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Sport prosumer networks: exploring prosumption value in Twitter conversations during COVID-19

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ABSTRACT

Purpose: Value within prosumption systems such as Twitter is underexplored. We adopt an economic sociology perspective to measure prosumption value, using the #ProjectRestart campaign as football looked to resume following COVID-19.

Design: We use social network analysis to analyse 21,000 tweets involving 10,810 Twitter users using the #ProjectRestart hashtag. Specifically, we apply network theory measures, community clustering, betweenness, domain prestige and proximity prestige to explore how prosumption value can be measured.

Findings: Our empirical findings demonstrate how value can be perceived within prosumption systems. Specifically, it shows how developing cohesive prosumer networks is vital in exploiting prosumer capital, creating value in the virtual space, which is imperative in negotiating through times of uncertainty, like COVID-19.

Practical Implications: The practical implications encourage the industry to think of value in the virtual space differently, embedding this into future management strategies.

Research Contribution: This research provides a theoretical contribution of prosumer value, blending prosumption and economic sociology theories. Empirically, it demonstrates how actors in the football world used prosumer networks to create value during the COVID-19 pandemic.

Introduction

For the first time since World War II, the COVID-19 pandemic removed football's core product, the game itself (Parnell, Bond, et al., 2020; Parnell, Widdop, et al., 2020). Consequently, football's lucrative yet unsustainable financial model created unexperienced strain (Bond et al., 2021; Mohr et al., 2020). Football fans were also presented with an unfamiliar position, not knowing if and when football would return.

That said, even without the core product, sports fans can gain similar utility from engaging in virtual spaces (Mastromartino et al., 2020; Naraine, 2019). These virtual spaces – often created through social media platforms – afford fans the ability to communicate with their favourite sports teams and other fans (Mastromartino et al., 2020). This paper analyses the virtual space created by the #ProjectRestart campaign, which the English Premier League

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used as it looked to resume football operations following the COVID-19 pandemic (Stone, 2020).

Football's physical and virtual worlds are created through processes of prosumption (Andrews & Ritzer, 2018; Parnell, Bond, et al., 2020), whereby *production* and con*sumption* occur simultaneously (Andrews & Ritzer, 2018; Ritzer & Jurgenson, 2010). While prosumption has garnered empirical attention in other fields such as marketing (Cova & Cova, 2012), communications (Yamamoto et al., 2020) and politics (Fuchs, 2014), sports research directly applying prosumption is limited (Andrews & Ritzer, 2018). This oversight is surprising considering the vast amount of work exploring sport and social media (Armstrong et al., 2016; Benigni et al., 2014; Butterworth, 2014; Dart, 2014; Hambrick, 2012; Hutchins & Mikosza, 2010; Kassing & Sanderson, 2010; Leonard, 2009; Naraine & Parent, 2016; Sanderson & Gramlich, 2016; Yan et al., 2018, 2019).

Often sport management research referred to prosumption with similar, more popular concepts, such as value co-creation, akin to marketing areas (Alhashem et al., 2021). For example, Stadder and Naraine (2020) refer to "prosumers" when studying gambling brands' online communities. While prosumption is an antecedent of value co-creation (Chandler & Chen, 2015; Prahalad & Ramaswamy, 2004), they are not interchangeable concepts (Alhashem et al., 2021). Prosumers do not necessarily rely on second parties to (co-)create value, nor are they always concerned with value creation, and prosumption is not necessarily mutually beneficial (Eckhardt et al., 2019; Lang et al., 2020; Perera et al., 2020). Thus, prosumption is not necessarily positive, like value co-creation. It has negative elements, mainly prosumption capital, whereby individuals or firms profit from others' prosumer activity – for free. Ritzer and Jurgenson (2010) noted that prosumers are exploited by capitalism in two ways: consumption and then prosumption. The irony is that prosumers often love what they do, dedicating long hours to it for no pay. While we agree on some level with Stadder and Naraine

(2020), who suggest prosumers want to create products and services, this does not apply to all prosumers. We argue that most prosumers are unaware of their value creation role; thus, they are unaware they are being exploited. Therefore, our paper addresses this gap in sport management literature by explicitly applying prosumption as a theoretical foundation to study sport-related Twitter conversations.

Prosumption, especially within virtual spaces, is a relational and networked activity (Bond et al., 2021). For example, social media platforms are built on networked prosumption processes where a user *produces* content (often by *consuming* another users' content), which others *consume* simultaneously. Their *consumption* simultaneously *produces* content for others to further *consume*. This cycle continues throughout users' direct and indirect connections through their online social network. While the user-generated content aspect is essential, it is the network principles that fuel the system. Social network analysis is often used to capture and analyse these virtual spaces, an increasingly popular methodology in the sport management field (Bond et al., 2020; Hambrick, 2012; Naraine & Parent, 2016; Yan et al., 2018, 2019). The majority of this work focuses on communication, marketing or brand theories, using social network analysis as a methodological tool (Naraine et al., 2019). We also adopt social network analysis, but we adopt it as a perspective, with specific theories and concepts, not just a methodology (Wellman, 1988), furthering our contribution to the sport management literature.

