Business Models In E-Sports: Starcraft 2

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ABSTRACT

E-sports, or electronic sports, is a term referring to competitive (video)gaming, where players face off against each other in serious matches and tournaments. While e-sports have become one of the major forms of digital culture and form of business in gaming, research within e-sports is yet scarce. This exploratory study aims to further the understanding of the business ecosystem surrounding e-sports. We document and investigate different actors, players, their relationship and revenue models in one of the world's biggest e-sports ecosystems around the game Starcraft 2. We employ the e3-value methodology, along with a qualitative analysis, to build an understanding of the e-sports ecosystem. Through this ecology analysis, five distinct revenue models are identified and the key actors of these are presented. Based on our results, e-sport players employ tournament earnings, casting, coaching, team salary and sponsorships as their main revenue models. Furthermore, the study illustrates the vital importance of sponsors to the ecosystem.

Keywords: E-sports, Business models, Business ecosystems, Gaming, Starcraft 2, e3-value

INTRODUCTION

E-sports, or electronic sports, is a term commonly used to describe games where players face off against each other in serious matches and tournaments. The term can also be written in the form esports. Wagner (2006) builds upon the definition of sport set forth by Tiedeman (2004) and defines esports as:

"eSports" is an area of sport activities in which people develop and train mental or physical abilities in the use of information and communication technologies." [35, p.428]

E-sports is an interesting topic, as the e-sports industry is quite new, but growing by a huge percentage each year. The online video-streaming platform Twitch, which hosts many notable e-sport names, had 100 million unique viewers per month during the last year. This signifies a growth of 55 million monthly viewers from the previous year [33]. The International 2014, a major tournament for the game Dota 2, had a prize pool of over $8.7 million [34]. Comparing this to the prize pool the previous year, which was $2.8 million, we can see a significant growth in the prize money awarded [20]. As we can see from these figures, the growth in the e-sports industry during the last years has been dramatic, further cementing it as an interesting subject of study. The three most popular genres among e-sports games are real-time strategy (RTS), first person shooter (FPS) and multiplayer online battle arena (MOBA). The largest RTS game at the moment is Starcraft 2, with Counter-Strike Global Offensive being the most popular FPS game. In the MOBA genre there are several games competing for top position, with Dota 2 and League of Legends (LoL) being the current leaders [24].

Even though the e-sports industry has been growing very rapidly, there has not been much research conducted within the field of e-sports. From the growth of the industry, it is clear that transactions are taking place between network actors on a daily basis, but it is unclear how these actors interact with one another. This subject is not only interesting from an e-sports perspective. It is also of scientific interest to study the development of such a newly formed and rapidly developing business ecosystem. By studying the development of this particular business ecosystem, we might also be able to build a broader understanding of other developing business ecosystems.

The main research question of this study is: *"What are the business models e-sports players are using, and how do these business models generate value?"*

This exploratory study aims to answer these questions regarding the business models present in the esports ecosystem using the e3-value methodology. This will help build a better understanding of the ecosystem as a whole as well as laying the way for further research on the topic.

DATA AND METHODOLOGY

Netnography and Data Used

The data gathering and first part of the analysis loosely follows a general netnography methodology. Furthermore, the e3-value modelling methodology is used for presenting and discerning the gathered data as well as depicting the ecosystem. Kozinets (2002) describes netnography as a qualitative methodology for investigating social, cultural and economical phenomenon in the online world. The steps of netnography are, in order: research planning, entrée, data collection, analysis and interpretation, ensuring ethical research principles and research representation [13]. The research planning phase clarified the need to find how e-sport players were approaching their trade. This meant finding sources covering the various value generating activities that these players took part in. Due to the fact that the majority of the sources included in this study were of a very public nature, we felt that there was not a need to introduce ourselves to the player community during the process of this study. This is usually the case in netnography in general, as the most common sources for data include Internet forums, web pages, social media as well as chat rooms [13]. The data collection was approached in an iterative way: that is to say that not all sources of

data were chosen at the start, but rather explored as the research process got further. To help with the analysis of the data, we used the e3-value methodology, as presented in more detail later in this chapter. As mentioned, the
nature of much of the data used meant there was no significant need to acquire consent from the writers of the various articles. Likewise, the results of the analysis phase were not directly presented to player representatives, as we felt we had already acquired sufficient knowledge.

