CHAPTER 6

Emergence of eSports Networks

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Summary. The eSports ("electronic sports") phenomenon is relatively new and unexplored in the scientific literature, although it has existed in the practice long enough to evolve into a significant, rapidly expanding chunk of the economy. Its growth, reaching over 40% on a year-to-year basis, along with relatively young and open networks creates a space for remarkably interesting business opportunities. However, from the business model point of view, there is a significant gap in the literature providing practitioners with a view on emerging eSports networks and assisting the managerial process. This chapter contributes to the area with a research of several, emerging ego-networks of organizations. Methodologically, the study tested an approach leveraging the abundance of publicly available data on the organizations' social media profiles which were found to be remarkably expressive and provided insight into the evolution of individual ego-networks. The research resulted in a number of observations: new roles, specific interactions between the actors, as well as specific structural and evolutionary patterns in the network. The findings are believed to find use in the managerial practice and future research of the inter-organizational network development.

Keywords: esports, electronic sports, business model, business network, social media, evolutionary patterns

1. Introduction

The phenomenon of "electronic sports" (also known as eSports) is relatively new and unexplored in the scientific literature, although it has existed in the practice long enough to evolve into a significant, rapidly expanding chunk of the economy. Widely cited *Global eSports Market Report* by Newzoo on the eSports industry's size estimated that the eSports industry grew over 40% on year-to-year basis, generated around $700 million in revenue, and attracted audience of over 385 million people by the end of 2017 (Newzoo, 2017). Two years later, in a new report the company estimated that the eSports industry would generate $1.1 billion in revenue, growing at a still magnificent pace of +26.7% year-to-year

(Newzoo, 2019). The increasing recognizability of the electronic sports is even more evident considering the voices to include them into the Olympics (IOC, 2018) or Asian Games (BBC, 2017) as one of the contested disciplines.

An inter-organizational network or an organizational ecosystem is considered a structure of organizations and relationships between them whereas trust is said to be their foundation (Popp et al., 2014). The networks are argued to underpin contemporary organizations as a framework for complex value-creating and value-delivering processes (Sampson & Froehle, 2006). Given the convoluted and multidirectional dependences, in-depth comprehension of the networks and their dynamics is recognized as an essential source of competitive advantage (Bengtsson & Kock, 2000; Ireland et al., 2002). Organizations coexist together as a super-organism composed of their mixed goals, needs, values, and resources, moving towards a resultant direction. Such an "organism" is often referred to as a "whole network" and is subject to analysis of the resultant properties which depict a high-level view of the ecosystem (Provan et al., 2007). From the individual nodes' perspective, the network is seen as surrounding nodes that they connect to – so-called "ego networks" (Everett & Borgatti, 2005).

Despite its soaring popularity, the eSports industry seems to be remarkably under-investigated from the network perspective. The observation was made after querying the Scopus database's "Business, Management and Accounting" subject with two keywords – "eSports" and "electronic sports" – which resulted in 27 items. An abstract- and title-based review of the articles found only three touching upon the topic of eSports networks.

Scholz (2019) presented an overview on the current state of the eSports industry. The author elaborated on actors, relationships, governing principles, and business models observed in the eSports industry. A work published prior to Scholz's book, attempting to describe the logics of relationships in an eSports network was an exploratory study carried out by Zhou et al. (2015) who employed the *e3-value* methodology to analyse the business network built around the *StarCraft 2* game. The authors examined data retrieved from multiple sources (e.g., threads on Reddit, Liquipedia, articles from the Internet, etc.) which allowed them to discern the network's and translate their value offerings and revenue streams into the proposed model of the e3-value network. The third work categorized in the strategic management theme was a case study of the marketing strategy of the Paris Saint-Germain sports club by Chanavat (2017). The author carried out a number of interviews with a number of the company's insiders which allowed him to examine the interesting case of the entity's transformation into an "omnisports brand" – both traditional-sports and eSports.