The theories and concepts associated with social network analysis are fundamental within economic sociology (Granovetter, 2017; Knoke, 2012). We expressly adopt embeddedness theory (Granovetter, 1985), which places social networks at the very heart of economic behaviour, emphasising how structure and position within it influence economic activity (such as prosumption; Granovetter, 2005). We also adopt Burt (1992, 2004) ideas of brokerage,

which assigns influence and power to those advantageous occupying positions within a network. Therefore, our position that dollars or Euros should not measure value within prosumer networks (although we appreciate this will be inevitable). Instead, value within prosumer markets should be measured by understanding the virtual space structure and exploring important positions within this space. We utilise Himelboim et al. (2017) Twitter typologies to analyse the overall structure. We also apply network centrality measures to demonstrate how value derived from a structural position can be measured. Therefore, our contribution to the sport management literature is to (re)conceptualise value based on position rather than reach and engagement metrics within prosumed markets.

This paper's remainder begins by reviewing the related literature on prosumption and social media before unpacking social network theories. We then discuss our social network methodological approach before discussing the implications for managers and scholars of sport.

Literature review

Prosumption

Toffler (1980, p. 265) anticipated "the rise of the prosumer", but prosumption and the prosumer only gained attention after the 2007 global recession (Ritzer & Jurgenson, 2010). Prosumption is a process theory that identifies interlinked production and consumption processes, identifying mutual interdependence that cannot be separated (Andrews & Ritzer, 2018). Fundamentally, prosumption has always formed part of societies fabric, as Toffler (1980) points out through the different

"waves" of periodisation from hunter-gather societies to post-industrialised modern societies. During this time, prosumption has evolved analogous to societies advancements, along an axis that Ritzer (2015a, 2015b) theorises as the "prosumption continuum" (Figure 1). This scale encompasses two poles of traditional production and consumption while also acknowledging the necessity level of prosumption termed "prosumption-as-production" and "prosumption-as-consumption". The centre position reflects "balanced prosumption", depicting those acts which are "more or less evenly balanced" (Ritzer, 2015a, p. 2). The "new digital world" has blurred the distinction between the physical and virtual worlds, meaning daily lives revolve around balanced prosumption.

Web 2.0

It is well known that the new digital world has developed through technological advancements, specifically Web 2.0 (Castells, 2010, 2015; Ritzer et al., 2012). Precisely what constitutes Web 2.0 is ambiguous (Orenga-Roglá & Chalmeta, 2016), often due to Web 2.0 and social media being used interchangeably (Constantinides & Fountain, 2007). Regardless, it is clear that Web 2.0 applications are fundamentally prosumer applications, which are user-controlled networks facilitating the flow of ideas and knowledge (Constantinides & Fountain, 2007; Goodchild, 2007). While multiple platforms facilitate this process (see Orenga-Roglá & Chalmeta, 2016; Zajc, 2015 for categorisations), they all share the user-generated production function as users become "active contributors" (Lai & To, 2015). Thus, a user becomes both a producer and consumer. It is

|---|---|

Prosumption-as-Production (p-a-p)   *Balanced Prosumption*   *Prosumption-as-Consumption (p-a-c)*
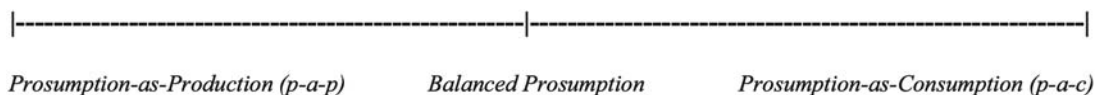
Figure 1. Prosumption Continuum (Ritzer, 2015a, p. 2).

impossible to detract one from the other within these platforms, meaning these systems operate as "balanced prosumption" systems (Figure 1; Ritzer, 2015a). Often it is supposed that users co-create value between themselves as each user participates in the market as an equal (Humphreys & Grayson, 2008). As such, businesses have shifted from consumption to production activities since users producing content increases business value (Van Dijck, 2009). However, the shift in business interest means users do not engage in the market as equals; instead, businesses and organisations look to capitalise on prosumption – prosumer capital (Ritzer, 2015b). To that end, our argument is that value co-creation is not appropriate, and in fact, value is better conceptualised as prosumer capital.

Prosumer capital and value

Since prosumption systems distort the lines often drawn between consumer and producer, it blurs the conceptualisations of capitalism, thus value. Capitalism is well explored, traditionally referring to the ownership of production means (Ritzer et al., 2001; Ritzer & Slater, 2001) or manipulating consumer demand through consumer capitalism following consumerism rise post-WWII (Baudrillard, 1998; Galbraith, 1958). However, this shift towards a prosumer society offers another dimension of capitalism: prosumer capitalism (Ritzer, 2015b). Ritzer (2015b) argues how Marx's view is even more true to prosumers, and even more true of digital prosumers, as these user-generated sites rely on "definite quantity of other people's unpaid labor" (Marx, [1867] 2001, p. 534). So while sport management research often adopts the notion of co-created value – we take the view, these user-generated prosumer sites are exploitative, based on individuals' unpaid labour. We suggest that value is not co-created in these virtual spaces, but the value is created from advantageous positions within the virtual space.