Most of the information used in order to identify the actors in the network has been gathered from various Internet sites such as Liquipedia, a Wiki based service focusing on SC2 and e-sports within SC2. Additionally, various articles, data collection sites as well as discussion forums and chat rooms such as IRC and Reddit were used. As e-sports are primarily Internet based, there is an abundance of different information available online. Most of the information comes from websites dedicated to computer gaming, e-sports in general or SC2 in particular. Internet material can in some cases be considered to be less credible than information available in printed form. However, as much of the material collected from various articles and pages available online are read by a large audience, blatant misinformation is often very rapidly exposed by readers who are familiar with the subject. Due to this almost peer review like process; most of the material used is very reliable when it comes to the correctness of the information provided, as faulty information would already have been pointed out. There is, of course, a small chance that some of the information used in this study is incorrect, but as the sources chosen are all of mostly high reputation, the chance for false information is quite low. Kozinets mentions qualities for good sources such as: high traffic, research question relevant segment and descriptively rich data. We feel that the sources used in this study rank highly with regards to these factors, so we feel that we can rely on the information presented by these sources [13].

As mentioned, one of the main sources for information is Liquipedia. The website includes a thorough listing of SC2 teams along with player profiles for individual players. Tournament statistics are also available through the website. As Liquipedia is a Wiki type website, a history section is available for each individual page, showing what revisions has been done and when. This increases the reliability of information, as we can more easily look through the revisions and identify if any false information has been posted intentionally. Another large source of information is the column Insert Coin by Tassi. The column features a series of interviews with influential individuals from different areas of the SC2 professional field [29] [30]. A summary of the sources used in this study, along with the principal type of information obtained from them is presented below in table 1.

Table 1. Summary of data used

Source	Source type	Type of information obtained
Liquipedia	Wiki style information portal	Player information, teams, tournaments, broadcasters, sponsorship, general information
Insert Coin	Column series	Organizations, casting, streaming, general information
E-sports earnings	Curated information on earnings	Player earnings, tournaments, player information
#liquipedia	IRC chat channel	Team salary, teams
Team Liquid Forum	Discussion forum	Teams, player perceptions
Reddit (/r/starcraft2)	Discussion forum	Coaching, teams
Reddit (/r/esports)	Discussion forum	Coaching, teams
Miscellaneou s articles	Article	Game developers, general information, broadcasters, viewers

After a significant portion of data was collected, the researchers analysed said data. Rather than strictly coding, the data was mapped to the appropriate e3-value elements, mainly actors and activities.

The categorisation was done as according to the researchers best understanding of common themes among the various data sources. Additional data was then gathered to clarify the relationships within the e3-value ecosystem depiction and solidify connections already formed within the e3-value model. This concluded the interpreting part of the netnography research. The details of the e3-value methodology are discussed next.

The E3-Value Methodology
The e3-value methodology is a technique developed by Gordijn and Akkermans (2001) for modelling, designing and evaluating business models and economic linkages between different actors within an ecosystem. According to Gordijn and Akkermans, the e3-value method is "based on an economic value- oriented ontology that specifies what an e-business model is made of" [10, p.11](Gordijn, Akkermans 2001m pp. 11). For this study the e3-value methodology gives a clear tool with which to map the collected data into an easier to understand form. The mapped data helps clarify how the various business models are situated in regard to each other. Previously the e3-value methodology has been used to model for example strategic partnerships and e-services [4].
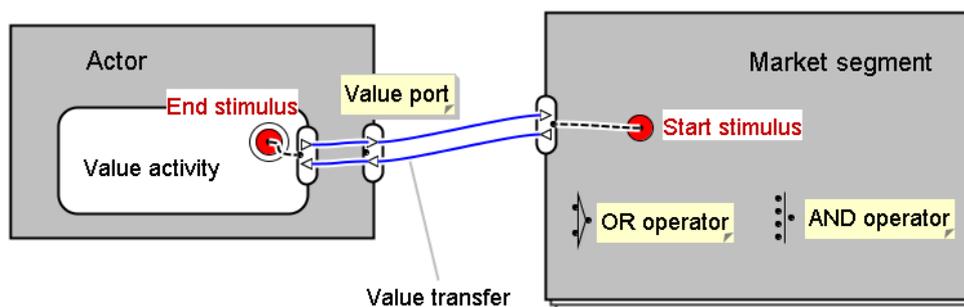
Figure 1. Graphic symbols of the e3-value methodology

A graphical representation tool accompanies the e3-value methodology. The symbols used in this tool, along with descriptions of what these symbols represent, are presented above in figure 1.

