

THESES OF THE DOCTORAL (PhD) DISSERTATION

APPLICATION OF PROCESS MANAGEMENT IN INNOVATIVE ORGANIZATIONS

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1. BACKGROUND, OBJECTIVES AND PRESENTATION OF THE RESEARCH HYPOTHESES

Due to the paradigm shift in management practice, the process-based management system has become of paramount importance from the point of view of corporate success, as a result of which managers must ensure that processes are managed according to the plan. Within this framework, the processes must be planned, managed, controlled and monitored, analyzed and evaluated, as well as continuously developed and their changes managed (HERCEGH et al., 2016). The main motivation for writing the dissertation is to examine the applicability of models based on process management logic, which are applied in the business sphere today, at the level of structuring processes in an area where this has not yet been widespread. Processes are present in the life of every organization, but not all organizations are combined into a unified process management system. For the research, I looked for an area of investigation where the elements of process management could be discovered, but the application of modern models that are widespread in the business sphere today and adapted to a given area is not typical. The applicability of the benchmarking approach was also a consideration in defining the study area.

The choice of the research area that meets the criteria above, was inspired by the announcement of the International Olympic Committee (IOC) issued at the end of 2017, in which it also deal with e-sports and the issue of possible future integration. In this announcement, it is specifically emphasized that there are deficiencies primarily at the organizational level in order to e-sports to be recognized as a sport. Based on this, on the one hand, it can be deduced that there is no common position regarding the positioning/institutionalization of e-sports, because nowadays it is an officially recognized sport in several countries, but this cannot yet be stated globally. On the other hand, in order to integrate it into sports, it still needs organizational changes. First of all, e-sport shows similarities with traditional sports not only in its name, but also at the organizational level, among many other characteristics, there is also the desire to establish a management system typical of the majority of sports, but this organization takes place from several directions, and the role of video game publishers also have a lot to do with it. Influences, which generate such fundamental problems as there is currently no comprehensive world organization and

uniform regulations are also missing. As a result, it is expected that some change will occur and some direction will be moved in the future. (One) potential direction of this assumed shift could be the organizational and management model of official sports. Based on the fact, that it is a sector in the process of being formed, the search and adoption of existing organizational practices can promote faster, more efficient formation and development. As a result, I consider it an interesting question to examine what functional differences and similarities e-sports organizations show in terms of process management compared to sports organizations and whether the operation or certain elements of the operation of sports organizations can be incorporated into the practice of e-sports organizations at the model level.

I mentioned the 2017 International Olympic Committee report above as an inspiration. In the few years that have passed since then, this dynamically changing environment has changed slightly, but the basic problem of my research still exists. I would like to point out that at the moment we can talk about an organizational and regulatory problem if the goal is for the e-sports industry to move in a certain direction (even in its current form it can generate quite significant income), but in my opinion this is necessary and that is why I am approaching this the topic from the point of view of integration into sports. The relevance of this direction is also indicated by the fact that it was planned for quite some time that e-sports would be presented in some form at the 2024 Olympic Games in Paris. Of course, another direction could be a special control and regulation system designed for e-sports, but I consider this a longer, much more complex process than it could fit into a dissertation. I would also like to mention that the main goal of my research - the development of a process structure model, which I will detail in the following thoughts - deals with a part of the global "problem", because I carried out my research and the effective application of the developed system at the domestic, national level the most feasible if additional problems to be solved are met, which I will discuss in the following parts of my dissertation.

The main objective of the dissertation is therefore to create a process structure model (starting from the IFUA framework), which I will detail below. During the research, I examined the applicability of the process management methodology for sports and e-sports associations. The creation of the model consisted of several steps, which I also formulated as research objectives:

Objective 1 (theoretical): First, I performed *an ecosystem analysis of e-sports* by synthesizing literature sources in order to map the operating mechanisms of the sector. This was an essential point of my research, with which I laid the foundation for my further work, because this phase was necessary for setting up the relations and connections within the sector to become clear to me.

My research questions for the ecosystem analysis:

Q1: Who are the main stakeholders of the e-sports ecosystem (based on literature synthesis)?

Q2: Which actors are the most decisive in terms of management (based on literature synthesis)?

