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# Is It Digital Entrepreneurship? Designing a New Sport through Audience Ethnography

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Abstract: In designing a brand-new sport, do basic tenets of digital entrepreneurship such as 'solve a user problem' apply? How is it possible to understand who the potential audience might be for a product and experience that does not yet exist in a Culture Industry such as sports? The paper examines the beginnings of an Australian startup with an early-stage product in the sports and entertainment industry and its use of digital ethnography to investigate key audience segments. The process of audience development occurred alongside the prototyping and testing of a high-tech product that is central to the sport. As the product underwent iterations of development and release, audience interaction with the product was tracked through social media. Discourse analysis of audience engagement with the product on Facebook was conducted to inform a series of user personas that indicated a heavy male bias in the future audience. In exploring the intersection of sports, Cultural Industries and digital entrepreneurship, the paper concludes with observations of how this case challenges each of those notions through the process of 'starting up'.

**Keywords:** digital; ethnography; entrepreneurship; audience development; user personas; user-centered design; discourse analysis



Citation: Leung, L.; Feldman, D. Is It Digital Entrepreneurship? Designing a New Sport through Audience Ethnography. *Sustainability* **2021**, *13*, 11690. https://doi.org/10.3390/su132111690

Academic Editors: Adamantia Pateli and Naoum Mylonas

Received: 17 August 2021 Accepted: 19 October 2021 Published: 22 October 2021

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#### 1. Introduction

The relationship between sports and the Cultural and Creative Industries is explored in this paper through a case study in digital entrepreneurship. It examines how a new sport, based on competitive weapons-based martial arts combat, was designed for entertainment and centred on the development of a high-tech body armour worn by combatants. The entrepreneurial journey encompassed the interdependent creation of both a product (the body armour) and an experience (a sport involving duelling with weapons at full speed and power without causing traumatic injury or death).

The sport, titled Unified Weapons Master (UWM), aimed to honour, preserve, and reignite passion for weapons-based martial arts by leveraging cutting-edge technology. Whereas the Ultimate Fighting Championship (UFC) sport involves bare hand mixed martial arts, UWM proposed the same 'survival of the fittest' style of contest using weapons-based combat. In this sense, it has all the hallmarks of a sport: physical activity involving play, skills development and competition [1] (p. 10) and aggression, power and body contact [2] with rules that regulate behaviour that can be played or watched [3]. However, Rattan [4] (p. 4) contends that a sport must have a following in order for it to be considered a sport.

Indeed, notions of mass appeal and scale seem central to sports being part of the Culture Industries as an important component of popular culture that intersects with politics, media and global power structures [5,6]. However, as a nascent sport, UWM did not yet have an audience, and participation was limited by the availability and early stage development of the high-tech body armour and the lost art of weapons-based martial arts.

Rattan [4] (p. 1) argues that there is increasing demand for innovative sports-based products and services utilising emerging technology that is driving sports entrepreneurship.

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UWM offers an example of this in its quest to find a product-market fit by presenting the prototype armour in a sporting context to consumers and gauging their insights through digital ethnography. In the paper's examination of this, it asks whether a sport can be designed through ethnographic methods and if such methods can be appropriately deployed in entrepreneurial activities for the Creative and Cultural Industries.

#### 2. Review of Literature

Traditionally a method of anthropology, ethnography has been concerned with the detailed observation and description of a local system or 'speech community'. It has been used to examine the social relations and rituals of language and its practice by a group of people and how such communication processes construct identity. Soukup [7] (p. 74) explains ethnography as 'defining and/or discovering coherent boundaries of cultural identity and community have been central issues in the ethnographic project'. As such, it has been used widely in the discipline of Cultural Studies in the study of Cultural Industries, as well as subcultural practices and communities [8].

Ethnography has increasingly found application in design research practices as a method for gathering deep insights into customer or user needs and behaviours. Cooper and Dreher [9] argue that 'ethnography provides perhaps the greatest insights into users' unmet and unarticulated needs, applications, and problems'. Therefore, ethnography is also suitable in the study of entrepreneurial ventures [10].

Whether the application of this method to the digital sphere shares this valuable status is a matter of debate. Smith [11] asserts that collecting such data online provides 'arguably more candid and extensive response quality', and that users are more likely to be honest in an online context. However, Brace [12] contends that this data is still subject to users presenting idealized versions of themselves.