An actor is, according to Gordijn and Akkermans, "an independent economic (and often legal) entity" [10, p.13]. A market segment is a piece of the overall market that consists of individual actors that can be grouped together based on common characteristics. The third main element of the model is the value activity, which is a certain of task or activity that an actor performs. The goal of the value activity is often to generate revenue, but there can also be other motives associated with it. A composite actor is a group of individual actors forming together in order to provide a specific product or service. Value objects can be both material and immaterial things exchanged between actors in what is termed a value exchange, and they are exchanged through value ports. A value offering is, as the name suggests, an offering between two distinct value objects, usually linking value ports together. Value interfaces group these value ports, as one actor might exchange value produced by a single value activity with many separate other actors or market segments. [10]

In the e3-value model, a distinct start and end stimulus can usually be defined. The start stimulus has its point of origin in a specific need, for example the need for getting coached by a professional player. The stimulus can go through the value network in complex ways, but it comes to an end point at the producer of the service or physical item, in this example the end point is at the professional player who provides the coaching. [10]

This paper implements the e3-value methodology to map the different actors and market segments associated with the SC2 e-sports field. By mapping these, we can build a better understanding as to what kind of networks exist, and through these identify the revenue models present.

NETWORK ACTORS IN THE E-SPORTS BUSINESS ECOSYSTEM

In this chapter we examine the different actors in the e-sports ecosystem based on our observations. The intent is not only to describe the various actors but also their position in relation to each other. For each network actor the following information will be presented: who they are (the actor), what they do (the actor's value propositions) and why they do what they do (the business model). The actors that were chosen for this study were the ones most frequently mentioned during the data collection phase. These different actors appear to be of significance within the e-sports cultural community, and hence can be seen as central to the ecosystem.

Professional Players

One dictionary definition of professional is "participating for gain or livelihood in an activity or field of endeavour often engaged in by amateurs" [22]. The definition of what a professional player in e-sports is can be a bit more difficult, as the line is not always as clear as in for example traditional sports. Not everyone who is considered a professional player lives solely on playing, and might have other means of income such as a day job. It is worth noting that not all activities that professional players earn income from are strictly based on playing. These other sources of income are talked about in more detail later in the study. We have chosen to classify players as *professional players* and *other players* as we feel this best represents the multifaceted roles of players. An alternative classification would be to group players as professionals, semi-professionals, amateurs and casual players.

Professional players emerge from the general player population due to the competitive environment that the e-sports field creates. Most of the games played in high level e-sports play are very skill intensive and require a large commitment of time to practice in order to excel. Not all players have the opportunities and capacities, or the desire, to become professional players. This is further discussed in the section about other players.

An example of a professional player would be Yo-Hwan Lim, more commonly known by his in-game name "BoxeR". Lim is one of the most known SC2 players in South Korea, having a fan club of over 600 000 people. Additionally, Lim has released

a DVD containing some of his most well known matches, and written an autobiography titled "Crazy as Me". Lim started his career in 1999 and was most successful in the first half of the 2000's. He is not currently one of top players, but is still regarded very highly within the player community. Lim received a personal sponsorship of approximately $180 000 from Intel at the end of 2010, solidifying his position as a notable person within the e-sports field. As can be seen in this example, the way in which a professional player generates revenue can be done in several different ways, with revenue coming in from several different actors and market segments. [14]

Sponsors
Companies or organizations can choose to sponsor either individual players or whole teams. The majority of sponsors are commercial actors and companies. The most common sponsors are manufacturers and sellers of gaming equipment, consumer goods such as beverages as well as general computer equipment and components.

Sponsoring within e-sports can be seen as the same as any kind of other commercial endorsement and parallels can be drawn to sports endorsement, which is frequently used within other fields of business [28]. Players and teams offer the same kind of visibility that for example football players and teams offer to their respective sponsors, the only notable difference being that the target audience is smaller and more specific. One could argue that sponsoring within e-sports is more effective than sponsoring in the traditional world of sports, as the target audience is much narrower, so it can be more resource efficient for a sponsor to get the desired message across.

