beliefs further through community-driven digital technologies.

We adopted the first two stages of GT data analysis; *open coding* and *axial coding*, with no requirement in this work to complete the third stage of developing an overarching large-scale theory from the data. Open coding is the process of identifying and categorising key concepts emergent from the data, while axial coding is the process of linking relevant categories. Next, we discuss the findings of our data analysis and outline the derived design considerations.

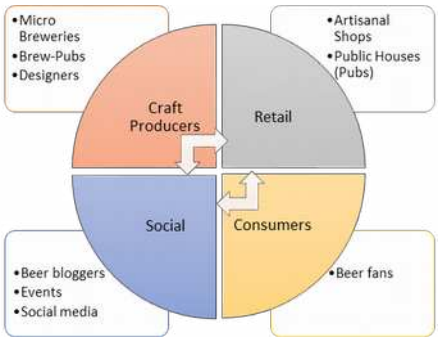


Figure 4. Overview of craft beer community

4. RESULTS AND DISCUSSION

The GT analysis findings are split into two sections: *Craft Producers* and *Craft Beer Fandom*, with each section's data analysed independently. The Craft Producers section discusses results from a craft brewery and retail shop, with supporting data from social media tweets and a beer art designer.

4.1 Craft Producers

A total of 419 open codes were grouped into 20 initial categories on the first pass of open coding. Initial categories from open coding were then subsumed to form key axial categories. The resultant axial categories are the central themes formed from the craft producers' data corpus. Six key axial categories were identified (see Figure 5), these are now discussed.

4.1.1 Personal Communication. We found transparent, frequent, and selective use of OSNs through company and personal accounts by both brewery and retail shop participants, with Twitter and Facebook used to bilaterally engage with the wider craft community on social and product-orientated discussions. The types of communication evidenced under this theme were of a personal focus, yet publicly broadcast, and provided a personal touch the recipient valued.

Selective use of business and personal social media accounts was deemed important so as to avoid conflation: P1: *"... a lot of the breweries we follow or people in brewing don't always follow the main account. As they know it's going to be retweets of where the beer is on etc. I try to use it in a more official capacity than my own account, but*

it's like information based basically. So just bottles and beer, here's a new blog we've done. I don't think you should use the main brand visibility as personal content." and on personal responses to consumers, P1: *"I'll reply to the person to say thank you or glad you enjoyed the beer or cheers, sort of thing. Unless, you're following that person, you don't see that; but it lets the person who's bothered to say it know that you appreciate the comments."*

Importance was placed on who responds to consumers via social media, with a dedicated 'social media person' viewed as undesirable in-lieu of a someone who is directly responsible for producing the beer, P2: *"I don't think that works really, it's a very easy way to crush people's ideas of what they want out of your brand isn't it. If you tweet something that they don't agree with, then they're going to **** you off straight away."*



Figure 5. Craft producers GT analysis key themes

Selective and restrained use of social media was deemed an important factor, infrequent tweets so as to not 'spam' followers was desirable, P1: *"When I say I'm only really doing information and feedback based tweets now rather than retweeting constantly; that helps I think. People get sick off too much. If you spam their feed up with too many retweets, it gets annoying."*

In summary, personal communication between producer-producer and producer-consumer was highly valued by producers and seen as facilitating trust and transparency.

4.1.2 Information Seeking. This theme describes how producers use social media to request and distil information on industry practices and the community. For example, information was sought on the types of beers other breweries were producing, consumer sentiment, and brewing practice. Up-to-date information on current practices in the craft industry was present, *P1: "When I first started using it, it was a really easy way to get information on the industry really." and P2: "I've learnt a lot from it really, because I'm quite lazy, so instead of using books or googling, I just follow twitter threads on stuff and learn loads."* and P3: *"Yeah. Someone says something and you go, oh that doesn't fit with my understanding of how it works, I'll just follow the thread through and read it all, see how it works. Gives you good first person knowledge."*