Overall, there is a significant research gap in the detailed mechanics of eSports business networks in the current literature. As for now, it is hardly understood how actors and relationships comprising the eSports business networks evolve over time. Although the participants and the relations have been statically identified and there are works presenting the strategic perspective on eSports management, the discipline still lacks a solid empirical foundation of evolutionary patterns in the industry to fully legitimate the proposals of strategic and tactical frameworks. The aim of this chapter is to narrow down the gap in the empirical research of the networks, especially the initial phase of evolution. The turbulent, emergent period of inter-organizational networks has been repeatedly indicated by researchers to be under-investigated (Ahuja et al., 2012). It contrasts with its apparent importance for entrepreneurial practitioners who nowadays need to bring new ecosystems to life more often than ever before. Arguably, finding evolutionary patterns in the emergent networks can provide invaluable

insights on concrete tactics, strategies and business models for the managers' disposal. Furthermore, network dynamics and evolutionary patterns discovered by concrete case studies do not seem to be sufficiently covered in the existing literature. It is believed that thanks to similarities between the eSports sector and other modern IT-cantered e-industries, the results of the study will furthermore contribute to the general comprehension of how organizations develop in highly networked environments.

The research attempted to leverage the assumed accessibility of public data generated by the eSports entities themselves via their social media profiles using the desk research approach described in detail in the following chapter.

2. Methodology

The goal of the research was to capture a changing structure and qualitative characteristics of emerging eSports networks. In order to render a dynamic view on their early stage of development, the research carried out a multiple-case study (multiple-case content analysis) approach by examining a selection of focal organizations – both commercial and non-commercial.

There are numerous studies analysing business networks and proposing various methods of investigation (Basole et al., 2015; Battistella et al., 2013; Tian et al., 2008). However, they usually rely on confidential, hard-to-reach data (e.g., finances, agreements, etc.) which is problematic when it comes to their practical application. Therefore, the research was driven by the urge to exploit the abundance of publicly available data, i.e., on social media. Such an approach is comparable to the one taken by Cavdur and Kumara (2014). The authors applied an approach of scanning Reuters news with an assumption that co-occurrence of two or more entities in an article can be interpreted as evidence for a relationship between them. This work similarly focused on the analysis of unstructured text data, but instead of using news articles, this research processed text data from the network's participants social media profiles. A methodology based on co-reference in news articles was also taken by other researchers, e.g., by Zhang et al. (2012). Supposedly, the analysis of social media content, as opposed to the analysis of news articles, provides a view on the network from the focal entity's viewport whereas news articles are usually narrated by third parties.

The selection of the research objects was aimed primarily at finding entities representing different roles and objectives in order to provide a diverse perspective on the network evolution. Additionally, it was paramount in the context of the proposed research methodology to choose entities effectively utilizing their social media in the process of communicating events that change their ego-networks' structures. In other words, the social media had to: (1) be updated frequently, (2) contain ample references to other parties, and (3) comprehensive descriptions of the corresponding events. The review concluded in three selected organizations presented in Table 1.

The subject of the analysis were contents (text, image, and video) of each consecutive post scrutinized in search for (1) other entities related to them, (2) roles of the other entities in the relationships, and (3) types of the relationships. Drawing upon the approach developed by Cavdur and Kumara (2014), the research assumed a model of implicit co-occurrence of a focal organization (i.e., publishing a post) and a related organization. A significant chunk of the posts included links to external sources which were additionally investigated if presumed to had embodied additional insight on an event or context.

**Table 1.** Summary of entities selected for research

Name	Fantasyexpo	WEST (Wroclaw E-Sports Tournament)	ASE (Akademickie Stowarzyszenie E-sportowe)
Self description	"The largest Polish gaming agency offering creative strategic consulting for brands, unique marketing sales campaigns, as well as product and event campaigns" (Fantasyexpo, 2019)	"An eSports project co-created by a group of young people from IKSS – an academic organization at Wroclaw University of Economics and Business" (WEST, 2019)	"League of legends team representing Wroclaw University of Technology" (ASE, 2019)
Social media profile chosen to provide the data for the ego-network examination	facebook.com/ Fantasyexpo	facebook.com/ WESTikss	facebook.com/ Akademickie-Stowarzyszenie-E-sportowe
Time period subjected to analysis	From 25 March 2013 to 30 April 2014	From 16 January 2018 to 23 October 2019	From 22 November 2017 to 11 December 2018
Number of collected evidence artifacts (social media posts containing references to other parties)	320	100	93