Since prosumption (thus prosumers) represents a change in economic organisation and how we understand market actors (Humphreys & Grayson, 2008), the traditional exchange relationship where each party trades one kind of value for another (Bagozzi, 1975) does not hold. For example, in the traditional sense, the product (i.e. sport event) is consumed by the end-user (i.e. spectator). Importantly, however, both the organisation and the end-user have created value in the live event. Even more so since public displays of affective attachment (i.e. emotion, excitement) become objectified through event design (i.e. stadium layout, fan parks) and media diffusion (focused broadcasts). While this improves the overall experience, it also increases the sellable product (see Frew & McGillivray, 2008).

A recent example is using crowd noise during broadcasts of league matches while games are played behind closed doors (Keh, 2020). Therefore, it is easy to see how service-dominant logic arguments of value being co-created by producer and consumer to enhance the value fit well in the physical space. As discussed, we cannot (or it is hard to) differentiate between producer and consumer roles in the virtual space. Therefore, value within the virtual space, especially business value (or commercial value), is difficult to ascertain.

An alternative way to think of value is what the value-creation activity produces: "exchange-value" or "use-value" (Marx, [1867] 2001). The exchange-value is its relative worth "when placed in a value or exchange relation with another commodity of a different kind" (Marx, [1867] 2001, p. 88). Commodities and experiences have value beyond their market valuation (Cockayne, 2021), inherent in the intrinsic utility to owners or purchasers, which can be "use-value" or "value-in-context". Since exchange-value is realised only at the point of sale, and use-value is realised through consumption, an order is implied – exchange-

value occurs before use-value (Cockayne, 2021). Within the presumed virtual world, producers often need to consume first, inverting the traditional ordering of value conception. That is, user-generated content is often produced through a process of consumption (sharing a video, news article, consuming live football), which is produced simultaneously for others to consume through liking, commenting, resharing, consuming and producing content for others to consume and produce, and so on. Therefore, use-value can come before exchange-value, and both can occur simultaneously; exchange-value is only realised at the point use-value is realised. We term this prosumption value.

Toward "prosumer value"

Determining business value within the virtual world is complex. Indeed, in the commercial sense, value can be (and is often) determined by economic capital based on counts of engagement, reach and other frequency metrics. However, this conceptualisation of value does not account for inherent relational elements within the virtual prosumption system. While others have accounted for online social networks when analysing value in online markets (Freedman & Jin, 2017; Stephen & Toubia, 2010), they still conceptualise value as a financial construct. Instead of financial value, we conceptualise prosumption value as structured, where value is created from an actual position in the network.

To rationalise prosumption value, we adopt Granovetter (1985, 2017) economic, sociological approach, suggesting that economic action is embedded in ongoing social relations systems. This economic sociological approach is deeply rooted in network theory (*cf.* Dobbin, 2004; Swedberg, 2009). Therefore, prosumption value (simultaneous exchange- and use-value) is embedded within the virtual space's

interactions. Firstly, trust is a valuable commodity that results from highly dense and cohesive network structures (Granovetter, 1985). Therefore, density and cohesion are valuable network elements since the more trust within a network (at both the global and local level), develops shared ideas, behaviours and norms. Arguably this reflects an *embedded value*.

In addition to *embedded value*, prosumption value is also gained from occupying the advantageous position. Here, we take Burt (1992, 2004) theory of structural holes and brokerage, which identifies those positions that connect multiple cohesive nested networks, otherwise unconnected within the overall structure. Therefore, these positions broker the information flow throughout the network. Therefore, it becomes crucial for the virtual space to exist (or the virtual space becomes fragmented without them), meaning they have increased prosumer value.

Twitter networks in sport management

Social network analysis is increasingly becoming part of a methodological toolkit for scholars of sport management. Indeed, since Quatman and Chelladurai (2008a, 2008b), social network analysis has been applied to various areas (see Hambrick, 2019, for a full review), but social media research has been the most popular outlet for the application of the method. Perhaps due to data availability, this work often focuses on Twitter networks (Hambrick, 2012; Naraine, 2019; Naraine & Parent, 2016; Yan et al., 2018, 2019). Indeed, analysing two sports organisations' Twitter networks, Naraine and Parent (2016) identified the prominent and critical stakeholders in their networks. Similarly, Yan et al. (2018) discovered that large sporting enterprises and sports stars were critical stakeholders to the formation and stability of UEFA's[1] Champions League Final Twitter network. Cleland et al. (2018) found similar

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[1]The Union of European Football Associations (UEFA) is the supranational federation for football governance across Europe.

results analysing the collective action within Liverpool Football Club fans while protesting ticket prices. To the best of our knowledge and supported by the claim of Cleland et al. (2018), there remains little sport management research explicitly applying economic sociology and network theory principles.

We explicitly apply economic sociology (thus network theory) the #ProjectRestart Twitter virtual space to explore prosumption value by answering the following research questions:

(1) What is the overall structure in the #ProjectRestart prosumption network?
(2) How can network theory be used to measure prosumption value?
(3) Who is creating prosumption value within the #ProjectRestart prosumption network?

Methodology

Data

To measure prosumption value when football had no product to offer, we scrapped data from the social media platform Twitter, following a similar approach to Yan et al. (2019). Through tweets, mentions, likes, and replies within the Twitter platform, users come together through tweets, generating the online structure. What fuses these tweets under one structure is the use of the "#" symbol. Therefore, the #ProjectRestart conversation on the Twitter platform provided our nominalist boundary for analysis (Borgatti & Halgin, 2011). To that end, we analysed 21,000 tweets (microblogs) involving 10,810 individuals. Since Twitter networks are temporally constrained, providing a snapshot of time, we collected data periodically every four days[2] between May and June 2020 using NodeXL software (Smith et al., 2010). Data were

aggregated to reflect the entire period and analysed using multiple software packages; "sna" (Butts, 2020) and "igraph" (Csardi & Nepusz, 2006) packages within R software (R Core Team, 2020), and visualised using Gephi (Bastian et al., 2009) software.