Objective 2 (empirical): At the domestic level I am conducting a research using the *case study technique* using data collection techniques (interviews, document analysis) proven in the social sciences (BABBIE, 2003; SAUNDERS et al., 2019), between the organizational practices of one of the Hungarian e-sport associations (HUNESZ) and domestic sports associations. In the organizational structure of traditional sports, the national management tasks are carried out by the sports associations, which is why I targeted this level. Although the comparison of individual case studies are strongly criticized in the social sciences, the benchmarking approach is practically proven, useful and effective in business and consulting practice (CAMP, 1998). For this reason I will use the *benchmarking* toolbox in my thesis, a complete explanation will follow later.

My research questions for this phase of the research:

Q3: Do the investigated sports associations apply comprehensively, at a strategic level, the modern process management methods of business life?

Q4: What processes, professional and functional areas and other areas of activity can form the basis of the process structure model?

Q5: What similarities and differences can be discovered in the organizational practices of traditional sports associations and a domestic e-sports association?

3. (main) objective (empirical): Based on the results obtained in the framework of the ecosystem analysis and research conducted using the benchmarking method, a *process*

structure model design for the operation of the domestic e-sport (national) association(s), which is based on the processes of traditional associations and takes into account the needs of e-sports. This can serve as a starting (testing) model for identifying and organizing processes, which can be shaped and modified according to the needs of the organization(s). Although e-sport organizations carry out different activities, such as production or service companies - where process-based management has been successfully applied in practice - the processes also appear in these organizations and some of them (but mostly their structure) are the same with the processes of traditional production, service companies and other institutions. The development of the e-sports "industry" on a huge scale, definitely requires an organized institutional background, and this organization can be created by incorporating the activities in a system.

Objective 4 (empirical): I conduct a survey *using a questionnaire survey* among the main stakeholders of e-sports (e-athletes), during which I assess their opinions on federal and organizational issues on which they have direct influence and experience. In this way, I will assess their satisfaction with the current situation, and I will also carry out a kind of needs assessment on topics for which the central governing body(s) have the greatest responsibility for development, thus I can also get feedback in areas that the process structure model I have compiled may cover. The questionnaire was compiled based on the results of document analysis and semi-structured expert interviews.

My research questions for the questionnaire survey:

Q6: Is there clear satisfaction or dissatisfaction among e-sports players, on average, with the conditions provided by the divisions and associations?

Q7: Is there a clear satisfaction or dissatisfaction among e-sports players, on average, with the specific aspects of organizing tournaments?

Q8: Can there be a difference in the assessment of competition organization aspects between those who have already participated in a foreign e-sports competition and those who have not yet?

Q9: Is there a clear demand among the participants in the survey, on average, for the following changes:

K9.1.: To develop a coach training program?

K9.2.: To develop a competition referee training program?

K9.3.: To develop a youth training development program?

Q10: Do the current domestic conditions of e-sports need improvement?

I also illustrate the interconnection of the steps of my research described above in the form of a diagram:

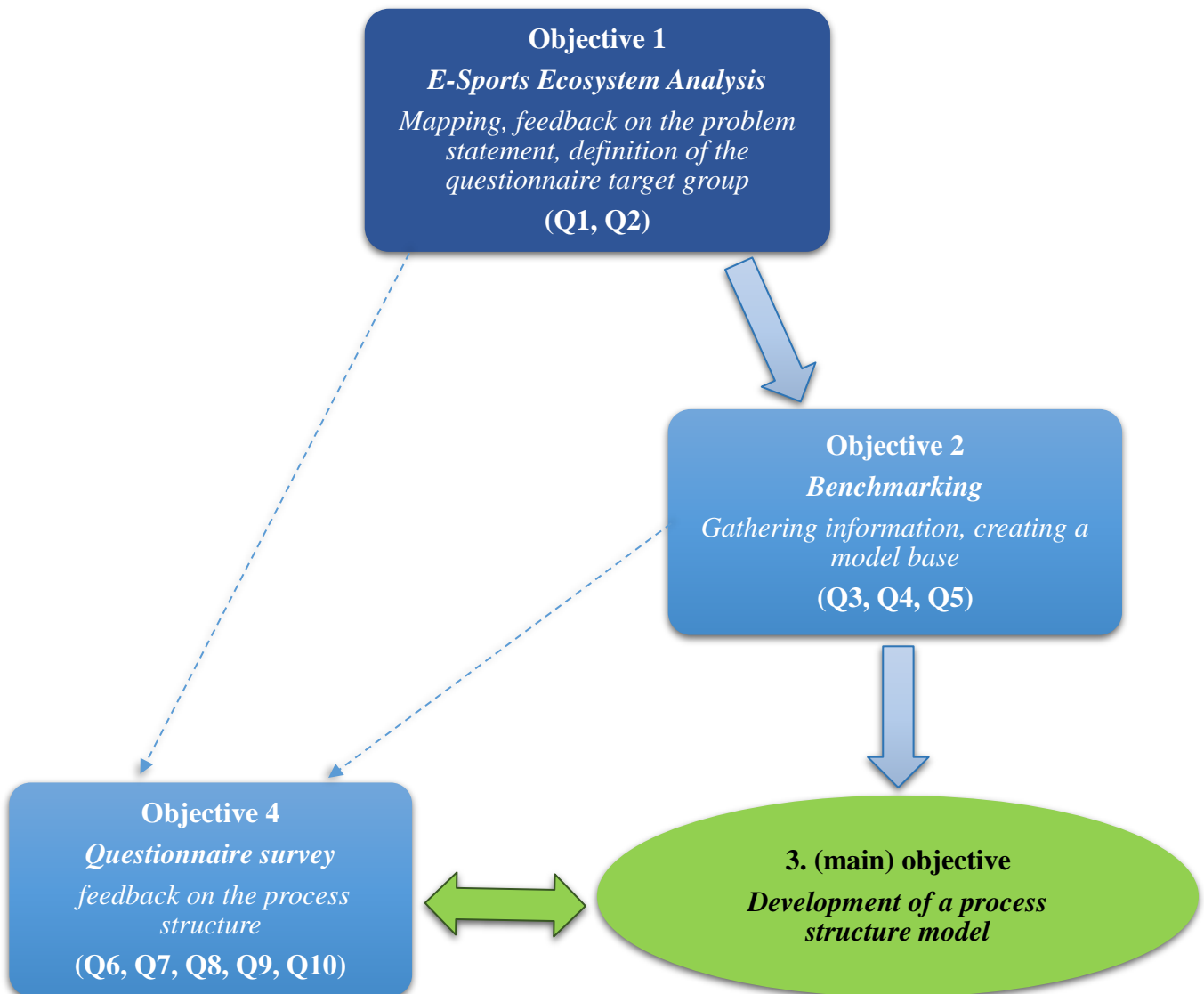


Figure 1: Research model

Source: Own editing

2. MATERIAL AND METHODS

I used several methods to answer the research questions formulated during the dissertation. I performed the analysis of the e-sport ecosystem using literature analysis. During the research, I checked the Scopus database, in addition I conducted research on the Researchgate, Google Scholar and Esportsresearch websites, and also supplemented my research by searching other internet sources, as several consulting companies are popularly dealing with the topic and these studies cannot be found in scientific databases, but these sources play a significant role in understanding the topic. The search was based on keywords "*e-sport*", "*esport*", "*esports*", "*esports ecosystem*", "*ecosystem of esports*" and "*e-sports ecosystem*".

2.1. Benchmarking

The collection of information necessary for the compilation of the process structure model was carried out using a benchmarking approach, for which I prepared semi-structured expert interviews and analyzed the available regulations of the investigated sports associations. According to EVANS (1997), benchmarking is the systematic, regular and continuous comparative analysis of products, services and processes, which can be done within one's own company, or the comparison of the practice of another company or institution with one's own. During the benchmarking process, comparison can be of four types (CAMP, 1998):

- *internal*: comparison of similar operations within one's own organization
- *competitive*: comparing to the best among direct competitors
- *functional*: comparing the methods of companies with similar processes within the same function outside their own industry
- *generic process*: this is a comparison of a process with companies that have innovative, exemplary processes.

I will use functional benchmarking in my dissertation, i.e. comparing the methods of companies with similar processes within the same function. I chose this type of benchmarking because I could not get in touch with a foreign e-sport even after several

attempts with the national e-sports associations of leading countries. Some foreign countries already have a well-structured and regulated organizational background for e-sports.

In the literature section, I discussed that the current situation of e-sports is quite special, as its exact classification and legal regulation have not yet been established, but it has undoubtedly countless characteristics that make it similar to traditional sports, such as traditional sports or officially recognized sports organizations can serve as a suitable basis for the development of the process structure, for which the specificities of e-sports must also be taken into account.

So, during the benchmarking, I will assess the organizational practices of the national federations of sports that are traditional or officially recognized as sports in this country, mainly because of the regulated organizational background. In terms of organizational levels, the focus of my investigation is on the highest-level associations in terms of the national management of a sport.

