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What Makes a Maker?

- Curating a pioneer community through franchising

Abstract

Academic research typically portrays the Maker Movement as a bottom-up emancipatory movement that emerged out of localised, grassroots initiatives. On the basis of a broad media ethnography that gathered data in Germany, Great Britain, and the USA, this article demonstrates the myopia of this assessment. Rather than being a bottom-up movement, the Maker Movement is in fact a pioneer community with intimate connections to the corporate world and the political class maintained by a globally spread organisational elite. The increasingly global sweep of the Maker Movement is a complex act of co-construction involving an abundance of different actors. With its curatorial centre firmly embedded within the offices of the Maker Media company—guiding the discourse on the movement's identity through its periodical Make: and its experiential experiences through international Maker Faires—the Maker Movement has its organisational basis in a franchise model that leaves it open to the flexible influence of an organisational elite who secures the intellectual and physical space for individual practitioners and local groups.

Keywords: Maker Movement, pioneer community, maker spaces, franchising, curating, deep mediatization

1. Introduction

The terms "maker" and "maker space" have become fairly recognizable over the past few years. Across Europe and North America one would be hard-pressed to find a major city that does not house at least one maker space, a site providing access to the latest creative tools including 3D printers and laser cutters, a place where knowledge sharing and advice are the standard currency. In previous research, this spread of maker spaces and the related Maker Movement is presented as a bottom-up process. Makers appear as a kind of movement emanating *from below* embodying amateurs trying to establish a new culture of manufacturing. A great emancipative force is assumed and this is exemplified no more clearly than in David Gauntlett's book, *Making is Connecting* (2018) with its pointedly expressive subtitle: "the social power of creativity".

In contrast to Gauntlett's position, this article aims to make tangible my argument that the spread of the "idea" of the makers was a highly curated process of co-construction. A central position in this co-construction was occupied by the Maker Media company, who publish the *Make: Magazine* periodical and holds the rights to the Maker Faires. Maker Media's curatorial practices were based on a certain financial and organisational model,

namely, an adaptation of the franchising model. Contrary to their own discourse, the Maker Movement is *not* a social movement that has emerged "from below", but, rather, it constitutes another form of social figuration that I refer to here as a *pioneer community*.

Pioneer communities represent an enduring phenomenon in the development of digital media and their infrastructural formations. We can see a prime example in Fred Turner's work on the Whole Earth Network (2006) who published the catalogue of the same name and curated the discourse on a large number of the technological developments that emerged out of the Bay Area. Media-related pioneer communities like to refer to themselves as "movements" but are not social movements in the narrow sense of the word due to their intimate relationship to private companies and the political world. We could say that they actually share more characteristics with think tanks (Hepp, 2016) and it is the 'organisational elites' (Hitzler & Niederbacher 2010: 22) within pioneer communities who embody most of their curatorial activity. From this point of perspective, we can understand Maker Media as one important facet of the Maker Movement's organisational elite.

Based these considerations, this article deals with the following research question: *How does the organisational elite of the Maker Movement curate the co-construction of this pioneer community?* To these ends, I will briefly outline the Maker Movement as a pioneer community. I will then explain the methodologies utilised for my analysis followed by an account of the empirical results we gathered. These data describe, firstly, how Maker Media was able to curate the identity discourse around the Maker Movement by outwardly franchising *Make: Magazine* and its online platform, and secondly, how the same franchise model was applied to Maker Faires. My conclusion will reflect more generally on Maker Media's franchise model as a way of curating pioneer communities in times of deep mediatization.

2. The Maker Movement as a pioneer community

Tracing the origins of the Maker Movement is no simple task. When we consider hacker spaces (community-operated work spaces for people with an interest in computers, technology, and hacking) and FabLabs (small-scale, but very well equipped workshops for digital fabrication) as similar locations to maker spaces where their respective communities come together, 'hacker culture' (Coleman, 2013; Hunsinger & Schrock, 2016; Levy, 1984; Lange, 2015) can be identified as a significant precursor to the Maker Movement and there remains a connection between the Maker Movement and the hacking and open-source communities to this day (Krebs, 2014: 20). Furthermore, the Do It Yourself (DIY) movement (Atkinson, 2006), which has a long tradition in Europe and the US, has significantly influenced the Maker Movement (Hemphill & Leskowitz, 2012).

The Makers emerged around 2005 when Neil Gershenfeld's (2005) book on FabLabs and 3D printing was published, *Make: Magazine* was launched by O'Reilly, and the first Maker Faire was held in the San Francisco Bay Area. The introduction of the Arduino board in 2005 was another important step in the development of the movement, as was the introduction of the RepRap Open Source 3D printer[i] in 2007, the first MakerBot 3D printer[ii] in 2009, and the Raspberry Pi microcomputer[iii] in 2012, technologies that support practices of self-determined manufacturing. The publication of *Makers: The new industrial revolution*, a book by former Wired editor Chris Anderson (2012), offered a condensed ideology compatible with the maker community's vision of collectivity and change. Simply put, they were represented as a 'community of equally obsessed people from around the world' (Anderson, 2012: 15; 73-77; 92-95; see also Hatch, 2014), a community that believes that the 'internet of things' (Greengard, 2015) would herald a 'new industrial revolution' (Anderson, 2012) bringing together DIY, handcraft, and self-made technological innovations.