Social network analysis

A network (or graph) describes a set of elements, termed vertices (or nodes) connected through interactions and relationships, termed edges. Following Wasserman and Faust (2009), a graph is noted as $G(V,E)$ where V is a set of vertices and E a set of edges connecting vertices, $L \in V \times V$ (Borgatti et al., 2018). An edge connecting vertices x and y in graph G would be written $(a,b) \varepsilon E(G)$. In the context of using online social network site Twitter, vertices are users (@user1, @user2, @user3, @user … n) and edges are the relational tie connecting a user, which can be; "Followed" – @user1 follows @User2, "RepliesTo" – @User1 creates a message starting with @User2 and finally "Mentions" where @User1 creates a message containing but not starting with @User2. A "Tweet" is a message created by @User1 that does not mention another user, but this can be "ReTweeted" or "Liked" by @User2 or @User(n). Therefore, edges follow a direction, so $L_{ij} \in \{0,1\}$, with $L_{ij} = 1$ showing a connection (like, retweet or reply) and $L_{ij} = 0$ where a connection does not exist. This can be represented in an asymmetric adjacency matrix, $\mathbf{A} = n \times n$ (n representing the number of nodes in the network). Hence, L_{ij} in the adjacency matrix $\mathbf{A}$ is not equal to L_{ji}.

Overall embedded value

Since prosumption value is embedded within the virtual world's structure, we first identify the communities in the #ProjectRestart

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[2]Since NodeXL gathers tweets within a 6–9 day window or an upper limit of 18,000 tweets. We chose to collect every four days for two reasons, (1) the first web scrape demonstrated that tweets were collected over seven days; therefore, daily data collection was unnecessary; (2) four days allowed new data to be gathered without considerable and unnecessary duplication; reducing data processing.

network. These communities reflect the areas of increased trust within the network, where value is created from other's prosumption. To analyse communities within the #ProjectRestart prosumer network, we follow Naraine et al. (2019) and Himelboim et al. (2017) and apply the Clauset-Newman-Moore algorithm (Clauset et al., 2004). This algorithm partitions the overall network by identifying communities of dense internal connections and fewer external connections between other communities. The cohesive and dense communities reflect the embedded value. We inspect the typology of Twitter networks, according to Himelboim et al. (2017), who identified six Twitter topic-network structures.

The hub-and-spoke structure, which is also the most common (Park & Thelwall, 2008), provides little embedded value. Here the structure is highly centralised forming star-shaped structures as users prosume a small (maybe single) number of nodes (Himelboim et al., 2017). Often, these influential nodes are considered experts within the network (Welser et al., 2007). Here information flow is concentrated to a few nodes, creating a fragile communication network. Depending on the flow of information, hub-and-spoke can be further split into a broadcast (higher in-degree than out-degree) and support (higher out-degree than in-degree). Broadcast hub-and-spoke often represent well-known pundits, media outlets or organisations, and support hub-and-spoke often represents organisations engaging in conversations with customers (Himelboim et al., 2017).

However, the hub-and-spoke structure is not dense and cohesive, therefore offers little embeddedness value. Divided and unified structures both have high density instead of centralisation, as most nodes are strongly interconnected (Himelboim et al., 2017). Highly dense structures tend to lead to increased information sharing since there is an increased trust within the network; therefore, more embedded value (Coleman, 1990; Granovetter, 1985). The

difference between divided and unified is how clustered the network is. Divided has high modularity meaning dense clusters have limited connections between other clusters. Opposingly, unified networks have low modularity, showing all nodes being interconnected (Himelboim et al., 2017). Both of these offer strong relationships, thus embedded value.

Finally, low-density structures demonstrate sparse networks, such as fragmented or clustered (Himelboim et al., 2017). In such networks, information flow is limited with little connection between nodes in the network. Fragmented structures include large proportions of isolates, often revolving around brands or popular topics, and lack any central information sources. Contrastingly, clustered structures have a lower proportion of isolates, meaning small groups of interconnected nodes. These groups often represent communities of "multiple centers of activity, each with its own audience, influencers, and sources of information." (Himelboim et al., 2017, p. 11). Since the density is low, this structure would offer low embedded value.

Measuring prosumption value

We applied three prestige network measures to measure prosumption value at the individual level: betweenness, domain prestige, and proximity prestige. Betweenness centrality is an indicator of prestige, referring to how often node i is involved in the geodesic distance of two unconnected nodes, j and k. It is therefore essential to the indirect link between j and k. Thus, a node's betweenness centrality demonstrates how much they broker prosumption (i.e. information/content flow) throughout the network. Thus, betweenness is used here as a proxy for Burt's (1992) structural hole and brokerage concepts. Therefore, those with high betweenness scores have higher prosumption value, as they control network architecture. Without them, the network would not exist – or become much more fragmented.