After the scrutiny, in case a relationship was found, its type was labelled using the accepted relationship type classification system. The roles of the entities forming the relationship (the focal one and an exogenous to the focal entity's ego-network) were also labelled using the accepted, extended model of the eSports industry presented in Figure 1. The result was a list of chronological occurrences of evidence of specific dyadic connections which, collectively, rendered a dynamic view on the evolving ego-networks. An exemplary process was presented in Figure 2 and properties attached to each event in Table 2. Additional information extracted from both the posts themselves and the external sources supported the findings about the eSports industry's mode of work.
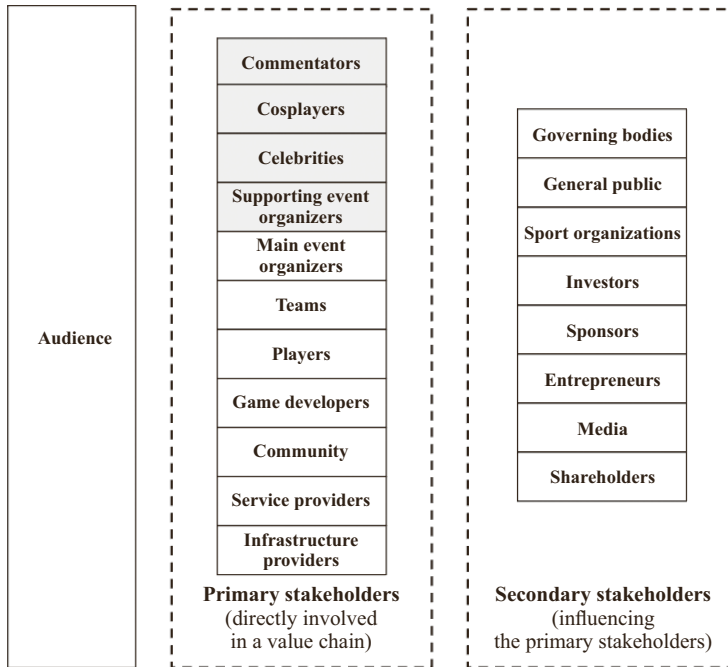
Fig. 1. Extended model of eSports industry found during research.
Gray ellipses depict roles additional to Scholz's model. During research it was found
that some entities did not fit any of previous roles and had to be classified differently

Source: (Śliwa & Krzos, 2020)
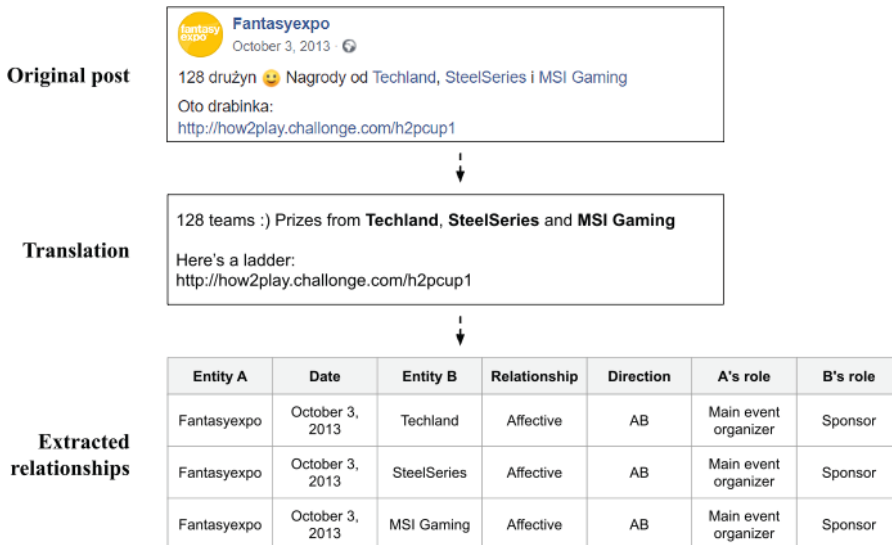
Fig. 2. Example relations extracted from one of analyzed posts