As already mentioned, we can understand the Maker Movement in its present form as a pioneer community. Communities of this kind are not only figurations connected to new media technologies, their members also share a common "we" and have built enduring structures to maintain shared practice. Pioneer communities tend to have a sense of purpose: a sense that they are at the forefront of the media-related transformation society is going through. Individual members publicly present themselves in these terms and they are often the subject of ongoing reportage, whether this is in media run by the pioneer community itself or in more traditional outlets (Hepp et al. 2018).

Pioneer communities are neither social movements nor are they think tanks; they behave much more like a hybrid of the two that finds its specific nature in an orientation towards media-related change. Much like social movements (Porta, 2013), pioneer communities are engaged in societal transformation from below while being open to new forms of entrepreneurship and policy-making akin to traditional think tanks (McGann & Sabatini, 2011).

Maker Media was founded as a subsidiary of O'Reilly Media in 2012 by Dale Dougherty to publish the magazine, *Make:,* and organise the early Maker Faires. Despite going through a financial and organisational crisis in 2015/16, resulting in several layoffs and a restructuring of the firm, Maker Media persists as the pillar of the pioneer communities' organisational elite. Recent initiatives— for example, the "Maker Net", developed by Nathan Parker to connect makers around the world,—are put into motion with Maker Media's knowledge and support.[iv] The company's principal partner in German speaking countries is the Heise Group based in Hanover.

It is typical that the organisational elite of pioneer communities are unable to "control" them by virtue of their complexity. Nevertheless, they have enormous influence over them through their curatorial activities. In general, 'curation' refers to a process of 'defining', 'selecting', 'arranging' and 'presenting' (Traue, 2013: 286; Thorson & Wells, 2016). With this definition in mind, since 2004 O'Reilly and later Maker Media as a company began curating pre-existing tinkerers and hobbyists of a technological bent to create a shared identity under which they could come together as so-called makers. But how did this organisational elite curate the co-construction of the Maker's pioneer community in detail?

3. Methods

My analysis is based on a media-ethnographic approach to participant observation, interviews and discourse analysis. While an 'ethnography proper' aims at a 'thick description' (Geertz, 1994) of entire cultures, the objective of a media ethnography is far more limited and can best be described as 'an ethnography about humans who use, distribute or produce media' (Bachmann & Wittel, 2006: 183). As these media-related practices take place in various locations, media ethnography can often take the form of a 'multi-sited ethnography' (Marcus, 1995; Falzon, 2009). Its typical instrument, therefore, consists of a bundle of 'accumulated ethnographic miniatures' (Bachmann & Wittel, 2006: 191).

For the purposes of this study, we interviewed and followed members of the Maker Movement, in particular, those who are considered to make up the community's organisational elite (*person-based access*). As they form the principal site for the integration of the globally scattered pioneer communities that make up the Maker Movement worldwide, it was essential that we focused a large portion of our observation at Maker Faires (*event-based access*) so that we could develop a clear understanding of the community's transnational and transcultural qualities. As one might expect, pioneer communities bring with them specific locales and in the case of the Maker Movement these generally consist of so-called "maker spaces". To complement the participant observation conducted at the Maker Faires and our interviews with the organisational elite from the community, we spent a substantial amount of time observing and interviewing members of two local maker spaces (*location-based access*). Combined, these three "ethnographic miniatures" allowed us to form a comprehensive picture of the Maker Movement in its current form. While a media-ethnography can also address online media practice, our research neither takes the form of a 'virtual ethnography' (Hine, 2015) nor does it constitute a 'netnography' (Kozinets, 2015) which address practices taking place online. Rather, the ethnographic study we conducted is more concerned with locally situated media-related practices and the communicative figurations they form as they occur across a variety of contemporary media.

Table. I. Data basis

organisational elite (person-based access)	• Interview with Dale Dougherty (Maker Media, Executive Chairman and CEO)
	• Interview with Daniel Bachfeld (Heise Group, Editor in Chief, Make: Magazine, Germany)
	• Interview with Daniel Rohlfing (Heise Group, Senior Product Manager, Maker Faire, Germany)
	• Interview with Peter König (Deputy Chief Editor, Make: Magazine Germany)
Maker Faires: Berlin and Hanover (event-based access)	• Participant observation at both events in 2016 and 2018
	• 8 interviews with professional exhibitors
	• 18 interviews with amateur exhibitors
	• 27 (partly group) interviews with participants
Local maker spaces (location-based access)	• Participant observation at two local maker spaces / FabLabs in 2016 and 2018
	• 4 group interviews with local organisational elite
	• 14 interviews with members and visitors

Within the overall framework of a media ethnography, that was in fact part of a larger comparative research project on pioneer communities in Germany and the UK,[v] this article is based on selected data (see Table 1). To develop an understanding of the movement's organisational elite, in February 2017 we interviewed O'Reilly Media co-founder, Dale Dougherty and performed a discourse analysis of his book, co-written with Ariane Conrad, *Free to Make* (2016) and the content of Maker Media's website. This was followed by interviews with three of the principal actors at Heise Media, the German publisher of *Make: Magazine* and licensee of the Maker Faire in Germany. Editor-in-Chief, Daniel Bachfield, Deputy Chief Editor, Peter König, and Senior Product Manager, Daniel Rohlfing each provided valuable insight into the franchisee's experience within the Maker Movement. The second stage of data collection was accomplished through a round of participant observation carried out at the two largest German-speaking Maker Faires in Berlin and Hanover in 2016 and 2018. In addition, we interviewed each of the twenty-three exhibitors and a selection of visitors at the Hanover Faire in 2016 as well as a selection of professional and amateur interviewees and participants in 2018. Finally, I present data from participant observation and interviews carried out at two maker spaces in North Germany. All of our data was analysed—supported by MaxQDA coding software—by applying standard grounded theory procedures, that is, a step-by-step process originating from an open coding exercise that is then transferred to more focused methods of axial and selective coding to help establish theoretical foundations that are, in effect, 'grounded' in empirical data (Glaser & Strauss, 1999; Corbin & Strauss, 2015).