Information seeking on social media between craft breweries tended to be reciprocal: *"I think we've been pretty generous with our help to other brewers to be honest. We probably haven't asked for as much as we've given out. We must have had 15 or so different brewers come to see how we do it."* On a number of occasions breweries were using each other's expertise, particularly successful breweries, as information filters, effectively if it's good enough for brewery *X* then it's good enough for us, P1: *"A lot of people don't seem to use google enough, they just use twitter, they ask 'where do you your bottles/barrels from, who does your screen printing?' and we found out ourselves a lot of the time*" and P2: *"Everyone [craft breweries] got different things and knowledge, different amounts of knowledge, that we all share.".* However, there was identified limits to seeking and sharing information, P3: *"We've been asked for lists, after suppliers for all the stuff. Basically, I got sent a list of every single thing you'd need at a brewery and asked where to get it from!"* and P2: "*If someone's taking the **** with your advice, you back off a bit, it's a two way street. We've had a lot of advice off people, who are now asking us for advice."* Information seeking is closely related to friendly competition which is the theme discussed next.

4.1.3 Friendly Competition. For small businesses participating in this study, friendly competition might seem a problematic concept in that it could create a barrier in carving out a unique space in the competitive, fast growing industry of craft beer. However, the converse of fierce rivalry was evident; a powerful picture of community values and goodwill between craft producers was present, essentially the *modus operandi* of 'we are all in it together'.

Evidence of equipment sharing, brewing practice tips, and other general business support was clearly identified as an industry-wide trait. Perhaps this goodwill is best epitomized by the contemporary craft beer term ‘Gypsy Brewer’. The term implies a brewer without equipment or premises, who operates solely out of other breweries, often making specialist collaborative beers with the host and their facilities [26],[34].

On describing competition and the friendly nature of the craft industry, P1: *”Theres competition bubbling under the surface, but it’s such a social industry, there’s no point making enemies or slagging other people off.”,* and using social media to broadcast for help P1: *“Recently we had a problem with ingredients, this happens a lot, this is a popular example of how brewers share stuff like this. Empties as well, people will pick up your empties for you, or we’ll agree to take empties in here so they can collect them, like [another brewery]. We were short for key kegs for an export order last week and were asking around on Twitter, you probably won’t get that in other industries.”*

Promoting other producers beer was also present, P3: *”I didn’t see it, but a publican [pub manager], Tom from [pub], one of the [brewery] pubs retweeted we had a beer, well he did a modified tweet and included me in it as [retail shop], and he said something like some cool little quip to say have a bloody look at this and as soon as I saw it I then retweeted it and replied to him and so our front end customers saw it….it [tweet] went from the brewery to a publican of a pub in Sheffield to a retailer (me) and back out to the customer, but he is also a competitor of ours.”*

Producer sentiment that competition often comes second as there is ‘room for all’ was evident: *“…a lot of people at our level, are so happy to be in the industry that we’ve got to keep reminding ourselves of that…you don’t want to get in to that sort of tit for tat stuff with other breweries - my beer’s better than his beer etc, - but we do think about it.”, and the customers want everyone [breweries] in the market competing for more choice”.*

4.1.4 Brand Identity. This theme, not to be confused with the term brand-awareness, placed emphasis on how craft producers want customers to perceive their brand, for example through their use of social media and beer artwork, particularly on pump clips for serving beer (see Figure 6).



Figure 6. Brewery pump-clip artwork

Beer artwork has become a stalwart to differentiate, and to aid beer fans to make an informed selection: P4: *“Let’s not have amazing beer and the branding ****. I think within the industry it has got a lot of better, like the explosion in craft beer it has gone mental. Naturally you vote with your eyes, hopefully the idea being obviously what [brewery] sells is good. If you can get people to look to your pump clip first you can go yeah – I want that – because it looks cool, it draws you in.”* and *“...the amount of ingredients that went into it, this special brew, we had to sort of like package it with the best integrity that we could.”*

Pump clip art and bottle designs were regularly shared on social media from all main actors in the craft producer segment: P2*:“We thought that screen printing would add value to the bottles and didn’t want to piss off home brewers who could peel labels off and use the bottles for themselves. We tried to add as much value to the product itself as people are paying a premium and being loyal.”* and P3: *“I felt it was vital to have image. Anything that we promote must have, must have the image. It could have been the picture of a bottle on the shelf, the picture of a bottle in someones hand, it could have been the picture of a pump clip of a particular beer.”*