An example of a big sponsor in the e-sports industry would be the South Korean conglomerate Samsung. From the year 2000 onwards, Samsung was the sponsor of one of the largest e-sports tournaments in the world, the World Cyber Games (WCG). The partnership was a very visible one, with Samsung's logo showing on the front page of the WCG website and Samsung being involved with several aspects of the event. The WCG as an event was disbanded in 2014. [37]

Teams
Teams, sometimes called clans, can play a very varied role within e-sports, and there are as of yet no set definitions as to what type of teams there are. However, by looking at the different teams operating in the e-sports field, we can identify different kind of teams based on their organizational structure. Teams can be separated into two categories: "one game teams" and "multigame teams". As the name suggests, one game teams focus on only one particular game title, whereas multigame teams can have players playing several distinct game titles. One view on this is that multigame teams are more about using the team as purely a brand, where as one game teams are more tightly focused on building up the skill of the individual players by practicing only against the other skilled players in the team. An example of a one game team is "SK Telecom T1". Examples of multigame teams are "Evil Geniuses", "Team Liquid" and "Invictus Gaming". There has been a noticeable shift in recent years from one game teams towards multigame teams among professional teams in the western hemisphere. In Korea, it appears that one game teams have remained more important, possibly due to the larger scale of the general ecosystem surrounding SC2. [15] [18] [19]

In SC2 most teams are one game teams formed of individual players, with the intention to promote the team as a whole, even though most games are played on an individual basis. Because competitive SC2 is almost solely based on individual games, the function of a team is not the same as in more traditional sports such as football where each member of a team contributes in his or her own way to the overall success of the team. In SC2 members of the same team can very well be pitted against each other in tournament matches. Here we see perhaps the biggest difference between SC2 and other popular e-sports games, as LoL is a team-based game, thus meaning the team has a very different role for the players.

An example of a well-known team within the e-sports field would be Evil Geniuses (EG). EG is a multigame team, with their team roster consisting of the following games: Starcraft 2, Dota 2, Super Street Fighter 4, Marvel vs Capcom 3, Heroes of the Storm and Halo. EG has backing from large sponsors such as Razer (gaming paraphernalia), Kingston (computer components) and Monster Energy (beverages). The SC2 division of the team currently has six players representing four different nationalities, with most of the players from North America. [8] [15] [18] [19]

Tournament Organizers
The tournament organizers are the people, organizations or companies responsible for making a tournament happen. Tournaments can take place online as well as in a physical location. It is common to organize the biggest and most important tournaments in a physical location, as these tournaments gather large crowds that are interested in seeing their favourite players play SC2.

The smallest types of tournaments are informal get-togethers built within a specific community, which might be a group of friends who all know each other, or the users of an online discussion forum. These tournaments might not have any prizes, and are mostly played as a recreational activity. On the other end of the spectrum we have highly competitive tournaments and tournament series organized by commercial tournament organizers, such as the GOMTV Global Starcraft 2 League (GSL) in South Korea and Major League Gaming (MLG) in the United States. This study will concentrate more closely on the top end of tournament organizers, due to this study having its central focus on business models present within the field of professional e-sports players.

An example of a well-known tournament organizer is the previously mentioned Major League Gaming (MLG), which operates in the United States. MLG was founded in 2002 and is currently one of the biggest e-sports leagues in the western hemisphere. During 2011 MLG organized six Pro Circuit events in different parts of the US. The events feature a main SC2 tournament along with tournaments for two other games, Halo: Reach and Call of Duty: Black Ops. Along with the Pro Circuit series MLG also organizes regional Invitational tournaments for Europe, Asia and the US leading up to the MLG Global Invitational Finals. The Pro Circuit tournaments offer a prize pool of $14 000. It is worth to note that the prize pool for the South Korean GSL tournaments is considerably higher, showing the geographical differentiation discussed by Rosenqvist and Wright. [17] [21] [27]

Broadcasters
We can identify two distinct types of broadcasters operating within the SC2 e-sports field. The value these two types produce is quite similar, but it is still important to make a distinction between them.

The first type of broadcaster is the individual broadcaster. This person is usually also a professional player, but it is important to make a distinction between these two, as these are two distinct sources of income for the individual. The most common type of individual broadcasting activity is streaming practice games. This activity is usually coupled with the practice of casting, creating both visual and audible value for the viewer.