This approach allows us to triangulate our detailed interviews with prominent members of the Maker Movement's organisational elite with our discourse analyses and observations of and interviews with exhibitors and participants with the end goal of "reconstructing" Maker Media's franchise model. It is important at this point to distinguish the two separate branches of Maker Media's franchise model: on the one hand, we have the *Make: Magazine* franchise, the principal objective of which is to curate the movement's identity discourse, while on the other, we have the Maker Faire franchise that seeks to curate extraordinary experiences for the pioneer community.

4. Franchising *Make: Magazine*: Curating a discourse

As outlined above, Maker Media is integral to our understanding of the co-construction of the contemporary Maker Movement. However, this does not mean that the movement's growth was a result of Maker Media's work alone. But if we are to approach a figuration of this pioneer community with adequate rigour, it is necessary to consider Maker Media as a crucial part of its organisational elite while understanding that the entire figuration is made up of multiple actors. Our data shows that Maker Media's engagement in the curation of the Maker Movement is built around a 'franchise model', which differs, however, from a standard understanding of franchising as it is implied in economics and management.

If we follow the debate around franchising in the fields of economics and management,[vi] it is best understood as a system for the sale of commodities, services or the application of technology. Franchising centres on close and continuing cooperation between juridically and financially autonomous companies. The core idea is that the 'franchisor grants his franchisees the right and he puts them under the obligation to exploit a business in accordance with the business concept' (Verbieren et al., 2008: 398).

While having some similarities with this general definition, Maker Media's franchising exploits are realised somewhat differently. Their model is harnessed to curate a pioneer community while at the same time cultivating a certain openness that aligns with their values all with limited resources. In Maker Media's model, *Make: Magazine* serves to curate an identity discourse, which in turn generates more localised opportunities for the community to experience the movement through Maker Faires. Of course, Maker Media, much like any other commercial endeavour, has commercial interests. However, the goal of value creation is limited by the fact that its central actors are concerned with measurable action in the pioneer community; profit interests are manoeuvred towards the goal of creating an 'imagined community' (Anderson, 1983) based on sharing and mutual support.

Maker Media's character as that of *curator* becomes more tangible if we cast a glance at the magazine's origins and the decisions involved in its naming. According to their website, Maker Media claim to be 'leading the Maker Movement'.[vii] During his interview, however, Dale Dougherty took a much less self-congratulatory tone but was still at pains to emphasise the role his company played in defining what makers are and what they have done to bring together a collectivity of tinkerers under that name. Interestingly, his starting point was the broader hacking community: While preparing the first issue of what became *Make: Magazine*, working together with O'Reilly Media in 2005, his initial instinct was 'to call it hacks magazine' (Interview Dale Dougherty, 02/2017; see also Dougherty & Conrad, 2016: 14-16) to address hacking in a broad sense, encompassing not only computer hacking but also ways in which it was possible to 'hack your health or hack finance or things like that […] not enough, especially younger people, understood that' (Interview Dale Dougherty, 02/2017).

This wider understanding of what was possible through hacking led Dougherty to start thinking about another, broader and more accessible term that would connect with the tinkerers he was targeting with the magazine. In the end, he settled on *Make:*. He told us that the 'name is a bit of an inside joke' based on a UNIX utility application that 'compiles a list of programs, using a file that starts off with "Make:"' (Dougherty & Conrad, 2016: 278). Private jokes aside, the term was purposefully chosen to address the loose network of tinkerers and hobbyists that had no overarching platform for sharing their experiences in building and finishing their projects but had hitherto not formed a coherent community. As Dougherty put it, 'there were small communities out there, but they didn't connect to each other very well: there wasn't any framing for that' (Interview Dale Dougherty, 02/2017).

When the team around Dougherty—specifically Mark Frauenfelder as editor-in-chief and David Albertson as designer—began putting together *Make: Magazine*, they realised that they were giving an explicit name to a latent collectivity of people. Dougherty reflects that 'using the word Maker and stuff was sort of like giving away something' (Interview Dale Dougherty, 02/2017). In his view, this would create a 'decentralised network […] anybody can join it, just by saying they're part of it' (Interview Dale Dougherty, 02/2017). This openness is also

reflected on the Maker Media website, which describes makers as a movement that 'embraces innovation, creativity, and learning to improve our communities and create a better future'[viii].

Their *self-perception as curators* is clear: Maker Media's main players emphasise their central role in the organisational elite of the Maker Movement, even claiming to have coined its nomenclature while at the same time assuming the openness of the Maker Movement; in their refusal to determine who is and who is not a member, affiliation is ultimately defined by the members themselves.

To what extent a discourse on identity is influenced by Maker Media becomes evident when one considers the *practice of curating* itself. First, there is the act of defining the movement's core identity. Even though Dougherty emphasises that 'the magazine did not have any ideological leanings', we can see processes of identification emerging through the magazine's claim that they are aiming to construct a 'mindset [of] the practice of making', or when they urge the reader to 'do something to learn something new, try something out' (Interview Dale Dougherty, 02/2017). This very clear position is laid out in early editorials where the question of what constitutes a maker is explicitly discussed.