Communicating differentiation and value-add was deemed to be key, P1: *“traditional breweries want to start kegging [brew craft], and are asking us for advice. They’re seeing that they need to diversify,*

because there's shit loads of small breweries starting, competing on price. So you have to look for a way to differentiate yourself really." On social media for branding, P2: *"Yeah, definitely. Social media is great for us, it's that personal contact. It's been so good for us to get the brand out there."*

The take-home message of this theme gave insight into the importance of craft beer artwork, particularly with pump-clip art, being highly visible at the moment of selecting a beer. With pump-clips themselves static with no user feedback or interaction, it opens up an interesting space on how this might be enhanced by technology that offers a more intimate link to the brewery.

4.1.5 Product Tracking. Interestingly, this theme highlighted the use of social media as a form of quality control and product feedback, where direct feedback emanated from the fan community. Producers would proactively track and search for their beers on social media, follow the accounts of pubs and shops that sold them, and respond accordingly, P1: *"Critical feedback is fine, and it's quite good if people say it was in bad condition or it was tasting really old, then we'll keep an eye on that and see [on social media] whose serving the beer and potentially not selling them it again; or making sure they know how to store/serve it."* and P2: *"It happened a early on where people were wanting just a cask for stronger beers and we never really wanted to do it; the odd occasion we've done it, you can watch it on twitter, because we've had stuff like [beer] being on for two weeks. Anything pale and hoppy is going to be past its best by a few days really."*

Such use of social media for tracking purposes has major benefits to the community, helping to ensure the product meets the values instilled in the brand identity by the brewery, which must also match consumers' expectations and values. Strikingly, social media also acts as a 'sales' filter when pubs/shops are not maintaining the beer's optimal condition, in some cases outlets may not be sold the beer again. Similarly, on top of the public facing social media channel, a backchannel between producers is initiated to rectify quality issues identified by fans, P3: *"I saw on Facebook a customer sent a picture of their blueberry bitter beer from a pub and it was green and said should your blueberry bitter be green? [The brewery] said no it shouldn't, please tell us which pub you are drinking it in, the conversation developed and the brewery said we will speak to them and sort it out."* and *"anything you drink in a pub, breweries lose control at perhaps the most important point which is perhaps why, to further emphasise the quality of their beers every smart brewer has either got their own brewery tap or has developed tasting rooms."*

4.2.6 Social Feedback & Events. This theme identified how producers use social media to broadcast Meet the Brewer and Bottle Share events. It also described how producers share, or respond to, posts from consumers who had 'checked in' to a beer or place where it was available. For example, tweets on broadcasting meet the brewer events*:* "*[@brewery]: 1 week to go until launch of [launch beer] at [@pub]!"* with responses from fans, F1: "*[@brewery] [@pub] What time are you starting and will there be other [brewery] beers on?*" and F2: "*[@brewery] [@pub] I'll be clawing at the door like a zombie from Shaun of the Dead next Wednesday at opening time.*"

Tweets of fans checking into beers at locations such as pubs, or retail shops were regularly retweeted by producers, acknowledged as being akin to a 'digital cheers', P1:*"you can see people drinking it. It's funny really, it doesn't really start a conversation, it's just a statement. Like, 'I'm drinking a [beer], at The Blackheart, London."* and *"Here I am, I'm drinking it right now, kind of a 'cheers'."*

4.2 Craft Beer Fandom

The analysis for this segment of the craft community examined data from beer fans and popular beer bloggers, producing four main themes of interest; *discovery*, *values*, *community*, and *social*.