The second type of broadcaster is the organizational broadcaster, which can be either a commercial broadcaster or a player driven communal broadcaster. Both of these operate in a similar fashion, with a certain fixed staff and alternating visitors doing casting. These also commonly operate as streams, but televised broadcasting is also common in for example South Korea [36]. We can naturally differentiate between these two subtypes of organizational broadcaster, as commercial broadcasters have the objective of making money for their stakeholders, whereas player driven communal broadcasters generate social value rather than monetary value.

An example of a well-known individual broadcaster is Steven Bonell II, more commonly known by his screen name "Destiny". Bonell II is an active SC2 player, and more importantly, a very active streamer. Most of the streaming content shows practice games being played against other players, along with running commentary on the games. Aside from practice games, Bonell II also streams more competitive games and games put on solely as a show. [2][31]

Other Players
The professional players make up only a small percentage of the total player population within the SC2 community. Most players are non-professional players that play only for their own entertainment, as a hobby, rather than the game also being a source of revenue. Some of the players are content playing the game on a more casual level, where as part of the players would like to successful on higher levels of the game. These are the aspiring players, and they are very important for the e-sports industry growth as they are watch streams, compete in tournaments and follow professional players very closely. The second kind of other players that are presented in this study is what can be called the audience.

Being that the objective of these aspiring players is to become professional players, there are several ways to achieve this. The route most players take is to simply play more and use more time on practicing. The second option, which is getting increasingly more available, is education within the subject. Many professional players offer coaching services, usually for an hourly rate. The goal of this coaching activity is to transfer knowledge from the professional player to the aspiring player. Aside from this direct coaching, there are also many websites dedicated to articles and discussion about SC2 strategy and theory. The University of Berkeley has taken this one step further, as it has run a course on SC2 theory in the past, based on a student initiative [1].

The audience, or viewers, follows streams and tournament results, but might not be interested in taking part in high-level competitive play themselves. Among members of the audience, there are also people who do not play SC2 at all themselves, but still enjoy watching competitive matches.

Game Developers
There would naturally be no e-sports business without games to play, so game developers play a big role in shaping the e-sports business. Due to the fact that e-sports are centred on individual game titles, the dynamics of the field is quite different from traditional sports. Where traditional sports such as football and basketball have evolved over a period of years into mostly independent institutions, esports is ever changing, as game developers release new games and old games get left behind. This means that game developers play a crucial role in shaping how the e-sports field looks. Customer needs naturally indicate in what kind of direction the game industry moves, as game developers aim to please their customers.

As the rules and inner workings of computer games are not as rigid as in traditional sports, changes can be made very dynamically and implemented almost instantly. Blizzard Entertainment, the developer of SC2, takes a very active role in balancing the game mechanics by changing individual aspects of the game if any strategies are seen as overwhelmingly powerful [3]. This means that players need to learn how to adapt to changes in the game. This is quite different from traditional

sports, where the athletes know that the rules of the game are not going to drastically change, and can concentrate on specific aspects. This also means that professional e-sports players have to develop a more general skillset that can work in different situations, as well as different games if the ecosystem changes significantly.

As this study mainly focuses on SC2, it is naturally interesting to look at how the game's developer, Blizzard Entertainment, is involved in the e-sports business centred around this game. Blizzard Entertainment is not as closely involved in the e-sports business as some other game developers are in their respective fields. For example, Riot Games, the developer of League of Legends, is extremely involved in the e-sports aspect of League of Legends.

REVENUE MODELS

In this section, the central traits of each of the identified business models will be listed, a real world example of such an actor will be given and finally the value proposition in the business model will be described, with information on where the revenue streams come from. Furthermore, figure 2 contains a graphical illustration of the ecosystem as depicted by the e3-value methodology.

Tournament Earnings

One of the main sources of income for most players is prize money that can be won by playing and participating in tournaments. Tournaments range from huge production played at a physical location to smaller tournaments held online. Tournament prizes are usually awarded as money, but product prizes also exist. Tournaments awarding product prizes are naturally tempting for companies, as they offer easy access to a large target audience with quite a minimal investment in the form of products the company produces.