Second, the Maker Media team engage in *selecting* and *presenting* Maker projects. Dougherty defines this as a form of "community journalism" where the goal of the magazine was not to produce traditional "tech journalism" as such but 'to follow what individuals were doing' (Interview Dale Dougherty, 02/2017). Accordingly, the magazine centres around particular stories on certain maker projects, some of which resemble how-to guides for similar projects. Ideally, from the point of view of *Make: Magazine*'s editorial team, those who regard themselves as makers would be recruited to write for the magazine. However, this presents Maker Media with a challenge; not all hobbyists are necessarily good writers. This rings true to the extent that even if contributors can be persuaded to write about their projects, they often require extensive journalistic support.

While Dougherty presents the magazine as having a hands-off approach to the figuration of a specific pioneer community, the extent to which their so-called community journalism is in fact an exercise in curation is very clear. Maker Media *selects* the projects and authors that they deem most compatible with their point of view while the *presentation* of those projects seeks to promote the (assumed) values of the pioneer community to not only attract an audience but to encourage readers to become active makers as well. Through these curational practices, each contribution to the magazine, even those that do not explicitly deal with the Maker Movement, is concerned with a discourse on identity by implicitly discussing Dougherty's 'mindset […] of making'.

Maker Media's self-perception as curator combined their curational activities has extended to the nuts and bolts of franchising *Make: Magazine*. Of note is that the emergence of this franchising process was already an act of co-construction, that is, it was not Maker Media's idea alone to adopt the franchise model, but it came about as a consequence of their interactions with the German Heise Group.

Active in the field of tech journalism since 1977, the Heise Group launched a publication in 2012 whose name was comparable to *Make: Magazine*. The name *c't Hardware Hacks* derives from its sister publication and Heise's flagship title, a computer magazine simply called *c't* (for "computer technology"). *C't hardware hacks* (later truncated to *c't hacks*) was a successful special issue published four times a year that included articles from the monthly *c't* that dealt with hacking and data security more broadly.

As a publishing house active in the field of technology journalism, Heise Group's management had *Make: Magazine* in its sights since its launch in 2005.[ix] They were already considering the feasibility of 'translating the magazine in license', but as Daniel Bachfeld, the founding editor-in-chief of today's German *Make: Magazine* says, there were:

> simply issues of making it German enough, […] certain things were incompatible, on the one hand resulting from cultural differences: if they [...] discuss anything about a quadrocopter aircraft on the west coast I'm not

interested as a German in Germany—and the other thing was that certain crafting-related topics simply do not work in Germany (Interview Daniel Bachfeld, 11/2016).

Bachfeld's last comment stems from the simple fact that there are different standards of compliance in place for electronic components in Germany. This kind of disparity let to the licensing project being abandoned. However, driven by the desire to realise their own craft fair, members of the Heise Group attended a Maker Faire in New York, after which they organised a similar event in Germany. The first German Maker Faire organised under license took place in Hanover in 2014 (see Section 5). This led to plans for the rebranding of *c't hacks*:

> At some point [we said]: okay, now we have the Maker Faire. [...] But we called [our magazine] *c't hacks* or *hardware hacks*, that somehow does not match. Then we asked the Americans, we would like to license the name and rename ourselves in Germany, what do we need to do to make that happen? And then, we went into business with them, so we're going to produce the magazine and organise the faire consistent with the look and feel of the American *Make: Magazine*, and the Maker Faires (Interview Daniel Bachfeld, 11/2016).

As a result, the license agreement for the magazine came bundled with one for the Maker Faire, demonstrating how intertwined the event and the periodical were at the time.

How then was Maker Media's approach to curating translated to German-speaking countries through their franchise model? At the core of the contract is the stipulation that the design and the *Make:* brand are incorporated into the German edition and that the German publisher has the right to use articles from the American edition and vice versa. Likewise, the online appearance of the two magazines are coordinated and refer to each other. As well as a constant online exchange regarding operational issues, the franchiser and franchisee holds an annual joint meeting to coordinate and plan future strategies and publications. In a German context, then, Maker Media GmbH was founded in 2014 as part of this license agreement as a subsidiary of Heise Group and is responsible for the German-language *Make:* and Maker Faires (Interview Daniel Rohlfing, 10/2016).[x]

The German-language *Make:* team's *self-perception as a curator* was ultimately akin to Maker Media's. By adapting their understanding of what a "maker" is, as a publisher they were able to curate the pioneer community's identity discourse and widen its network at the time. Editor-in-chief, Daniel Bachfeld puts it well when he says:

> In the meantime [a] movement emerged, that now stands for the term maker, which also works interdisciplinary. I think that's the thing compared to the past, to the Hobbythek[xi] days, etcetera. [...] today it is more interdisciplinary: People can handle a laser cutter, 3D printer, a milling machine, and they network. Of course, the open source [movement] had an immense influence on the Maker Movement: "we exchange our projects" it is what characterises it today (Interview Daniel Bachfeld, 11/2016).

Bachfeld's statement is doubly important. Even though, it demonstrates how the Heise Group's understanding of what a "maker" is was similar to Maker Media's, it still conveys a sense that the German team distanced themselves somewhat from the founders' original vision. Although the term "maker" is considered an apt one, overall, and in the absence of another suitable idea, it is regarded much more as a "trendy" conceptualisation of something that was in other forms already there.