Table 2. Properties of network events determined during data analysis

Value name	Description
Focal organization	The name of the focal organization
Evidence time	The time of publishing the evidence (i.e. a Facebook post) by the focal organization
Related organization	The name of an organization described by the focal organization in the evidence which implied a relationship between them
Relationship type	The implied type of the relationship (according to the typology discussed later in this chapter)
Focal organization's role	The implied role of the focal organization in the relationship according to Figure 2
Related organization's role	The implied role of the focal organization in the relationship according to Figure 2

The classification system used by the following research was presented in Table 3. It extended the typology proposed by Ahuja et al. (2012) with explicitly defined participants, which comprised acknowledged definitions of each relationship type. Moreover, the pilot research contributed with a more detailed description of each relationship type as well as resulted in a step-by-step algorithm for the relationship classification depicted in Figure 3.

Table 3. Types of relationships and participants used by research's network model based on a typology proposed by Ahuja et al. (2012)

Relationship type	Participant type	Acknowledged definition
Hierarchical	Superior	The type of a relationship evincing with an influence that a *superior* party has over a *subordinate* by which the superior one can formally enforce its will over the subordinate one
	Subordinate	For example, a regulator can enforce actions of a firm so the regulator is a *superior* participant and the firm is a *subordinate*

Table 3 cont.

Affective	Affecting	The type of a relationship evincing with an influence of one participant (*affecting*) affecting another (*affected*) without a formal force, causing an observable, one-sided action of the affected party. Specifically, affective relationships can be distinguished in situations where one participant benefits significantly more from the relationship or where one of the participants does not know about the other's existence. For example, a charity organization may affect its supporter (i.e., an *affected* participant) to back it so it is an *affecting* participant
	Affected	
Market competition	Competitor	The type of a relationship in which there are multiple *competitors* competing over a scarce element (i.e., resource, client, etc.)
Market cooperation	Cooperant	The type of a relationship in which there are multiple *cooperants* who work together on one or multiple value streams (therefore value exchange may occur between them during the process). Market cooperation may originate from an influence of one participant over another but as opposed to the affective relationship type, the observable effect of market cooperation is involvement of both parties in mutual value streams which they both benefit from or have interest in
Market exchange	Client	The type of a relationship in which there is a *supplier* providing value and a *client* receiving it in exchange for other kinds of value (usually, but not limited to, monetary)
	Supplier	
Referential	Referencing	The type of a relationship in which there is a *referencing* participant who promotes a recognizable statement about a *referenced* participant. As opposed to the affective relationship type, the referencing party takes responsibility for results of the referenced one's actions. For example, a certification agency declares a certified firm (i.e., a *referenced* participant) meets certain requirements so it is the *referencing* participant