However, as Soukup [7] maintains, ethnographers are now wrestling with how mediated digital environments can be studied when they are virtual, saturated with content and competing with other online and offline distractions. According to Coleman [13], it is now difficult to study any form of groups, practices or communication without considering digital media. However, contemporary ethnography must acknowledge the fleeting and ephemeral nature of what it is studying, which Clark and Moss [14] likened to making meaning from pieces of a mosaic puzzle. In other words, the user comments that inform our research must be read as temporary positions at different points in time, as those users also have other identities as part of other worlds and communities. The ethnographer's function is to weave together and interpret those 'ethnographic fragments' [15].

Examples of digital ethnographic studies that parallel our research include investigative work on Facebook groups to examine minority groups, subcultures and niche social movements [16]. Murthy's [17] study of a transnational Muslim subculture demonstrated that Facebook became the platform for musicians to interact with their fans in the context of rising global Islamophobia. It also provided access to groups that would otherwise have been difficult to reach through offline ethnographic methods.

Specifically, ethnographic studies of online content date back to the 1990s, with research on Internet Relay Chat [18], listservs, newsgroups and chat rooms [19]. Sharp and Earl [20] examined over 5000 online reviews of sex workers on a website in the early 2000s. Jones and Schieffelin [21] explored verbal informality in thousands of YouTube comments, Internet memes and chats. Postill and Pink [22] examined social activism in Spain through the sharing of digital content across microblogging, social network and other platforms. The study of social networking sites using discourse analysis has largely concentrated on Facebook [23] and Twitter [24], such as in investigations of political discussion and discourse [25]. Scarcer are discursive studies of Facebook in entrepreneurship [26]. This article contributes to the fragmented research in this area.

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#### 3. Data Collection and Analysis

This digital ethnographic study of social media followers of UWM sought to address the following research questions, which, in turn, might inform the design of the sport experience and product:

- 1. What are the unique characteristics of the potential audience for UWM?
- 2. What roles might different segments of this audience play in the sport?
- 3. Specifically, which facets of the product or the sport motivate and/or engage the audience?

Digital ethnography in this study encompassed a discourse analysis of user comments on the UWM Facebook page, examining:

- perspectives on the quality and value of the product;
- themes of interest, such as historical commentary, martial arts and combat applications, references to popular culture and sport logistics;
- variables such as frequency of user engagement, their tone and level of expertise.

Using Facebook as a semi-public digital archive system [22], which recorded the respondents' comments, all 809 comments posted since the social media pages were set up by the company were reviewed. Here is where discourse analysis is suitable, as it is concerned with messages, texts and discourse [27] (pp. 4–5). Messages are the smallest unit of analysis and can be examined for directionality, source, goal, context and purpose. Clusters of messages exchanged between participants can be interpreted as texts, while discourse relates to the social relations and processes in which texts are embedded [28] (p. 358). Hine [29] (p. 39) suggests that online researchers ought to understand the relationship between discourse and texts by conceptualizing the Internet to be, firstly, 'a discursively performed culture' and secondly, 'a cultural artefact, the technology text'. For the purposes of this study, the analysis of discourse encompasses messages and texts: the online comments are considered as messages, texts and discourses together, not as separate units of analysis.

An additional discourse analysis of 770 comments over 360 posts was undertaken to examine users' frequency of engagement with UWM, the tone of their engagement and their level of expertise. Frequency of engagement was measured in terms of the net number of comments for each individual: the more comments, the higher the individual's engagement. Tone, a qualitative measure, was rated on a seven-point Likert scale, with one equating to a derogatory tone and seven indicating a highly positive tone. To assess tone, we looked at the content of fan's posts in relation to how s/he:

- gave feedback about the company or product, both positive and/or negative;
- interacted with other community members;
- used language respectfully or inappropriately.

Expertise was a qualitative measure rated on a seven-point Likert scale, with one equal to no expertise demonstrated and seven equal to a high level of demonstrated expertise. This measure was determined by posts that conveyed at least one of the following:

- experience-based weapons combat insights;
- knowledge of combat dynamics and strategy;
- knowledge of historical and cultural relevance of weapons arts and combat;
- knowledge of weapons characteristics such as blade quality, craftsmanship, weight dynamics, etc;
- unique insights around sports dynamics (scoring, experience, measurement, etc).