4.2.1 Discovery. This was a core theme for beer fans and often described a vivid recollection of their 'turning point', the moment in time when their personal journey and discovery of craft beer started. The theme also identifies a desire for ongoing discovery for new craft beer experiences. On discovering craft, P5: *"When I was at uni I went to university of teeside and I used to buy 8 cans of carling for a fiver at the weekend. Just 8 cans yep, done. I got into real ale, I started drinking cask beer, c-a-a-ask beers. I went over to America were they have a massive micro-brewing scene, and I came back wanting that beer in the UK and now,*

here it is." and P6: *"So I went to a pub that had craft beer and I tried Kernel, then I tasted café oto, then I spied on the interweb to have a look at other places and that's how it rolls, You know, you look and find one craft beer, then you find them all."* and P7: *"So that day I went out with a group of four lads and found it nice and comfortable to try something new and different which I liked instantly. Then it was a steady progression, as I said in me blog the other day I were drinking a craft 12% triple IPA 'tickle monster' from Siren, and that's nearly 15 years ago to the day, an August day trip I had my first IPA,, the journey then drifted via supermarkets to now."*

Beer bloggers take the discovery element further, and through their perceived special relationship with breweries, feel it is their 'duty' to disseminate their experiences to the wider community, essentially facilitating discovery to others, P7: *"We are having a fantastic time in the UK, almost every day, every week, there is something new to discover in a new beer, new brewery, and I realise it is my duty to experience such beers and share it.."* and P8: *"If you are going to brew a forward thinking product, a new beer that's quite flavourful, the first people you want to drink it are the people who will write about it for a hobby, a blogger is someone who is halfway between the consumer and industry, they wana facilitate , y'know they enjoy writing and might reach a hundred drinkers who just drink craft beer."*

4.2.2 Values. This is perhaps the most important theme from beer fans, it highlights desirable elements of trust, transparency and integrity from breweries, which must be reflected in the end product. Examples of these values resonated throughout much of the data, P7:*"I would say Kernel [brewery], what they do they do it to perfection. They have such a good understanding of their history in London which is important to me."* and *"… there is like 10 new breweries every week and you taste them and kind of decide if you like them or not. Sometimes one of these breweries is so good that you just trust them to have a delicious flavour, that's what it's all about."* and P9: *"These breweries are tech savvy, they have connected with people and to them it's all about humanising their approach to reach out to us..."* and P8: *"breweries personalising the experience stops it from being just a company selling to a person, to a guy, you feel connected to the inspiration behind the beer."*

Fans describing how a craft brewery's ethos could resonate with their experiences was identified, P9: *"Beer is something you don't list of a list of ingredients for, beer doesn't taste like that. It's much more complicated than that. It can start off with things you find references for, maybe feelings, parts of taste, maybe because there is smells and things that you can experience."*

Personal values are multi-faceted and complex, however it was clear from the data that once a beer fan makes a meaningful connection to the brewery, usually through social media, a loyal following can ensue. Often, the fan becomes a broadcaster of the brewery's values and identity.

4.2.3 Community. Craft Beer is inherently social, it's no surprise the theme of community featured prominently. The craft community was universally seen as 'full of good people'. In particular, beer bloggers have a strong sense of community connection with one another, P9: *"I love [brewery] beer and I'll come to any event they do in London, but through this we have met each other through our blogs, we hang out and such and it's more than just twitter and a blog for us. It's a bit of a community that started with the blogs, I'm sure there is a lot of other bloggers here tonight."* and P10: *"I think it's a great community to be involved in, beer people are almost always good people. Beer people are great because, unlike a lot of other industries I think brewing industries are very hospitable and open."*

Experience of positive aspects of the community was present, P8: *"The thing that I just said is craft beer is really hospitable, the barman just came over and started talking to me about the beer I'd just bought, basically proving my point. He just came over. It's all about the connection [community], none of us know him, but it was because of this [beer] that he came over. We bought this particular beer and he wanted to know what we thought about it."*

The craft community's use of technology to connect to other like-minded fans was mentioned:, P7: *"the great thing is that you always start out with the connections with these people digitally because the movement around beer now is so much bigger than where you live, the city where you live, the country, it's the world. You can connect with people*

that are drinking the beers you love all over the place." and P10:*"...big into food, big into coffee, and London is, there is something really special happening in London as well like it went from 6 breweries when I came to London to 48. So like as exponential growth you cannot not be excited by that if you are into beer to some degree as this guy [friend] is a writer and I'm a designer it makes sense as a topic to talk about together. In this respect social media is so important."*

4.2.4 Social. There was a degree of overlap between social and community themes. However through the process of analysis, social was distinct enough to emerge as a theme. It describes the social fabric of the craft community, embodied in social events such as meet the brewer and beer festivals. It was also evident that social media was being used as the primary channel to advertise such events, and as an enabler for community members to meet and develop friendships around a common interest.