We propose betweenness as a positional value measure, and it does not account for prosumer activity. We propose two further position measures which account for prosumer activity. Domain prestige is the proportion of all other nodes interacting directly or indirectly with a node (Lin, 1976; Wasserman & Faust, 2009). Domain prestige score is the number of node *i*'s direct and indirect connections divided by n-1 (the number of all other nodes in the network). Within a prosumer network, domain prestige measures overall prosumer value created by a user being directly prosumed by other users or indirectly prosumed by prosumers' connections – thus, value is determined by direct and indirect simultaneous exchange- and use-value.

Proximity prestige was calculated for a node to account for value created through direct prosumption (Lin, 1976; Wasserman & Faust, 2009; Zhao et al., 2015). Proximity prestige is computed by dividing a node's domain prestige score by the average geodesic distance of a node's connections. Consequently, a higher domain prestige score and lower distance provide a higher proximity prestige score. In essence, proximity prestige measures prosumer value directly extracted by a user's connections. Therefore, absolute differences between the two measures indicate those users who gain value through indirect prosumption.

Results

Embedded prosumption value

The overall #ProjectRestart Twitter network is visualised in Figure 2. A visual inspection shows pockets of interconnected clusters, mainly around @david_ornstein and @theathleticuk, representing a journalist and the media outlet "The Athletic UK", respectively. Interestingly, and somewhat unexpectedly, the other considerable interconnected cluster centres around @mesutozil1088, representing the Turkish national and professional footballer Mesut Özil, who played for Arsenal FC

(subsequently transferred to Fenerbahce SK). Smaller clusters appear around @lfc, and @redissue, representing Liverpool FC, the official and a fanzine account, respectively; @ffscout represents a fantasy football fanzine; @alison_mcgovern a Labour MP for Wirral South (North West, England); and @jpercytelegraph a journalist for "The Telegraph" media outlet. While a layer of peripheral isolates exists (the outer ring unconnected to the inner clusters), the multiple centres of interconnected activity suggest the structure follows a *community cluster* (clustered) structure (Himelboim et al., 2017), meaning overall network density is low. This low, dense overall structure would suggest low embedded value since actors are not dense and cohesive within the market.

However, when we apply the Clauset-Newman-Moore (Clauset et al., 2004) cluster analysis (Figure 3), the structure shows divided clusters of communities, but these communities tend to centre around centralised nodes. Therefore, while the divided structure shows communities are dense with interconnected prosumers, coupled with the traditional hub-and-spoke structure of these smaller communities, only a selected few users create embedded value. Importantly, these few users have higher in-degree than out-degree, evidencing a broadcast hub-and-spoke structure. Since their value is created by others (high in-degree), for free, with little input from them (low out-degree), they have high prosumer capital (Ritzer, 2015a, 2015b). For example, the English Premier League (@premierleague) and Liverpool FC (@lfc) did not directly engage in the conversation, and Mesut Özil (@mesutozil1088) engaged once. Therefore, value can be created with no or little input (Table 1).

Individual prosumer value

Table 2 reports the top-20 influential nodes based on betweenness centrality. Interestingly,
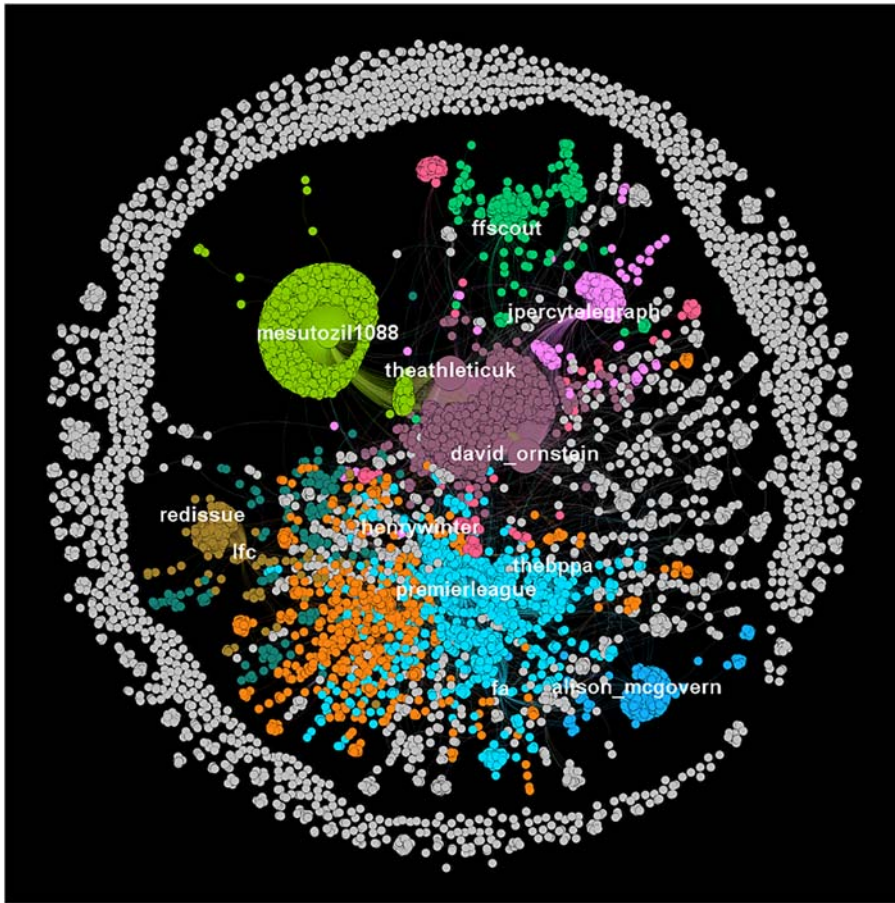
Figure 2. Overall network for #ProjectRestart.