A social network and content analysis was then conducted on 28 selected UWM community members to gauge their influence and reach by collecting data on:

- number of friends;
- number of groups to which they belonged;
- largest number of followers within a group;
- smallest number of followers within a group;

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- mean number of group followers for all groups;
- relevance of groups to UWM;
- mean number of 'likes' on personal posts;
- mean number of comments on personal posts.

Influence and reach may also be termed 'personal extensibility', the ability of a person to overcome distance and reduce the time required to connect with others in distant places [30] (p. 65).

The combined discourse analyses of the wider user community and the focused content and network analyses of the social media presence of a core set of users were used to extrapolate four key customer requirements. As these were representative of the diversity of the UWM fan base, the customer requirements were then applied in the profiling and clustering of users into hypothetical personas. Following Brown [31], we focused on finding the key characteristics that differentiated groups of participants from others.

Four hypothetical user personas were developed to represent the breadth of the UWM audience. Personas are fictitious archetypes based on the behaviours and motivations observed in a group of real people. They have become a critical part of the product design process [32] (p. 23). Built from the research findings, a single persona is a representation of a cluster of actual users or spectators who exhibit similar behaviour patterns, feelings and preferences [33]. As Dam and Siang [34] assert, good personas describe key characteristics and behaviours exhibited by a group of participants. Adlin and Pruitt [35] outlined that 'personas [help by putting] a face on the user—a memorable, engaging, and actionable image that serves as a design target'.

Cooper [36] pioneered the use of personas in the digital and online design community. However, while they are widely used today, personas are mainly utilized in conjunction with scenarios to narrate how users would interact with interfaces and systems. The four personas developed for this study were grounded in real data but are also aspirational, articulating the preferences and ideas of the UWM fan community for engaging with the yet-to-be created sport product and experience.

# 4. Results

In addressing the research question of how ethnography can play a role in sport entrepreneurship, specifically, how a sport culture can be designed around an experience and product, the results from digital ethnographic data collection showed that the characteristics of users' comments fell into four main categories:

- 1. historical commentary;
- 2. martial arts and combat application;
- 3. references to popular culture;
- 4. discussions of sport logistics.

The four main themes of interest all demonstrated 'relativity' [37] in that, in the absence of an available product in the market and an existing sport, users had to draw comparisons to other products and sports. Hence, users made reference to history, current combat sports and niche weapons combat groups, in addition to popular culture. These constituted three of the four areas of interest in user discourse. The fourth, sport logistics, consisted of speculative discussion about how the sport could be played. These topic areas provided some indication of what interested users about the product and sport and the kinds of discourse being generated.

Engagement measures yielded some surprising results, with only four people commenting more than 10 times over the entire life of UWM's Facebook page. The user with the most posts had a total of 33, beating the next most frequent poster by 8 posts. There was a precipitous drop between these two and the third most engaged fan, who only posted 14 times.

The overall tone of the comments was positive, although there were a few exceptional cases of combative and derogatory communication. Elite expertise (a 7-point rating on a Likert scale) was rare to see, especially when looking at people who were highly engaged, but there were a sufficient number of well-informed responses with ratings in the 5–6-point range.

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The majority of fans (67 per cent) only posted one comment in response to UWM posts. After that, the numbers fell precipitously, with 17 per cent posting twice, 7 per cent posting three times, 4 per cent posting four times and 2 per cent or below posting any other amount.

Of the 28 users selected for the social network and content analysis, 14 were identified as having high levels of engagement, positive tone, as well as moderate to high-level expertise. These users could be deemed highly engaged early adopters of the UWM vision at the core of the fan base. Not to be alienated, they have the ability to disseminate information and influence others in their social media networks. Lipsman et al. [38] (p. 45) maintain that 'friends of fans represent an audience at least an order of magnitude larger than the fan base' with ratios as high as 81 friends who can be reached for every fan. However, the social network analysis revealed this current core fan base mostly consisted of people in small, niche communities with limited reach even among their own social networks. Furthermore, their small numbers showed that they were not the mass market audience needed to make the sport commercially viable.

#### 4.1. Key Customer Requirements

Nonetheless, based on the broader dataset of user comments, four key customer requirements could be extrapolated.