The results of the investigation were assumed to present the examined eSports entities' individual perspective on their own ego-networks, interpreted by the researcher studying the evidence. An ego-network, as defined by Everett and Borgatti (2005), was understood as a focal entity's organizational neighborhood, i.e., other entities related to it. The resulting time-series of changing ego-networks, i.e., relationship types, roles, and participants themselves, were used to discover network evolutionary patterns in the entities' early lives.
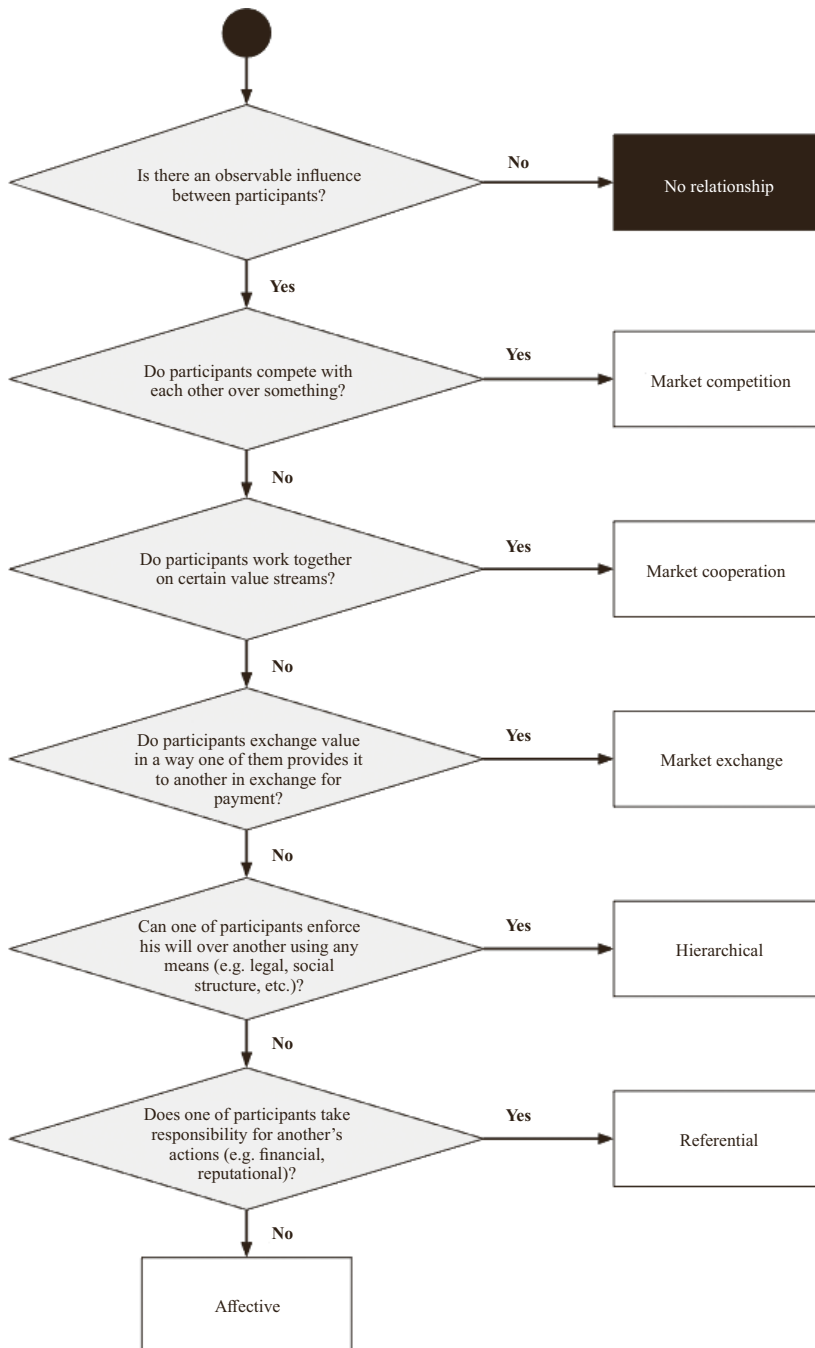
Fig. 3. Algorithm for relationship type classification used by research

Source: (Śliwa et al., 2020)

3. Results

3.1. Additional roles in eSports network

During the research, a few roles of the network's participants were found to exceed the classification proposed by Schultz and were characterized in detail below, based on their interactions within the examined network. They led to a proposal of a new, extended classification presented in Figure 1.