The widely influential SC2 information portal Liquipedia categorizes tournaments into various different categories based on regularity, amount of players, prestige, prize pool and several other factors. There are naturally several ways to categorize tournaments, and the model used by Liquipedia is only presented here as an example. These event categories are: Premier, Major, Team, Monthly, Weekly, Show Matches and Miscellaneous. The 2014 Premier Event schedule included 36 tournaments with average number of players being 49. The combined prize pool of these tournaments totalled $2 547 969, with an average prize pool of $70 865 and prize pools ranging from $18 500 to $250 000. [15] [18] [19]

An example of a widely successful tournament player would be Jang Min Chul, better known by his player name "MC". E-sports Earnings report his lifetime tournament earnings to be $490 722. He has several first place finishes to his name from some of the most prestigious tournaments and leagues organized, such as the IEM 4 World Championships. It is worth noting that most of the players with high-level tournament earnings are from South Korea, as many western players do not have access to the same tournaments as players in South Korea. [5]

The value offering of this revenue model is that the professional player brings a certain level of recognition for the tournament he or she is playing in. The tournament organizer is willing to offer prize money for the best finishers at tournaments as a value exchange. The tournament organizer mainly generates income via sponsorships and ticket sales for spectators. Hence the actor or market segment that actually pays for this are the sponsors and people who show up at these live tournaments and pay an entrance fee. This situation can be seen as a two-sided market; a situation where there are two separate actors that each has its own needs that need to be pleased [26]. The tournament organizers generally need both sponsors and players, and one is dependent on the other. If the level of play is not high enough, sponsors will be discouraged to pay for the visibility and likewise if there is not a notable amount of prize money on the line, players might not want to participate.

Casting

Casting is the act of commenting competitive games, either live or pre-recorded. The similarities and ties to broadcasting are apparent, as most of the broadcasted games in e-sports have some form of casting. The activity and processes behind it also share many similarities with casting and commentating in traditional sports.

An example of a player involved in casting is Steven Bonell II, who was discussed earlier in the section on broadcasters. As mentioned, Bonell II streams his live games to a large audience. Bonell II has estimated that he makes an average of $2 per two thousand viewers per commercial shown in the stream. Assuming an average audience of four thousand viewers, showing eight commercials during the period of an hour would total an income of $32 per hour. [2]

The value offering can take several forms. If the player has a personal stream, the value provided for the viewer is a combination of entertainment and knowledge transfer. If the player is casting for a broadcaster, the value provided is providing an expert view on the games, sharing the knowledge that the player has. In this revenue model the revenue is generated from both individual viewers, some of which might pay a fee for a higher quality service such as Twitch.tv provides, as well as sponsors and advertisers that show product promotions during the streams. [32]

Coaching

Some professional players offer their services as coaches for other players as a way to form a new revenue stream. Most coaching is done as one off deals, and usually at a per hour rate. The average hourly rate for the players offering coaching at

the biggest coaching site GosuCoaching was $67, with individual rates ranging from $20 to $300 [11].

An example of a player well known for his coaching activities is Geoff Robinson, better known by his screen name "iNcontroL". Robinson is one of the founders of the GosuCoaching website, and lists an hourly rate of $80 for coaching. Even though some of the other players charge higher prices per hour, Robinson is considered one of the most well known coaches in the SC2 e-sports field.[2] [11] [16]

The professional player provides insight and helps the player buying the service to improve his or her play skills. The value activity involves a kind of knowledge transfer. The revenue generated in this revenue model comes from the individual actors buying the coaching services from the professional players.

Teams

Players belonging to a team are usually paid a form of team salary. The nature of this salary can vary from team to team, ranging from a monthly salary to one off payments to cover tournament travel expenses. Aside from a strictly monetary salary some teams may also pay the players' living expenses. In these cases it is common for all the players to live at the same location, in so called team houses, in order to be able to train effectively [7]. Very little data is available on team salaries, as most teams keep the specifics a secret [9].

An example of a well-known player who earns top salary in SC2 is Kim Won Ki, better known by his screen name "FruitDealer". Won Ki plays for the South Korean Team SCV Life (TSL). He is reported to earn a yearly salary of 35 000 000 KRW, roughly $31 000 [23]. There are players who likely receive higher salaries than Won Ki in other teams.