# 4.1.1. Unprecedented Variety

UWM provides the first opportunity to bring weapons styles and types head-to-head and see which emerge victorious. Fans repeatedly brought up their desire to see different combinations of scenarios, weapons and things they have dreamt about or seen in movies. While the entertainment value of seeing long-held fantasy characters and weapons is undeniably a point of excitement, underlying this desire is a fervent curiosity to truly know how these match ups would play out in an actual encounter. It adds a personal investment for individuals to support their favorite team or player:

"I want to see for example someone who knows Ninjitsu with a bouken vs a chinese monk or a Roman gladiator or spartan vs a Samurai; all which incompasses if anyone looses their weapons, they will have to go full on fist fighting against the other opponent who possesses a weapon or not. Or a match where one person fights many people at one time and what his/her adjective is to get from one spot to another at a certain time without being killed or defeat as many people as he can before he himself gets killed. Possibilities are endless!"(sic, CH, 2014)

# 4.1.2. Simulated Reality

This relates to ensuring the UWM combat is as true to life as possible and an accurate measure of skill with weapons, unlike video games. As a real-life competitive sport, fans want to know that the action happening in the ring translates to the world around them. Realism is one of the important reasons the UFC became so popular. While fans understand the need for rules and safety equipment, they are drawn by the knowledge that the skills being exhibited are authentic. This is all the more pronounced for a sport such as UWM where it is derived from real-life combat and not a set of rules designed for a game:

"Simply detracting hit-points seems much more "gamey" to me than trying to render the damage that would realistically be done. That would really make Unified Weapons Master something special."(DB 2014)

#### 4.1.3. Elite Expertise

What differentiates UWM in the mind of fans is the aspiration to create a forum for elite combatants to test their skills against one another. While a small amount of entertainment appeal comes from seeing laypeople go at each other, the validity of a sport comes from the elite status of the competitors. People want aspire to and be awestruck by the skills on display. Respect for the sport comes from the difficulty of success:

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"If they made this into a combat sport, I'd watch the hell out of it as long as the guys in the armor knew what they were doing and weren't just a couple of thugs swinging sticks around." (SH 2014)

## 4.1.4. Informative Entertainment

There are two aspects that combine to make watching the sport engaging. First, while the safety and protection of fighters remains a major value for the viability of the sport, fans consistently express a desire to ensure the sport contains a strong visceral impact and a sense of danger. However, the capacity for data analytics and visualisation is a major point of differentiation for UWM and fans are responding very strongly. As a completely novel sport there's a significant need to educate and inform the audience about the intricacies of the action. Moreover, fans have made it clear that the lack of danger created by the armour means there is an acute need for information which communicates the emotions that the armour hides:

"After 20 odd years of martial arts and a reasonable amount of time in a ring—I wonder if people want to watch a "bloodless" sport? Crowds tend to like seeing the blood and pain and knowing a fight is real." (MH 2014)

"The true devastation of the combat will be somewhat lost in translation due to the armor's dampening effects. It's undeniable that part of the reason contact sports are so popular is the audience's ability to feel the brutality—the "oh shit did you just see that!?!" moments of a huge right cross or a big tackle. So while displaying data will work for the hardcore audience, making Unified Weapons Master a commercial success will require some translation of that data into real-world action for a wider audience to connect with." (DF 2014)

# 4.2. Personas

The following user personas helped to identify user groups that were mostly likely to be effective brand champions for UWM, outlining the four key customer requirements for the sport: unprecedented variety, simulated reality, elite expertise and informative entertainment. The digital ethnography of public user comments enabled a clearer understanding of audience segments with which to inform UWM's future design of the sport experience and its core product features.

# 4.2.1. The Sports Fan Customer Requirements: Elite Expertise and Informative Entertainment

"Aaron loves all things sports. He follows all his hometown teams religiously. Every season he watches nearly every game of all the sports playing at the time. Sport is his preferred connection point with other people and he can talk for hours with his friends or strangers about statistics, strategy, and player performance. Aaron is drawn to the skill, intensity, and competition of sports. More than anything, he thrives on the community it provides and lives for the glory of the win. Competition drives him, he spends his free time reading game analysis and finding obscure information to build his knowledge base for the next argument or fantasy matchup.