3.2. Cooperation between main and supporting event organisers

Presumably, in order to gain momentum and boost recognition, event organizers in the emergent networks were found to cooperate with each other – one of them organized the main event whilst the other organized a sub-event. The so-called "sub-event" was usually an event contributing to the main event's agenda, e.g., exhibition, contest, tournament, etc. A common practice of the main event organizers was to partner with various game-themed entities who enriched the main event with their brand stands (brand exhibitions) in the form known from expos and conferences. This approach put the main event organizer in the position of an integrator of various smaller endeavors contributing to the overall experience of the main event. In the research, such a relationship between the main event organizer and the sub-event organizer was classified as the market cooperation. Sometimes the partnership could be regarded as the market exchange, given that the guest organization contributed to the main event in exchange for access to its wide audience of potential customers. However, the value exchange contributed to the eventual reception of the main event by the target audience and, therefore, to the main event's value stream, making it more plausible to treat the relationship as the market cooperation.

3.3. Relationships between event organizers and game developers

Interesting relations could be observed between event organizers and game developers which were usually characterized as "affective". Although the game developers frequently offered special plans for organizations interested in running tournaments that featured their products (including licenses, predefined schemes of contribution to a prize pool and other custom-tailored supporting services), there was rarely evidence of cooperation between the parties. Instead, the "special plans" frequently defined guidelines for the event organizers (CopperKitten, 2016; Psyonix, 2018) and predefined frameworks for such relations beforehand. Therefore, such plans could be defined as products of the game developers "bought" by the event organizers, making the relations rather instances of the market exchange. Moreover, the market exchange could even take no place between the parties (a game used in an event could be released with an open license so that an event organizer could use it for free or, in more extreme cases use it illegally). The relation would then resemble more the "affective" type (whereas the game developers affects the event organizer) since the game developer might be unaware of the event organizer's existence whatsoever.

3.4. Relationships between main event organizers and players/teams

Relations formed between the main event organizers and both players and teams competing in tournaments were primarily characterized as "market cooperation". Both roles were observed

to contribute to the final value stream received by the audience whose main goal of participation was assumed to observe the competition. Sometimes, the main event organizers were also categorized as "entrepreneurs" contributing to formation of new teams by people who had decided to compete in a tournament during the signup phase. The teams seemed to often emerge spontaneously (given any information on them other than their names in an event's rank tables was hardly available) for a particular event and then ceased to exist if not successful. Conversely, winners or at least high-ranked teams often repeated their application in subsequent events.

Teams and players competing in a tournament for a particularly scarce resource, i.e. a prize and the title of the champion, formed with each other relations which were classified as "competition". Nonetheless, it was found during the study that the teams and players used to share information about upcoming competitions on their social media profiles. Usually, that information contained remarks about both an event's organizer (which may imply "cooperative" or "affective" relationship) and an opposing team or player. The act of information dissemination could also imply an "affective" relationship.

3.5. Evolution of relationship leading to varying roles and relationship types

An entity's role was noticed to vary throughout the lifetime of its particular relationship. Moreover, the relationship also used to change its type over time. To depict the property, we could quote the eSports network's parties initially contributing to relationships as sponsors and extending their engagement later by contributing to the core value stream with more specific value, e.g. specialized services or infrastructure. Consequently, the type of such relationships was likewise subject to change in the course of time. A frequent transformation of a relationship originated from the "affective" type and finished with the "market cooperation" type. For example, a game developer (Techland) was found to first sponsor an event arranged by an event organizer (Fantasyexpo) and then participate in a next one with its own exhibition, therefore, forming a relationship of the market cooperation between the main and the supporting event organizer.

Another, interesting finding from the emerging eSports networks and their related entities is a pattern of evolution into the "entrepreneur" role that most of the analyzed entities experienced. Many of them who got to a point of being a relatively successful "event organizer", "celebrity" or "media" experimented with forging own teams or another eSport-themed organization. It was assumed that the new organization formed a new, "hierarchical" relationship with its initiator due to the freedom of direct influence that the creator could impose on the child organization.