While choosing the benchmark for the current research, I took into consideration to which sports is e-sport mostly compared to. According to Balázs Bíró, president of the Hungarian E-Sport Association, e-sport can best be compared to three areas within sports: "*One is the world of mental sports, such as chess or go, where primarily mental activity is authoritative, logical thinking, the problem-solving skill is what dominates. There are technical sports, where the struggle is similarly fulfilled in the human-machine relationship. The third area is precision sports, shooting or archery (M4SPORT, 2020).*"

To develop the process structure, I also illustrate the thought process of selecting a benchmark in the form of a diagram:

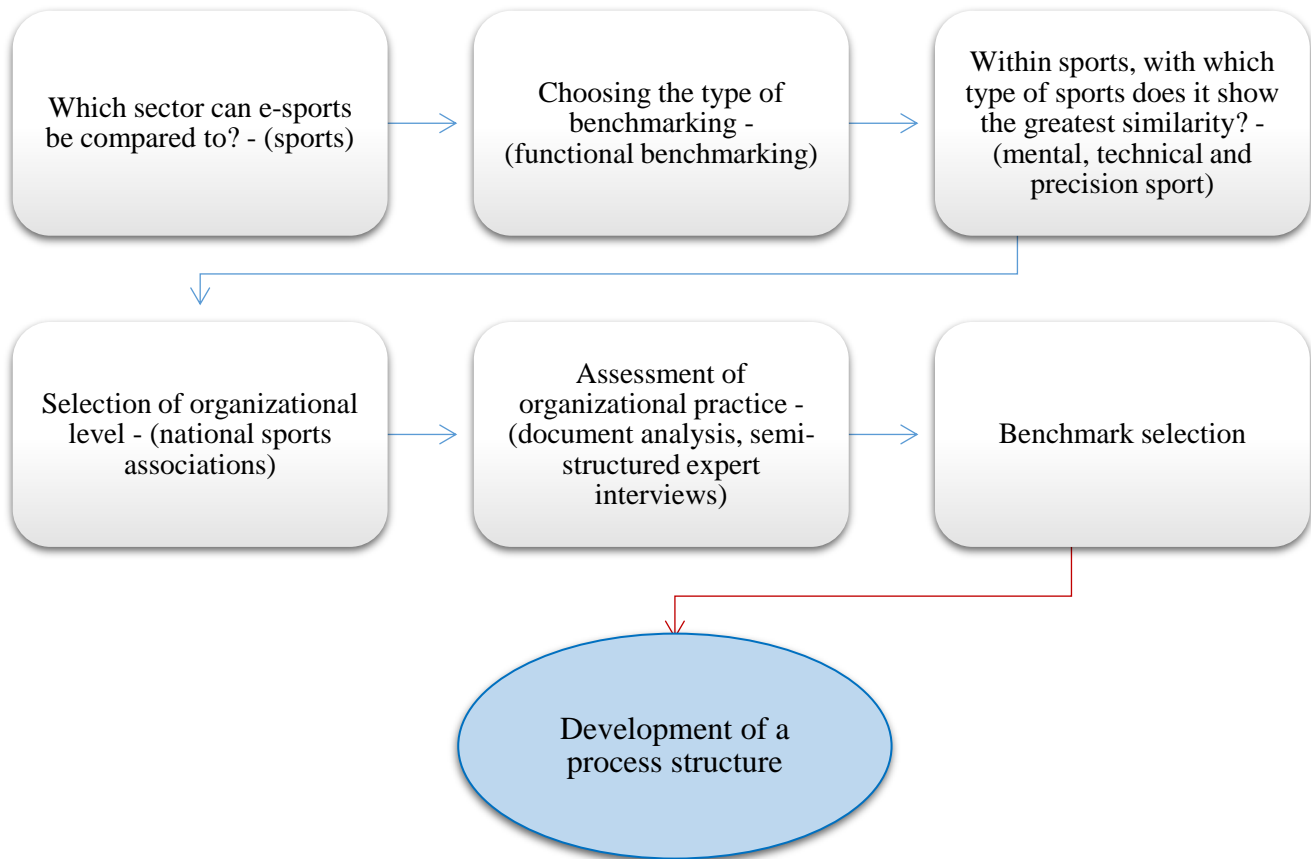


Figure 2: The process of choosing a benchmark for the development of the process structure