For Aaron, UWM provides an untilled competitive landscape, the social aspect of being a sports fan (being in competition with others and part of a community) and athleticism. Since it is a sport, it has his interest. Since he is a novice, he will want to know the statistics, the rules, strategy, and the big names. He wants to be able to talk the talk to anybody who will listen or argue. Elite expertise is a requirement for Aaron, and the informative entertainment factor drives home his interest in a data-rich quality sports entertainment experience."

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# 4.2.2. Mr. Fantasy Customer Requirement: Unprecedented Variety

"Sunnie identifies as a geek and regards the title as a compliment. Most of his days are spent in some combination of playing video games, scrolling through technology or gaming blogs, watching anime, and discussing all of these pastimes with his friends.

His interest is initially caught by the armour, not the sport. He is most excited by the entertainment value of UWM, the aesthetics and capabilities or the armour and the possibility of having a suit (though not for the purpose of competing in the sport). He wants to wear it, to own it, to have it as another toy. The technology is of interest too as he is excited by novelty and innovation. Because it looks like Iron Man or Robocop, it appeals to his sense of nostalgia and sets off his awesomeness alarms. He is mainly engaged by the unprecedented variety, the potential to see things like Roman Gladiator or Spartan versus Highlander battles will draw them into events, but his loyalty to the sport will wax and wane."

### 4.2.3. The Competitor Customer Requirements: Simulated Reality and Elite Expertise

"Brendan is a natural athlete. He excels at any physical activity he attempts, regardless of whether it's rugby, table tennis, or skateboarding. He has never had aspirations to become a professional athlete after playing three seasons of sports in university, but once he turned to mixed martial arts (MMA), he found a new field in which he could compete. He has had a half dozen amateur MMA fights and enjoys a winning record. Most of his free time is spent either in the gym or doing some form of physical activity.

Brendan likes to compete. UWM represents a new avenue to test his mettle and increase his skills. In most fighting and training scenarios Brendan has to pull his punches, and he is very excited by the opportunity to go all out and get concrete feedback on his ability to do damage. While he is entertained by watching others compete, part of his entertainment is strategizing about what he would do in the same situation. Simulated reality and elite expertise are the two key factors which catch Brendan's interest in UWM; seeing the best of the best go to battle using practical combat techniques drives Brendan's excitement and motivates him to train in new styles of combat in order to get a piece of the action."

# 4.2.4. The Armchair Historian Customer Requirements: Informative Entertainment and Simulated Reality

"Any opportunity to show his superior knowledge draws Gordon out of his antisocial routine. Despite having studied engineering, Gordon's true passion has always been in history; specifically, the western era before gunpowder made warfare boring. He is extremely well versed in ancient battle tactics, weapon-making techniques and events. Accuracy is of the utmost importance for Gordon, he spends a large amount of his time pointing out flaws in the things people create, especially on the Internet. He is a harsh critic and prides himself on not pulling any punches when it comes to pointing out people's flaws. Some have even called him a troll, but that's just because they're jealous. Never the physical type, Gordon spends most of his time buried in books or playing board game.

Gordon is an unlikely sports fan, but UWM presents a unique opportunity to show off his expertise and become widely appreciated. His interest lies not specifically in the combat or entertainment, but in the narrative that accompanies it. Accuracy and authenticity are of the utmost importance to him, and while the unprecedented variety appeals to his guilty pleasure center, the informative entertainment and simulated reality are where most of his attention will be focused."

#### 5. Discussion

Though these personas are presented as separate, there is also likely overlap between them, but this would need to be iteratively tested through ongoing engagement with real users through, for example, interviews [39]. According to Humphreys [40], the use of social

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media profiles to inform user personas is appropriate given that their similarities enable information to be mined cheaply, without having to conduct costly interviews. However, with up to 15% of total Twitter accounts being fake [41], this is a limitation of using social media data as the basis of personas.

There are similar disadvantages to using Facebook as a research tool. Ethnography reveals a deeper understanding of people via their interaction and embeddedness within a community. Facebook serves as a communal record of social interactions and personal identifiers which provide a wealth of data for research analysis. As a semi-public platform where people determine the impression they present to the world, social media is fraught with presentation bias. However, as the study was constrained by a business decision not to allow direct contact between the researchers and the audience, it was necessary to assume user comments and social media profiles to be authentic and representative of the feelings and motivations of the people concerned. In addition, this approach avoided researcher influence because there was no direct interaction.