some of these influential nodes have a *support* role rather than a *broadcast* role within the network since their out-degree is larger than their in-degree (Himelboim et al., 2017). Demonstrating how positional value can be manufactured through strategic engagement in the conversation, reconceptualising the view of value. For example, @theofficialfwa (official Twitter feed of the Football Writers' Association) have no in-degree; typically, it would suggest low use- and exchange-value; however, they have a high positional value brokering the conversation. Two fanzines (supporter led groups) have also managed to create position value (@bplbest and @official_marcks) through unilaterally engaging in the prosumption process.

Table 3 reports the most influential nodes based on *domain* and *proximity prestige* scores. When accounting for both indirect and direct connections through domain prestige, journalists – who have long been considered the football industry's cultural gatekeepers – dominate. Indeed, journalists from The Athletic UK, such as @zonal_marking, @amylawrence71, @dermotmcorrigan, @mjshrimper, @liam_twomey, @gunnerblog, are prominent and become more influential. As such, they create value from both direct and indirect prosumption; other users (re)produce their content – which is a perfect balance of prosumption (Ritzer, 2015a). Other users such as @leedixon2 and @fmuamba6 represent former professional football players Lee Dixon and Fabrice Muamba; all these users
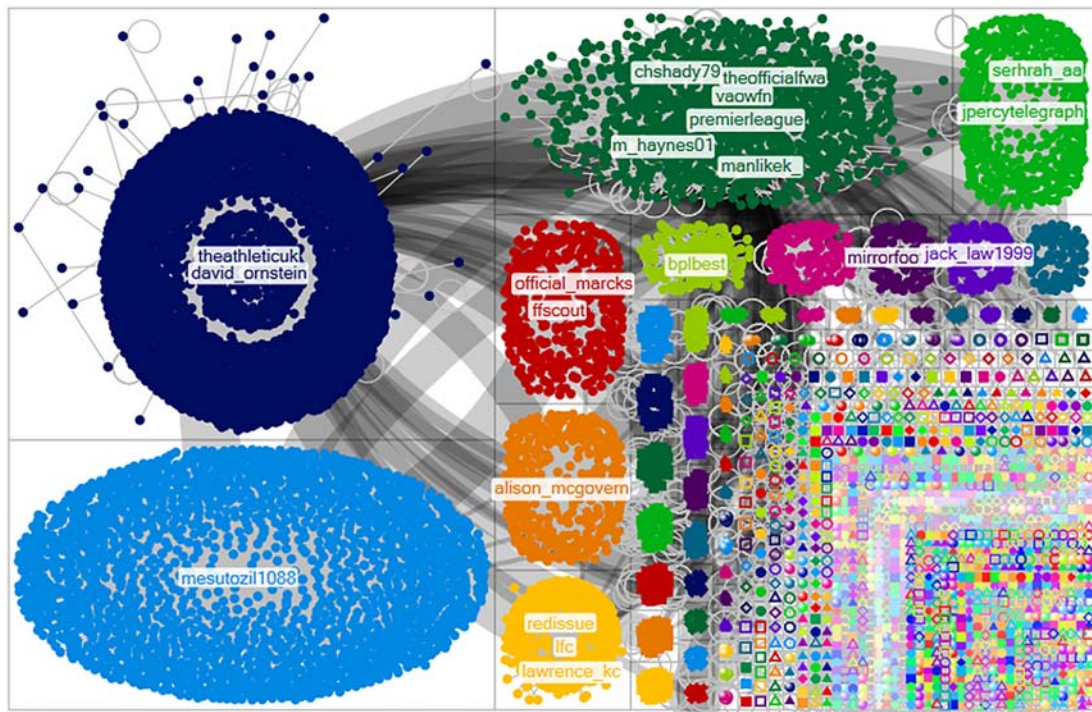
Figure 3. Community structure of #ProjectRestart.

create value through indirect prosumption – unconnected users prosume their content.

This indirect value becomes apparent when only accounting for direct prosumption through proximity prestige, and these users become less influential (still influential nonetheless). As expected, those gaining value

Table 1. Most prominent nodes in community clusters.

Community	Influential node	In-degree	Out-degree
Mesut Özil	@mesutozil1088	2022	1
The Athletic UK	@david_ornstein	3786	20
	@theathleticuk	3795	11
The Premier League	@premierleague	856	0
Alison McGovern MP	@alison_mcgovern	305	9
The Telegraph	j@percytelegraph	385	1
Liverpool FC	@lfc	264	0
	@redissue	227	1
Fantasy Football Fanzine	@ffscout	352	68
Daily Mirror	@mirrorfootball	43	1
Jack Law	@jack_law1999	58	5

from direct interactions are users who developed the largest trusted communities: The Athletic (@david_ornstein and @theathleticuk) and Mesut Özil (@mesutozil1088). Interestingly, Fabrice Muamba's (@fmuamba6) remains considerably influential, suggesting he extracts similar prosumption value from direct and indirect interactions. However, the most significant change is the increased influence of Liverpool FC's community, both their official account, @lfc, and fanzine, @redissue, and other media organisations such as BBC Sport (@bbcsport) and BBC Radio 5 Live (@5livesport). Suggesting these users, within this specific network, create value from direct prosumption of content, but lack the cohesive community of users to promote indirect prosumption.