There are other differences we can see between the two teams' *curational practices*. With the German version of *Make:* there also exists processes of *selection* and *presentation*. Typically, *Make:* editors take advantage of their presence at the Maker Faires to gather story ideas from their readers. Makers, however, are not necessarily trained journalists, so instead of contributing directly to the magazine, they are often used as a source of ideas for articles that are then written up by professional writers. There are, however, external contributors to the German version of *Make: Magazine* and some of them even contribute on a regular basis. In addition, what seems to distinguish the German version of *Make:* from its sister publication is that they publish a wide range of tutorials aimed at the non-beginner. Here, *Make:* journalists are assumed to be operating in contradiction to

Dougherty's vision of "community journalism" as a curational practice. Daniel Bachfeld puts this down to localised attitudes towards journalism. He believes that German readers prioritise in-depth information more highly than their English-speaking counterparts, he explains:

> German readers tick a little differently when it comes to what they expect from an article. While the original *Make:* is about "build this now and then it works", the German edition decided to include a lot of information about how thing work, […] which is what holds this project together at its the core. (Interview Daniel Bachfeld, 11/2016).

Differences like these became an issue for the transnational and transcultural processes of co-constructing a definitive identity for the movement as the Germans' heightened emphasis on background information began to appeal to readers of the English-language edition of the magazine. Subsequently, the English magazine had to adapt and began incorporating articles from the German edition.

> Because it [the maker scene] is so heterogenous you can never expect to be able to address the entire audience adequately, which is why we reverted to addressing the technically well-versed and interested […] to some extent I think we are already at the point where we are the suppliers of technical know-how, so to speak, and how they apply it afterwards is up to the readers themselves. (Interview Peter König, 05/2018)

My analysis so far has revealed that the original iterations of *Make:* was a communicative offering that sought to curate an identity discourse and act as a catalyst for the burgeoning Maker Movement that came in their wake. Through Maker Media's franchise model—in itself an act of co-construction—their identity as a curator and its corresponding practices were passed on to German-speaking countries. However, these practices were performed by the German organisational elite in different ways and, through a process of dynamic co-construction, the founders of Maker Media in the US adopted the German way of doing things.

5. Franchising Maker Faires: Curating an Experience

As mentioned above, Maker Media's franchise model extends to the Maker Faires. The aim of the faires is to curate an experience for the Maker community in the form of a public event, whether they be large in scale or smaller "Mini Faires". Regardless of size, these events are important to the Maker community for two reasons: first, they allow a locally dispersed pioneer community to meet; second, they generate a degree of visibility that allows the community to be appreciated by a wider audience.

This double character is reflected in the choice made to name the events "faires" and not "conferences", for example, which is a term more often reserved for the business-to-business realm, as seen in the 2018 MakerCon in Heidelberg Germany in April of 2018 which was particularly aimed towards the tech industry.[xii] The term "faire" not only connotes an exhibition of goods or a marketplace, it suggests the atmosphere of a "fête" or "carnival", that is, an event where extraordinary experiences can be had. When Dale Dougherty, Louise Glasgow, and Sherry Huss came up with the concept for the first Maker Faire (held in 2006 in San Mateo, Bay Area), deciding to call the events "faires" was a conscious decision. The idea was to hark back to traditional country faires, which 'were a mix of exhibits, lectures, and marketplace' (Dougherty & Conrad, 2016: 33) and create a "hybrid" science, crafts, and arts event.

The concept of the Maker Faire was developed in early 2005, 'not too long after the magazine was established' according to Dougherty (Interview Dale Dougherty, 02/2017). The initial motivation for organising the events was 'to talk to these people, to meet them, […] just to have a conversation with Makers about what they made' (Interview Dale Dougherty, 02/2017). From this initial impulse the concept for a prominent event was developed through local meetings curated by Maker Media. As far as Dougherty is concerned, the 'Maker Faire is the most interesting thing they have developed' and was maintained by a 'commercial ecosystem' that they had to set up independently, as there were no 'gambling funds' or 'cultural funds' (Interview Dale Dougherty, 02/2017) available. Because there were no genuine financial foundations for the endeavour, the Maker Faire was

organised from its inception in close cooperation with private enterprise. Dougherty describes the Maker Faire's objectives as follows:

> We didn't want to be a trade show, we didn't want to [be] like [a] vendor booth, we wanted makers that were there to talk to you about their project. And we felt, like, you have to make that personal connection, you know, Makers who came one year came the next year and […] So, there was kind of a way, like, we didn't mind sales happening but that was a background rather than a foreground thing […]. (Interview Dale Dougherty, 02/2017)

The first Maker Faire was a great success inspiring the Maker Media team to realise the faire in new locations at home and abroad. Since resources were lacking, the licensing model came up early on in their discussions on how to make this plan a reality. The central idea of their licensing model was to provide an 'interesting framework where someone applies for it, we try to vet them, and we trust them to do a good job' (Interview Dale Dougherty, 02/2017). Licensing of the Maker Faires went well, especially in contrast to their efforts to franchise *Make:* and the Maker Faire began its global spread much more rapidly. In 2016, Maker Media licensed and supported 191 Maker Faires in thirty-eight countries, in both large and small communities (for 2018 see Figure 1).

Fig. 1. Maker Faires in 2018

https://makerfaire.com/map [accessed: 16.11.2018]

To all intents and purposes, Maker Media licenses the Maker Faire brand, its basic structural elements, and provides support through technical documents and annual meetings. A close network was built around this licensing model in the years following 2006. Prominent members of this network are: Eric Pan (funder of Seeed Studio and organiser of the Maker Faire in Shenzhen), Massimo Banzi (co-founder of the Arduino Project in Italy, and organiser of the Maker Faire in Rome), and the team at the Heise Group who organise the Maker Faires in German-speaking countries. This global network is coordinated by Sabrina Merlo, Managing Director of Maker Faire at Maker Media and Dougherty himself regularly attends larger faires as a keynote speaker and visitor to support the global networking of the movement and the brand.