The value offering of this revenue model is that the player provides an important asset for the team. The team needs high quality players to increase public visibility as well as help improve the overall skill level as the players in the team play against a team. A higher overall skill level means that the team is likely to have higher success at tournaments, leading to a larger interest from sponsors. The revenue generated in this business model comes from the teams, who pay the players some kind of monthly or yearly salary. As previously mentioned, there are several different ways of operating teams, and as information is not easy to find on the subject, it is difficult to give any definite answer as to how much or in what way players actually receive payment from the team. However, the specifics of who earns what are not essential for this study, as we are not as concerned with quantifying the business models.

Sponsoring

Even though most commercial sponsorship within e-sports is directed towards leagues, tournaments and teams, there is still a level of personal sponsorship for some players. Much in the same way as with teams, players can receive either money or other goods from sponsors.

An example of a professional player who has a large personal sponsorship contract is Yo-Hwan Lim, who was already mentioned earlier in the section about professional players. As stated, Lim signed a $180 000 contract with Intel at the end of 2010, one of the biggest individual sponsorships in SC2 esports history [14].

The value offering in this revenue model is that the player creates visibility for the sponsor within the e-sports world. Many of the high level players have a large fan following, creating a lot of visibility for potential sponsorship partners. The revenue generated in this revenue model comes directly from the sponsoring company. The contract can supply the player with a monthly or yearly income, but the sponsorship deal might also be a one-time transaction, where the player receives payment at the beginning of the contract period and obliges to follow the contract for a set period of time.
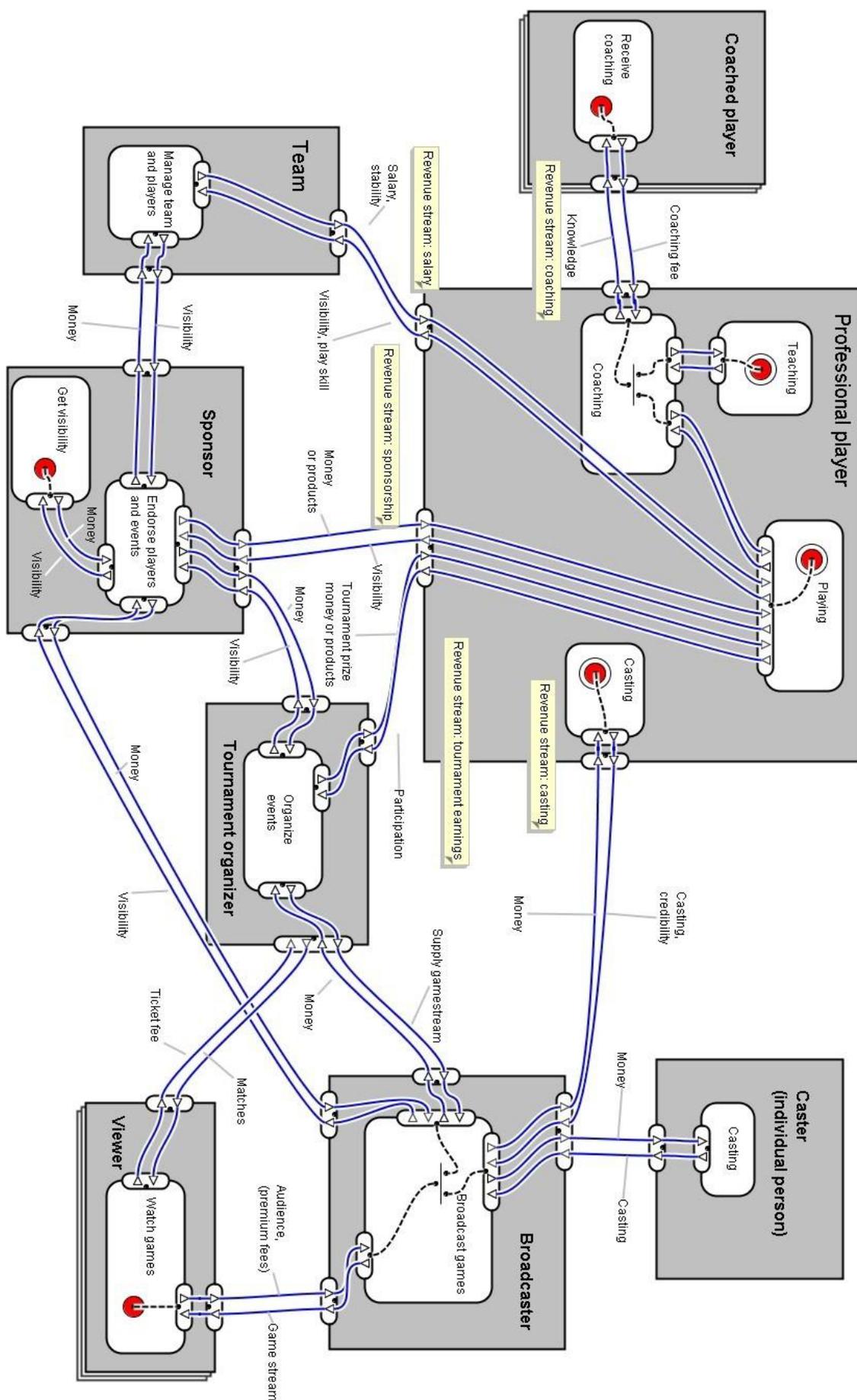
Figure 2. The SC2 value network, from the perspective of a professional player