Social media was described as the craft grapevine for information on events: P11: *"I heard about it on Twitter and I really like [brewery] and heard they were guna have loads of lines on and I asked these guys if they wanted to come."* and P10: *"it's been mad and I've followed the whole thing [beer launch] on Twitter all day."*

Friendships were also developed in the community through social media, P7: *"We started chatting to each other through Twitter, we went for a beer together, bumped into each other at various craft events. That's how it happens."* and P12: *"I've met like a few really good ones [beer bloggers], and it's all just because I'm here from the social media effect."*

5 DESIGN CONSIDERATIONS

The themes derived from our analysis provide a blueprint for the design challenges in supporting a digitally-savvy community around artisan products. The design considerations discussed here are relevant to the HCI community as a starting point to understand and enhance the digital relationships between small artisanal industries and associated communities. Although not the focus of interest for this paper, the economic benefits of successful, digital services for artisanal industries are clear and contribute towards a sharing economy model. With an engaged and mobilised community fan base, as well as a strong focus on producer-to-producer support, we would expect future design elements to reconfigure levels of connection and provide more depth to producer engagement with fans [5],[6].

The craft beer community in the UK are generally engaged, and already use a number of existing technologies to support brewing and fandom practices. As such, designers should be wary of creating 'silo' applications that introduce yet another layer of interaction, and instead should look to incorporating sympathetic design consideration into existing services.

From our analysis three overarching types of craft community interaction were identified for consideration when designing supporting technologies. These were: i) producer to producer, ii) fan to producer, and iii) fan to fan, with some expectation of overlap. Using these main interaction headings to group our design considerations, we will now discuss each in turn, and how they support the design of future technology and services.

5.1 Producer to Producer

Due to the small size of many UK craft breweries, there is often collaboration between breweries to share resources such as brewing practice and experience, equipment including bottling and canning machinery, and other resources to increase capacity to meet demand. This suggests that craft producers already operate a loose form of "sharing economy" [4]. There is an opportunity to more specifically support this sharing economy through digital infrastructure, and indeed, learn lessons from HCI work in this space. Work by Bellottis et al [ibid] presented peer system design implications, with a key design attributes for consideration such as 'social influence' (reputation) and 'instrumental motivation' (improve current solutions).

i) Building on the idea of a sharing economy, and evidenced by the data gathered from our producer participants, there is opportunity, to produce a digital inter-brewery service that supports collaboration in sourcing ingredients, bottling and canning, in order to minimize economic impact for these small businesses, and also contribute towards more sustainable practices. Effectively, such a resource might resemble a network, where a shared pool of resources is presented based on matching and comparing similar craft breweries, along with a reputation system that ensures that brewers get out

roughly as much as they put in to the system. Such a system would undoubtedly be useful for other small artisanal industries facing similar pressures.

ii) This type of system could support not only the sharing of physical resources, but also expertise, experience and knowledge. The option of selective and anonymous sharing of information and resource requests should be enabled where the need arises, in order to avoid conflicts of interest and leaking of commercially sensitive information. This would avoid potential conflicts of interest around brewing practices and other aspects of the business, but still support a sharing economy model.