The Heise Group's initial foray into the Maker franchise was a competition they held in *c't* magazine called *Mach flott den Schrott* ("repair the scrap"). Readers were asked to think about what they could do with their discarded hardware and what followed was a steady flow of remarkable submissions including a laser plotter made from discarded DVD drives, a smart home thermostat made from an old mobile phone, and a toilet paper printer. The *c't* editorial team were so excited about the entries they received, they decided to exhibit them at Cebit, one of

Germany's largest technology and innovation conferences in Hanover. Seeing the amount of interest in DIY, tinkering, and hacking generated by their exhibit, The Heise Group team decided to launch *c't hacks*.

Following the excitement of the Cebit exhibit and general enthusiasm for *c't hacks*, Heise Group's managing director, Alfons Schräder thought it might be a good idea to try and organise a Maker Faire in Germany. In 2014, the first German one-day Maker Faire was held in Hanover. The organisers forecast for 1,000 visitors, however, 4,000 came and based on this enthusiasm the Heise Group licensed the Maker Faire for a second, two-day event in 2015 that attracted 9,000 visitors.

The success of the first two faires saw Heise Group and Maker Media sign a long-term franchise agreement. Heise Group was to pay Maker Media a fee to use the Maker Faire logo and all other corporate branding for promotion across all platforms. The basic structure of the event—which is part of the franchised model— combined elements of 'show-and-tell' (the presentation of projects by Makers themselves), traditional exhibition stands (by professionals and amateurs) and artistic performances (typically as main acts to attract a wider audience). German events were advertised on the US website, operating in the co-constructive realm once again as localised experiences were brought together with Maker Media's curational self-understanding. Maker Media, however, remained the dominant partner in this exchange. As Daniel Rohlfing says:

> Up to a certain point, contacts [are] controlled by the Americans. First, they have set up an online platform that we can use to exchange views, where items of interest and news are sent on a regular basis, and when someone has a question [he or she can] send it to everyone else, wherever they are in the world [...]. That's one possibility. [...] [In addition to this,] the Americans [...] also offer producer workshops during [the] San Francisco and New York [Maker Faires], [...] for exchange, networking, and for development. (Interview Daniel Rohlfing, 10/2016)

Beyond the general model designed into the licensing agreement, Heise Group were able to refine Maker Media's approach to curating the Maker Faire. According to our German interviewees, the point of the faires is to act as an anchor for the Maker Movement in German-speaking countries. Essential to this process is the interplay between the Maker Faires and the more low-key Mini-maker Faires. The Maker Faires proper are keynote events for a wide audience held in Berlin and Hanover and organised solely by the Heise Group. Mini-maker Faires are much smaller events, typically organised by a local FabLab, maker space, hacker space or educational institution. Here, the Heise Group provides the brand and a level of know-how but the events are organised by local groups. Together, both events serve to curate the experience of the Maker Movement's imagined community. The core curational team comprises Daniel Rohlfing acting as senior product manager and Philipp Stefan who works as community manager.

Today, the large Maker Faires in Berlin and Hanover are organised one year in advance and last three days, including one weekday (in 2016, 100 teachers and 1,500 school pupils attended on the Friday). The faires include a number of high-profile attractions, typically artists with large interactive contraptions and performances centred around "self-made" artefacts - attracting over 21.000 attendees at the 2018 Hanover faire alone.

These attractions are the main generator of media coverage, either online, on social media, or by the press and radio and television broadcasters. The main *practices of curating* here are *selecting* and *arranging* presenters and exhibitors: The first step in the organisation process is a 'call for makers', an open call on the basis of which each (group of) maker(s) can apply to attend. Sponsors are contacted that must have a connection to the Maker Movement, either in the way that they sell tools, technologies or services used by the community, or in the way that they include maker practices into their organisation (for example Hackathons). Besides individuals and smaller groups, local initiatives and educational institutions are invited to attend for the show-and-tell sessions in particular.

Groups are invited to organise a *Mini-maker Faire* on the German Maker Faire homepage and at the main Maker Faires. In principal, any group can apply at Heise, but in some cases local Mini Maker Faires are also stimulated

by the Heise Group or other sponsors like Thalia or Conrad. The organisation process begins with an open conversation between the local organiser and the management team at Heise Group, whose main objective at this point is to determine to what extent applicants are aligned with the Maker Movement, their financial background (do they have enough resources and are they prepared for risk?), and the suitability of the proposed location. If Heise's queries are satisfied, a sub-license agreement is made with the local organiser and the team at Heise Group support the event by providing guidance, feedback, assistance with finding sponsors and by promoting the event on the website and in *Make: Magazine*. When the event takes place, Heise Group sets up a booth to advertise the German edition of *Make: Magazine*. At times, the Heise team makes a concerted effort to discover local organisers for Mini-maker Faires in regions where events have not been held previously, this kind of effort saw Heise coordinate the Sachsen Maker Faire in eastern Germany, which stimulated a local network in the region and yearly events ever since.

For both the Maker Faires and the Mini-maker Faires, the organisers' main aim is to curate them as community events taking care to ensure that sponsors do not dominate the space

> The most important thing with a Maker Faire is that, no matter the scale [...] it's always a community event. [...] We have a rule of thumb that at least seventy-five, eighty percent of attendees should be makers, whether they sell on a small scale, or just show a project there, something they have developed in their garage, their basement, it does not matter. [...] And then twenty, twenty-five percent or something like that are ultimately sponsors, so commercial companies. (Interview Daniel Rohlfing, 10/2016)

How are such curatorial practices perceived by the Maker Faires' attendees and participants? Essentially, our field research at the Maker Faires in Berlin and Hanover in 2016 and 2018 revealed that, while all the exhibitors, professional and amateur alike[xiii], as well as the visitors we interviewed, demonstrated an understanding of what a "maker" is, we also found disparate views on the extent to which they relate to the wider maker community.