Discussion

The overall structure for the #ProjectRestart reflects elements of two typologies presented

Table 2. Top-20 influential nodes based on betweenness centrality.

Community	Influential node	Betweenness centrality	In-degree	Out-degree	Type
Mesut Özil	@mesutozil1088	14834515.90	2022	1	Broadcast
The Athletic UK	@david_ornstein	12897039.31	3786	20	Broadcast
	@theathleticuk	12837103.62	3795	11	Broadcast
The Premier League	@premierleague	10236365.48	856	0	Broadcast
Alison McGovern MP	@alison_mcgovern	2641131.85	305	9	Broadcast
The Telegraph	@jpercytelegraph	2638458.39	385	1	Broadcast
Liverpool FC	@lfc	1593920.01	264	0	Broadcast
Fantasy Football Fanzine	@ffscout	1229008.10	352	68	Broadcast
The Premier League	@theofficialfwa	1011924.75	0	16	Support
Daily Mirror	@mirrorfootball	1004226.67	43	1	Broadcast
The Premier League	@vaowfn	990347.66	0	156	Support
Premier League Best Fanzine	@bplbest	977961.89	0	29	Support
Fantasy Football Fanzine	@official_marcks	909062.18	0	18	Support
The Premier League	@m_haynes01	820530.10	0	12	Support
Jack Law	@jack_law1999	743715.55	58	5	Broadcast
Liverpool FC	@redissue	741907.34	227	1	Broadcast
The Premier League	@manlikek_	695537.14	0	9	Support
	@chshady79	623283.77	0	10	Support
Liverpool FC	@lawrence_kc	615748.80	0	13	Support
The Telegraph	@serhrah_aa	615601.72	0	6	Support

Table 3. Top-20 influential nodes based on domain and prestige proximity.

User	Domain prestige	User	Proximity prestige
@zonal_marking	0.326025	@david_ornstein	0.287189
@fmuamba6	0.325932	@theathleticuk	0.285049
@amylawrence71	0.325932	@mesutozil1088	0.186883
@leedixon2	0.325932	@fmuamba6	0.156396
@david_ornstein	0.32584	@dermotmcorrigan	0.156328
@theathleticuk	0.32584	@mjshrimper	0.156328
@dermotmcorrigan	0.32584	@liam_twomey	0.153341
@mjshrimper	0.32584	@zonal_marking	0.153331
@liam_twomey	0.32584	@amylawrence71	0.152269
@gunnerblog	0.32584	@leedixon2	0.152269
@iandstone	0.32584	@gunnerblog	0.152223
@mesutozil1088	0.187436	@iandstone	0.152203
@premierleague	0.084744	@premierleague	0.062702
@fa	0.045333	@jpercytelegraph	0.035491
@jpercytelegraph	0.040152	@alison_mcgovern	0.026141
@bbcsport	0.038949	@lfc	0.024173
@benhainess	0.033028	@fa	0.023163
@jermaineagyako	0.033028	@redissue	0.021001
@luchogarcia14	0.033028	@bbcsport	0.018612
@nickbrightdj	0.033028	@5livesport	0.014898

by Himelboim et al. (2017), divided clusters with a more broadcast hub-and-spoke type clusters structure. Consequently, the overall structure relies on a few central nodes in a very traditional one-to-many communication system. We argue that this structure limits value from a structural perspective, as it lacks density and cohesion (Himelboim et al., 2017), reducing the trust embedded within the network. Instead, value is created from the divided sub-

groups within the network, where these few central nodes have more dense and cohesive prosumers, where embedded value is created. For example, communities were identified around media outlets such as The Athletic UK, The Telegraph and Daily Mirror, sports organisations such as The Premier League and Liverpool FC and well-known individuals such Labour MP Alison McGovern and Mesut Özil. These communities of prosumers

simultaneously place similar use- and exchange-value on the central node's content, empirically supporting dense, cohesive clusters instil norms, beliefs and trust (Granovetter, 1985). However, these central nodes do little value creation themselves. Their low out-degree (direct engagement in the conversation) demonstrates how individuals and organisations can capitalise on prosumption processes to create value, essentially exploiting others' unpaid labour (Ritzer, 2015b).

Indeed, those with higher prosumption value are those with popular platforms, as shown in previous Twitter research (Cleland et al., 2018; Naraine & Parent, 2016). This has important implications for the view that simply increasing engagement increases value. We argue that such an idea misses the structural elements of the virtual world. Therefore, social media strategies should not simply focus on engagement and reach metrics but develop dense, cohesive communities of prosumers who can take on the value creation function; and focus on creating positional value within and through the virtual space.

Whether intentionally or unintentionally, The Athletic UK leverage considerable prosumption capital. Part of this success centres on reporters being active prosumers, consuming and producing each other's content. This strategy is reflected in multiple The Athletic UK users within the top-20 for both domain and proximity prestige. Both these measures capture prosumer value; proximity prestige measures the value created by direct prosumption, whereas domain prestige measures the value created by direct and indirect prosumption.