5.2 Producer to Fan

Understanding and supporting the producer to fan interaction is an important step in creating an enduring connection between brewery and fan.

i) In order to design tools that support producer to fan communication, it is important that such tools are to some extent 'context aware' i.e., - aware of the context in which communication has been initiated and occurred. This would allow brewers, in hindsight, to examine the impact of successful and unsuccessful interactions. For example, in our data we saw examples where fans provided information to producers on the quality of their product at a particular pub or shop, or mentioned that their product was featured at a bottle-sharing event. This communication becomes more helpful if the brewer knows who initiated the conversation, at what time, from what location etc.

ii) Beer fans placed importance on personal communication with the brewery team, which projected feelings of trust and transparency in favour of the brewery. Specifically, it was important for fans to understand who at the brewery they were communicating with over social media, with a preference for someone directly involved in production, such as the master brewer, and therefore part of the brewery's values and ethos. Similar findings were presented by Hou and Lampe's work in this space [29]. Beer fans were particularly averse to conversing with brewery 'representatives', such as marketing, who weren't core to the production of the artisan produce of interest. Thus, making it clear who is speaking on behalf of the brewery, particularly where shared accounts are used, is a clear design implication.

iii) The *quality* of the beer was a frequent topic of engagement. Quality in this context doesn't signify a particular brew style or ingredients used, but rather how it stored and served. Expertise is required to manage variables such as temperature and cellar equipment functionality at the point sale. In the absence of such expertise, the beer product can degrade, resulting in inferior quality. As evidenced in our findings, breweries regularly monitored social media as a means of quality control feedback. This could be designed as a more robust feature, for example by using established crowdsourcing techniques [11], allowing discrete reporting of beer quality by consumers, with breweries alerted in a timely fashion to issue of quality.

iv) Pump-clip artwork is a significant catalyst to influence consumer choice when selecting a craft beer, and is often an overriding factor in the absence of alternative information. Designers need to consider the importance of pump-clip art, and how it could be transposed onto a viable digital interaction to engage fans. The goal of the pump-clip is to draw consumers in, and attempt to communicate the values and philosophy of the brewery. However, there are issues that need to be considered around adding 'extra' interactions to beer art, which can detract from the artist's original concept. An experience that brings the brewer virtually *in-situ* to the consumer when making a choice is a desirable outcome.

5.3 Fan to Fan

A special group of highly motivated and engaged fans - beer bloggers - are inspired to share their experiences with other fans. They record their experiences as a combination of place, people, and product, and publish their reflections through blog posts and social media. Essentially, they contribute a great deal of fandom capital to the community [32]. They can influence others fan to try new beers or visit hitherto unknown places.

i) Designers should be aware of the experiences that beer bloggers value and communicate, such as special "meet the brewer" events, and launches of one-off brews. The beer community values these events similarly to how music fans treasure small "secret" meetings organised by artists for loyal fans [20]. There is the potential to use geo-location technology to archive a "trace" of the experience in the physical environment that would be discoverable

to fans. This would enable discovery and sharing of community craft beer experiences.

ii) Social events are the mainstay of the craft community by facilitating friendships and creating depth to producer-fan connections. Currently social media such as Twitter and Facebook are the most popular methods of communicating the plethora of social events at local, regional, and national levels. However, there are issues with information overload when using OSNs, leading to information being missed or overlooked.

6. CONCLUSION

In this paper, we have explored how digital technology – and social media in particular – is used by both producers and consumers in the context of artisanal drinks production using craft micro-brewing as a case study. We posit that there is much to be explored from the viewpoint of designing for a peer-to-peer sharing economy that utilises digital social media as an outreach and communications channel [4]. Indeed, our findings reveal that craft breweries already operate a loose sharing economy where labour, knowledge, and resources are shared, commonly with a dialogue initiated on social media.

Our findings provide a comprehensive insight into how an artisan industry digitally connects and forms relationships with its peers and associated community of fans. The breweries used social media not only as a means to engage consumers with their products, but also at times for important peer-to-peer knowledge transfer and sharing of labour and resources. We also found that community fandom, facilitated through social media and other technologies, helped increase social and cultural capital within the craft beer community, not just between breweries and fans, but also between brewery to brewery, and fan to fan interaction. Our analysis makes a valuable contribution to HCI by providing a number of design considerations that demonstrate how technology may be designed to further support artisan industries and communities, with the common goal of creating greater depth of engagement and social connection. These findings may also be generalised to other small-scale artisan industries that face similar pressures in competing with large multinational companies.

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