Asked about their perception of "makers" and the "Maker Movement", a typical response from a *professional exhibitor* came from a representative of the Brick and Knowledge Project, an initiative that encourages young students to interact with electronics. From his point of view, 'makers try [...] to not just use products, but to make changes, to make oneself'. The exhibiting distributor of XYZ Printing defines 'being a maker' as somebody who likes 'to tinker with something until it works'. A representative of the university-developed senseBOX (a DIY sensor data kit) said that makers 'just try things that have never been done before, and just make some crazy ideas [work]'. Essentially, 'being a maker' is to create something new. However, the professional exhibitors clearly differ in the extent to which they relate to the maker community from two extreme ends of the spectrum. At one end you have exhibitors who are former makers and have subsequently professionalized their craft. An interviewee from PiTop (a build-it-yourself laptop powered by the Raspberry Pi) locates his company at the center of the Maker Movement, he told us that, 'the founders of the company are all makers themselves'. The other end of the spectrum is inhabited by individuals like a designer we interviewed from Future Heritage, an arts project that 3D prints craft objects. He said that he was 'very critical of the Maker Movement because a lot of it is jumping on the bandwagon, so to speak'. He went on: 'only ten percent [...] really add value; [...] as a designer, I [...] demand something different'. Between these two extremes, most of the professional exhibitors relate themselves to the Maker Movement, but do not necessarily position themselves at its centre. Nevertheless, as one participant—an originator of the German scene, a well-known *Mach flott den Schrott* ("repair the scrap") award winner and FabScanPi inventor—puts it: "The Maker Faire is simply a great place to meet the people you only ever have contact with online, live and on site." Typical of the statements we documented was what one interviewee told us, 'I see myself as a maker, unfortunately I have too little time in the day to tinker' (distributor from XYZ Printing).

We can reach a somewhat different conclusion if we take a closer look at the amateur exhibitors. When it comes to defining what makes a maker, with the amateurs we interviewed there was an emphasis on creativity, trying out new things, and practices of manufacturing, while even greater importance was placed on acts of sharing. One student, who was at the faire to present his chocolate 3D printing project, told us that a Maker is someone

who 'looks out for a project and then builds as much as possible for this project themselves [...] [and] then somehow shares his creations'. Furthermore, most amateur exhibitors relate to the Maker Movement much more than the professional exhibitors we spoke to. In part, the amateurs see themselves at the core of the community such as a student from the project laboratory of a vocational school who told us that 'through [their] hacker space, Portion' he definitely considered their project '[as] part of the Maker Movement'. Others appeared more distant but even they were attracted to the maker identity. A student of microelectronics and amateur exhibitor of SmArt Lights (a system for ambient lightening), for example, problematizes, 'we spent months in our cellar, tinkering [...] the whole time. Now we have something to show for it. Does that mean we are makers now? We do not know. We do not have much exchange, we do not know much about this ideology'. Despite his pessimistic tone, by attending the Maker Faire, he began to develop an attraction to his peers who were also in attendance. As another regular visitor to the Maker Faire, Berlin and an amateur exhibitor put it: 'So in the first place I'm here because the Maker Faire is the only place where everyone can meet. I don't really have that much interest in the whole maker branding because all that is presented here—at the gates of this truck there a nice toy and its funny, but it's not at the core of what these open spaces are about and I wouldn't be here now if it weren't for this link that leads towards other people being here that share my goals.'

Visitors to the faire and their level of affinity to the movement ranged from a "close relatedness" at one end of the spectrum to merely being an "interested tourist" at the other.^xiv There are, for example, members of FabLabs, hacker spaces, and other tinkerers who defined themselves as makers before the name "maker" and the "Maker Faire" existed. For some visitors, *Make: Magazine* has been quite important in building their relationship to the maker community. As a male member of a FabLab told us, it is 'the big maker's newspaper from America' that he closely links to the organisation of the faire. Another typical statement came from a male visitor who works in the field of microelectronic hardware development. He said about himself: 'I'm interested in drones, multicopters; that's how I heard, via *Make:*, [about the] maker scene and the Maker Movement'. And he continues, drawing a line between the movement in a narrower sense and the practices of making more broadly: '[making] has always existed [...] that's just play and developing something with creativity'. Another typical statement came from a father and his twelve-year-old son, both interested in robotic programming, on their third visit to a Maker Faire, and—in the case of the father—long-term readers of Heise's computer magazine *c't*. They told us that they were interested in makers and the Maker Faire because 'you can do many things by yourself" (son) and because "people introduce their own projects' (father).

In summary, we can say that the franchise model of the Maker Faire has close parallels with that of *Make: Magazine*. Here, too, Maker Media—with corporate artwork, a specific corporate design, guidelines for organisation, and regular communication meetings—provide a curational framework for the Maker Faires. This framework is licensed and can then be acted upon differently by licensees who are responsible for organising locally. As far as how they put their license to use is concerned, licensees are allocated a fair amount of freedom which even extends to the possibility of sub-licensing, as was the case with the Heise Group. It was only in this way that it was possible to co-construct a globalised network of Maker Faires in just a few years.