Looking at the personas together, it was clear that they represented a strong male gender bias in the UWM fan base. Given the long history of gender inequality in sports [42], this finding challenges the entrepreneurial objectives of UWM and the global sports industry as a site of constant innovation as well as social inclusion [4] (p. vii) [43] (p. 1). Yet, UWM does articulate the three main views of entrepreneurship [44] in that it is innovation-based, focused on business creation and sees an opportunity that can be commercialised.

Firstly, the UWM concept is innovation-based in its creative experimentation around a product (high-tech armour) and how a sport experience can be designed around it. Secondly, it has both a product and a sport around which to build parallel businesses. Thirdly, it sees an opportunity to reignite interest in weapons-based martial arts through a contemporary lens and monetise this. For Adorno and Bernstein [45] (p. 98), it is the latter fusion and transformation of the old into a new form for profitable consumption by the masses that is characteristic of the Culture Industries.

Indeed, this notion of combining old and new and adapting it to a different context also defines innovation [46]. In one sense, UWM could be deemed a form of incremental innovation in its modern adaptation of weapons-based martial arts without fundamental change to the practice of those arts. However, UWM also has elements of radical innovation in its degree of novelty, the exploration of new markets and customers and the application of new knowledge to the development of the high-tech armour to enable various weapons-based martial arts to be fought in a safe, risk-free environment. The combination of incremental and radical innovation, along with the old and new, represent sites of struggle between divergent approaches.

The entrepreneurial objective of UWM was to understand—through digital ethnograp hy—where the end-user is positioned in the triangulated relationship between business (which is market-oriented), arts and culture (which are creatively driven) and technology (which adds value to both these sectors). These intersecting knowledge-intensive sectors that are at the centre of creative economies [43] (p. 1) is where arts, business and technology converge [47] and where the Creative and Cultural Industries generate both products and services. As Jenny et al. [1] contend, this inherent inter-disciplinarity also characterises sports. However, sports are often omitted in discussions and case studies of the Creative Industries [48–50].

# 6. Conclusions

Insofar that UWM is a case study in entrepreneurship and innovation in the Cultural Industries in terms of its disciplinary fusion, is it an example of a sport? Note that it is based on historic weapons-based martial arts, many of which are no longer widely practised, around which a new 'sport' was being designed. This means, at the time of writing, it had no scale, traction or definitive audience. Without a following, it is difficult to classify UWM as a sport, despite that it may be an example of sport entrepreneurship. Subsequently, if

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UWM is not a sport, can it really be considered part of the Cultural Industries when sports are understood as an intrinsic part of popular culture?

Through a digital ethnography of early social media engagement with UWM, it was possible to sketch out potential audience segments that indicated the challenges that would be faced in building a following. Firstly, the male bias of the personas suggested that UWM did not have broad appeal. Secondly, the majority of the personas were likely spectators of UWM, not participants: That is, the weapons-based martial arts were novel as forms of spectacle rather than sporting disciplines that audiences wanted to be involved in. Thirdly, that the suit is designed for safety and protection may make UWM less attractive to audiences, who are emotionally drawn in by human vulnerability and the physical risk of injury, similar to boxing or UFC. The armoured suits dehumanise the combatants by covering their faces and make it difficult to engage and empathise with either of the participants.

From an entrepreneurial perspective, it is difficult to gauge the 'user problem' that UWM was attempting to solve. If one of the key principles of start-up culture is alleviating customer pain, how does this apply to designing a new form of sport and entertainment? Perhaps it is because customer problems are not so clear in the Creative and Cultural Industries, that UWM has turned its attention away from creating a sport experience, to finding a market for its product (the high-tech armour) in the defence sector. The role of digital ethnography in this entrepreneurial venture was to provide early insights into potential customer segments, showing the need to pivot due to the difficulty of building the mass audience following needed to grow a sport culture and industry.

**Author Contributions:** conceptualisation, D.F. and L.L.; methodology, D.F.; formal analysis, D.F. and L.L.; investigation, D.F.; data curation, D.F.; writing—original draft preparation, D.F. and L.L.; writing—review and editing, L.L.; supervision, L.L. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** the data presented in this study are available on request from the corresponding author. The data are not publicly available due to the removal of the Facebook page.

Conflicts of Interest: The authors declare no conflict of interest.

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