Interestingly enough, the above evolution of the roles into the "entrepreneur" resulting in new teams occasionally occurred in the opposite direction. Akademickie Stowarzyszenie E-sportowe (ASE), which originated as an academic eSports team, occasionally participated in activities promoting the eSports on the local market (i.e. university campus). The academic environment played a discernably important, catalytic function to the regional eSports market, at that time still lacking vital commercial activities. Notably, a perceivable number of eSports initiatives launching in the environment originated from the student communities. An academic eSports organization, the eSports scientific club "SKN Challenger" operating on Wroclaw University of Economics and Business, was found to experiment with various eSports business models, including event organization, eSports team formation, and eSports news publishing. Believably, such experimentation in a young market is valuable for its growth as it fosters competence gain by the participants who may choose to continue their

work in the commercial environment. There was an observed case of conscious catalysis of the role evolution, i.e. InQube (a business incubator) operating at Wroclaw University of Economics and Business advertised the eSports industry among students and actively supported them in starting up eSports entities. It resulted in multiple students, previously characterized as players and the general public, transitioning to the "entrepreneur" role. On the other hand, it initiated transformation of the university to the "investor" and "shareholder" roles.

3.6. Multidimensionality of roles and relationships

The research suggested that an entity may operate in multiple roles within a single relationship. For instance, various game- and eSports-themed web sites advertised eSports events (so they acted as "media"), simultaneously contributing to prize pools (so they acted additionally as "sponsors"). Another example popular among eSports players was a habit of maintaining private social media profiles, streaming gameplays, publishing news about the industry, and so forth. Consequently, it implied the "media" role, considering they diffused information about their partner, i.e. an event organizer, their team, game developers, etc. Moreover, the players sometimes participated in the events as commentators or celebrities, further extending the set of the undertaken roles.

The "media" role was found to be held in parallel with others particularly often. It can be rationalized with the contemporary abundance of social media and the tendency of sharing knowledge, i.e., themed news and information as a method of boosting customer engagement (Sawhney et al., 2005). This trend encourages mutual resharing of posts in order to reach a wider audience (i.e., subscribers of the other entity's social profile), at the same time generating value to own customers (followers of the profile) who typically represent a similar customer segment and therefore are expected to be interested in value proposed by the other party. In the researched case, the event organizer sharing information about another event organizer's venture competed in the "event organizer" role but cooperated in the "media" role, generating value to own customers by delivering the information. The observed act of simultaneous cooperation and competition of the actors depicted the phenomenon already described by the scholars quite extensively – coopetition (Bengtsson & Kock, 2000). Interestingly enough, the multidimensionality of an entity's role in a relationship introduced a compelling model explaining the dichotomy of the coopetition phenomenon. This led to the conclusion that not only roles are multidimensional but so are relationships.

4.   Conclusions

The research provided an insight into the dynamics of inter-organizational networks in early stages of development by studying publicly available data produced by the participating actors themselves (i.e., social media posts). The subject to the analysis were entities operating in the booming, yet under-investigated eSports industry representing multiple roles in the extended model, based on previously proposed by Scholz. Concerning the eSports industry's characteristics, the findings suggested discrimination between the different types (i.e., main and supporting) of the network role previously known as a single event organizer, and briefly described the observed relationships between them. The chapter also described

the relationships between the event organizers, game developers, players and teams. The results also encompassed observations of the networks' structural dynamics, i.e., multidimensionality and evolution of the network roles in time. Specifically, they suggest that the actors did not represent a single, predefined or self-chosen role throughout their life but rather the roles fluctuated and occasionally overlapped with others.

An obvious limitation of the study was the research sample. It could be extended to include a greater variety of entities. Additionally, extending the research context to different industries might help to verify whether the findings are general or industry-specific. The methodology of obtaining the data could also impact the findings because, arguably, the entities might have published posts selectively, advertising advantageous information and hiding unprofitable events. As a result, the incremental image of the ego-network would be incomplete and in low-resolution. It is advised that the future research is augmented with other sources of data, e.g., interviews as well as news articles and posts published by entities independent from the analyzed ones.

The findings are believed to find use in the managerial practice and the general comprehension of how organizations develop in highly networked environments. Supposedly, they can be used by practitioners who seek for methods of network analysis. The authors intend to continue the course of network analysis and welcome fellow scientists and practitioners to join or provide a critical feedback.

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