6. Conclusions: Franchising and the curation of a pioneer community
Based on my analysis, we can now understand with more clarity the essential characteristics of Maker Media's franchising model and how it became a vital element in the co-construction of this pioneer community through its organisational elite. In essence, this model is characterised by two closely interlinked activities, namely, the act of franchising, the curation of a discourse and the act of franchising the curation of an experience.

Franchising the curation of a discourse arose around the establishment of *Make: Magazine*. In terms of the magazine, not only was "maker" coined as a term—as opposed to hackers, hobbyists, and tinkerers—the magazine and its online platforms have also managed to curate a discourse on what constitutes practice for a maker. The peculiarity of *Make: Magazine* is that it is—despite the national differences in the franchising process—a community magazine with the goal of reporting from the pioneer community for the pioneer community.

When *franchising the curation of an experience*, the aim is to use the Maker Faires to create local events in which the Maker Movement can be experienced directly. My analyses have demonstrated that the faire is an exercise in attraction. This affects both amateur exhibitors and visitors: local hacker spaces, FabLabs, educational institutions, and projects that did not originally see themselves as part of the Maker Movement are exhibiting and building relationships with this imagined community when they contribute to a faire. Visitors who might approach the Maker Movement differently can still experience related practices and projects directly and establish a relationship with the pioneer community.

Generally speaking, both approaches connect while maintaining the process of co-constructing the Maker Movement's pioneer community. Three benefits of the franchise model can be identified. First, there is the stabilisation of the pioneer community through (cautious) professionalisation and commercialisation. Maker Media's franchising efforts succeed in providing, over a long period of time, the resources necessary for the stabilisation of the pioneer community through an ongoing identity discourse (*Make:*) and the possibility of an extraordinary local experience (Maker Faires). Second, there is the narration of an imagined community. Through franchising, the curation of that narrative is afforded through the websites, the magazine, and the faires. Thirdly, the framing of the pioneer community's practices as "stylish", "innovative" and "countercultural" is made possible. With reference to the Maker Movement, we see here the co-construction of a new understanding of manufacturing, being simultaneously related to modern technology on the one hand and individualised manual labour on the other. It is perhaps in this new understanding where the unique appeal of this pioneer community truly resides.

Through their practices of curated co-construction, pioneer communities are driving forces in the process of 'deep mediatization' (Couldry & Hepp 2017; Hepp & Hasebrink, 2017): they contribute to the introduction of practices into everyday life that are—initially relatively experimental—comprehensively entangled with the latest digital media technologies. In the case of the Maker Movement, these are manufacturing practices that are regarded as innovative precisely because of their close relationship to digital media and their association with the vision of a "new economy" of the local or the creativity of its craftspeople. The decisive factor in their support of deep mediatization is not so much the extent to which such practices are actually stable or how experimental handicrafts lead to sustainable business ideas, what is genuinely crucial is how the activities of pioneer communities such as the Maker Movement increase people's general openness to cutting edge digital technologies. *Through this*, they are—curated by their organisational elites—driving forces in the processes of deep mediatization.

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[i] The RepRap is a 3D printer released under a GNU General Public License that is used for rapid prototyping and manufacturing.

[ii] The MakerBot is a cheap and easy-to-use 3D printer from MakerBot Industries LLC, New York City.

[iii] The Raspberry Pi is a single-board computer developed by the British Raspberry Pi Foundation. It is very simple compared to standard personal computers and was developed to promote the teaching of basic computer science, particularly to young people.

[iv] This interpretation is obvious as Nathan Parker introduced his initiative on Maker Faires to attract new members to the movement.

[v] For more information on our wider project, see https://www.kofi.uni-bremen.de [7.5.2018].

[vi] For an overview of this research see Combs, Michael, & Castrogiovanni, 2004; Elango & Fried, 1997; Nijmeijer, Fabbricotti, & Huijsman, 2014 and Verbieren et al., 2008.

[vii] See https://makermedia.com [accessed 22.04.2018].

[viii] See https://makermedia.com [accessed 22.04.2018].

[ix] Daniel Bachfeld mentions '2004' as a launch date in his interview but Make: magazine was in fact first released in 2005 as outlined above.

[x] Maker Media GmbH is a subsidiary of Heise Media, part of the Heise Group. Managing directors are Ansgar Heise and Alfons Schräder; see https://www.heise-gruppe.de/artikel/Maker-Media-2290712.html [accessed: 23.04.2018].

[xi] The Hobbythek was a monthly television program produced by WDR (Westdeutscher Rundfunk - West German Broadcasting) from 1974 to 2004 that covered a range of scientific topics targeted at the layperson, whose central concept was committed to a DIY ethos.

[xii] In 2019 a new conference format will be introduced to the German Maker Faires, which expands the educational day for schools with a conference aimed at a specialist audience.

[xiii] The term 'amateur' is problematic because it relates to what Andrew Keen (2007) has called 'the cult of the amateur': the idea that through the internet innovations developed by outsiders would change our society for the better. Sociologically speaking, many 'amateur exhibitors' at the faires are professionals in the sense that they have training in computer science, electrical engineering or other related fields. Thus, the term 'amateur exhibitor' does not mean 'inexperienced layman' but refers to the status of what they present: in the case of 'professional exhibitors' these are the commercially distributed products that are relevant to the Maker Movement; in the case of 'amateur exhibitors' these are new ideas and projects from within the Maker Movement itself.

[xiv] We use the term "tourist" here in the way as it is used to describe the carrier members of popular cultures and scenes, which describes the "novice", then "tourists", later, "buffs" and ends with "freaks" (see Winter, 1999).