The influence of journalists may also highlight the changing landscape of media, with journalists and commentators becoming more prominent than the media outlets they represent, which is made much easier through Web 2.0 applications and prosumption processes. Indeed, journalists have always had a symbiotic prosumption relationship with football clubs, consuming football to produce content for football fans to consume further. These cultural gatekeepers operate as social influencers and opinion leaders who are relationally embedded through direct ties and engaging in everyday micro-interactions on Twitter. They are also structurally embedded within their digital communities, instilling trust within the communities they serve. Interestingly, these opinion leaders are more embedded than the prominent organisations part of the official governance and management structures of football, The (English) Football Association (@fa) or the English Premier League (@thepremierleague). They are less embedded than one would expect. This situation has profound implications for the management and governance of football as a whole. While prosumers create content and community structures, they control the messages and narratives, thus influencing the conversation. Thus, controlling outside influences is a central tenant to operating in prosumer network markets, especially football's management in this example.

The positional value within the virtual world is an important consideration to further the conceptualisation of value creation. Here we used betweenness centrality to measure a user's brokerage within the network (Burt, 1992), which identifies those integral to the network's sustainability. The primary users who create value from their position based on betweenness centrality were @david_ornstein, @theathleticuk and @mesutozil1088. Therefore, it is assumed that these users provided the most use- and exchange-value. However, prosumer networks, as highlighted, evidence how "value-in-exchange" – hinged to the traditional "goods dominant logic" (Vargo & Lusch, 2004) – is insufficient for contemporary understandings of market phenomena. Indeed, our findings highlight that the interaction between actors yields "use-value."

Nevertheless, the ability for that value to bifurcate through the network relies on a

shared context. This might be a particular theme, a trend in football, and could be a general human-interest story – i.e. COVID-19 – or a combination. In this sense, value is created and consumed not solely through an exchange nor entirely in use. Instead, it is the configuration and interaction of and between people, technologies and other resources framed around mutually relatable contexts that create the networked interactions which subsequently lead to creating "value-in-context." In this prosumer network, value is broadly an emergent construct created through combinations of exchange, use, and context that positively or negatively affect particular actors prompting some form of reconfiguration of resources and interaction. Hence, a reasonably complex conceptualisation requires management to focus on process rather than output. Therefore, understanding the process of prosumption is fundamental to understanding how value can be extracted from positions within a network – created by something like a Twitter conversation.

Concluding remarks

In the absence of football's core product during COVID-19, we have explored how value can be reconceptualised within the structured virtual world, especially based on prosumer network models like social media. Here, value is based on Ritzer (2015b) prosumer capital arguments. By doing so, we have contributed to the sport management literature, a novel conceptualisation of value, hopefully igniting a vibrant debate and further scholarly work. In doing so, our work complements the ever-expanding social media and sports work and social media consumption literature more generally.

Using the #ProjectRestart Twitter conversation, we have presented the notion of prosumer value, blending Ritzer's (2015a, 2015b) essential work on prosumption and prosumer capital with Granovetter's (1985) seminal economic sociology work on network theory. In doing

so, this paper demonstrates how some organisations and individuals can exploit prosumer networks to create value during a time when the core product was unavailable – halting consumption and further production throughout the football world. Applying an economic sociology frame allowed us to understand how Twitter networks form around trusted users embedded in the network and create positional value. The presented idea of *prosumer value* extends the traditional notions of value and demonstrating how the networked nature of prosumption enables value to be generated. Furthermore, this paper measures value from network position using network measures such as betweenness, domain prestige and proximity prestige. By doing so, we also empirically measure Ritzer (2015a, 2015b) ideas of prosumer capital, adding an empirical value to Ritzer's more theoretical thoughts. Thus, it contributes to fields beyond sports management, like marketing, consumer culture, and consumer behaviour.

Given that the specific value creation process is contextually contingent, there are practical implications for organisations seeking to nurture and harness prosumer value. Firstly, acknowledging prosumer value potential requires a change in mindset at the organisational level, orientated to a more holistic, market-level view of value creation, rather than the traditional consumer-producer dyad. This work helps managers within sport organisations move away from frequency, aggregated metrics, and understand that value is different within the virtual world. Secondly, we offer prosumer value as a way to account for the structural and positional elements not captured in traditional social media metrics. Here we encourage practitioners to create dialogical structures within their virtual market. That is, they need to cultivate prosumer communities, organising engagement reflexively and sensitively to market conditions. We also so how network measures and metrics can assist practitioners monitor and track their positional

value. This approach renders visible the key attributes and resources that SDL scholars argue can be linked and (re)configured in the co-creation of value. The difference here is that value is simultaneously produced and consumed by different combinations of directly and indirectly related actors. Finally, it allows them to identify their principal value-creating prosumers in a geographically borderless virtual world.

Like any work, there are limitations. We only consider one example at one time point, omitting the temporal nature of online conversations. The next step for this work is to look at how value – from a structured position – develops over time. Further work should adopt Granovetter (1985) ideas of temporal embeddedness, which would determine that value has a history, which impacts future value. We also do not attempt quantifying positional value in financial terms, which would be an interesting puzzle to grapple with for any scholar. Frequency measures such as engagement rates and reach are relatively easy to quantify financially but quantifying the value of network position in financial terms requires more thought and work.

Disclosure statement

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