CONCLUSIONS

Summary
This study identified the essential actors present in the e-sports ecosystem centered around Starcraft 2, with the main focus being on the professional players. By looking at the ecosystem and the actors present, five revenue models for professional players were identified. As a quick reference, the revenue models identified along with who the customers are and where the revenue comes from is presented in table 2 below.

Table 2. Summary of revenue models of an e-sport player

Value activity	Consumer	Revenue from
Tournament playing	Audience	Tournament organizers & Viewers
Coaching	Other players	Other players
Casting	Audience	Sponsors & Viewers (premium fees)
Team salary	Teams	Team (through sponsors)
Sponsorship	Sponsors	Sponsors

Sponsors are responsible for the revenue streams in three revenue models: casting, team salary and sponsorship. The audience can also be seen to be an important market segment, as it is the consumer of many of the services that the professional player produces. The main conclusions that we can draw from this study is that sponsors are vital for the continuance of e-sports. If all revenue coming from sponsors would disappear, it is doubtful that e-sports would continue in the same form, as it exists today. Without sponsors, a shift toward paying for watching streams and tournament matches would be required to keep the tournament circuit running. Comparing the situation to traditional sports, we can see that sponsorship is of importance in both traditional sports and e-sports. The culture of paying to watch games either live or broadcasted is not yet as established in e-sports as in traditional sports. However, a recent study suggests that e-sports viewers are willing to spend a significant amount on tickets for events, and also want more events to attend [6].

It seems as if many professional players have already realized that they can receive revenue streams from several different sources, and it also seems that many players have found utilizing these different streams to be quite easy, as there are many players serving many different roles within the ecosystem.

Industry Implications
As mentioned, sponsors are one of the central actors in the ecosystem, as much of the actual revenue comes from them. This is something that professional players as well as other actors in the e-sports field should take into consideration when thinking about their own revenue models. In order to increase financial stability a professional player might want to diversify his or her revenue streams as not to be dependent on a single actor or market segment. By identifying the different sources of revenue streams the individual professional player can choose to concentrate his or her efforts towards serving sources of revenue that depend on different actors and market segments, thus lowering the risk of being completely without a source of revenue even if one source would disappear.

The relationships between the different actors are of relevance, something worth noting for other actors than just professional players. All actors that conduct business within the e-sports industry should have an interest in making their own efforts more effective, increasing revenues and decreasing costs. The ecosystem is a good place to look for opportunities to build synergies with other actors.

Research Implications and Suggestions
Building on this study, it might be of interest to further study the relationships between the various actors and how they interact with each other. Within this, the knowledge transfer between coach and coached player might be of particular interest. A quantitative study into how these different revenue models measure up against each other might also be of interest, especially if the e-sport industry continues to grow as rapidly as it has during the last years. At the moment, acquiring the detailed information for such a quantitative study has been a challenge, as many players and other actors are guarded towards releasing financial details.

Another topic that could need further investigation is what makes a game a successful e-sport, as not all games are adopted as tournament games in the e-sports field, only a few select games rise to the top and become lasting hits with an ecosystem built around them. This subject is also linked to what the end consumers find interesting and exciting. Not very much is known about the spectator experience within e-sports, as the industry is quite new. Finally, the geographical difference mentioned by

[27] seems to be another topic that requires further study in order to understand the underlying differences in ecosystems, as this difference is also noticed in this study.

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