Source: Own editing

2.1.1. Document analysis

During the benchmarking, in addition to the Hungarian E-Sports Association, I assessed the organizational practices of the Hungarian Chess Association, the Hungarian Darts Federation, the Hungarian Shooting Federation and the Hungarian Modern Pentathlon Association. One of the methods of which was document analysis, during which the public documents of the associations (Organizational and Operational Rules, other regulations), as well as some non-secret but not available on the website documents, which were made available to me by the associations. I also used the results of the document analysis to prepare the questionnaire that served as the basis for the interviews with the Associations. Document analysis can be used for several purposes, on the one hand, it can facilitate the establishment of hypotheses in the informational phase of the research, but it is also suitable for collecting and analyzing various data and drawing conclusions in the main phase of the

research. Independently it can also be used as a method, but it can also relate to other research method/methods, such as experiments, questionnaires, observations or case studies (BONCZ, 2015).

2.1.2. Semi-structured expert interview

In addition to the document analysis discussed in the previous chapter, I assessed the organizational practices of the Hungarian E-Sports Association, the Hungarian Chess Association, the Hungarian Darts Federation, the Hungarian Shooting Federation and the Hungarian Modern Pentathlon Association not only by document analysis, but also by conducting semi-structured expert interviews. The semi-structured interview is a qualitative research method widely used in the social sciences (BARRICK, 2020) . This type of interview shows characteristics similar to both structured and unstructured interviews. In case of structured interviews, there are pre-formed questions that follow each other in a specific order. In the same way as unstructured interviews, it is possible to continue the important topics that arose during the current discourse, and this type of interview also requires more thorough preparation as an interviewer (MOLNÁR, 2010) . The open nature of the dialogue also encourages the participants to share ideas that are important to them and that the researcher did not expect (BARRICK, 2020) . I conducted the semi-structured expert interviews online and in person in April and May 2022. I conducted the interviews with the President of the Hungarian Esports Association, the General Secretary of the Hungarian Chess Association, the General Secretary of the Hungarian Shooting Federation, the President of the Hungarian Darts Federation and the General Secretary and Financial Manager of the Hungarian Modern Pentathlon Association. During the interviews, I tried to assess the organizational practices of the associations, paying special attention to the emerging processes, areas of expertise, functional areas and the activities related to them. The length of the interviews was between 1 hour 15 minutes and 1 hour 30 minutes. The course of the interviews was determined by the set of questions (guiding thread) that I compiled, but during the conversations we could deviate somewhat from this based on the answers I received from my interviewees to certain questions.

2.2. Questionnaire

In the questionnaire phase of my primary research, I conducted a questionnaire survey of satisfaction and needs of the domestic e-athletes, in the federal level questions concerning them in the months of May and June 2022. One of the most popular data collection techniques in social science research is the questionnaire survey, which is particularly suitable for examining people's attitudes (BABBIE, 2003). The purpose of my survey was to get feedback from the e-sport and domestic federation level about the opinion of the main stakeholders, and also to carry out a kind of satisfaction and needs survey, which reveals in which areas domestic e-sport needs to be strengthened. I conducted my questionnaire survey in a non-representative manner, so this limitation must be taken into account when interpreting the results. *The questionnaire contained a self-composed set of twenty-eight questions, the basis of which was the results obtained during the interviews and document analysis.* The questionnaire mostly contained closed questions, which included both multiple-choice and ten-point Likert format questions. When evaluating questions in the ten-point Likert format, I will take into account the average values above 5 and below 5, on the basis of which I determine that the assessment of a statement moves in a positive or negative direction. In the first round of the questionnaire survey, I directly visited domestic e-sport associations and divisions, but the willingness to fill in was quite low, so I tried to share the questionnaire in one of the social media groups that gather e-sports players, which resulted in a much higher number of completions and thus a -athletes who are not members of e-sports organizations were also included in the sample, thus I was able to assess the opinion of this segment as well. I analyzed the data from the questionnaire survey with the IBM SPSS Statistics program, during which I used descriptive statistical analyses, analysis hypothesis testing (independent two-sample *t*-test, analysis of variance, paired-sample *t*-test, Chi²test), dimensionality reduction procedure (principal component analysis) and cluster analysis. In order to make the questionnaire easier to process, I first coded the variables in a Microsoft Excel table, which I imported into the SPSS program later. In the case of descriptive statistics, I calculated mean, mode and median. A significance level (α) of 5% was determined during the analysis of deviations based on hypothesis testing - primarily parametric.

The results of the deviation analysis performed during the parametric procedures are considered significant if $p < 0.05$ (KÖVÉR et al., 2022) . I used an independent two-sample *t*-test if the group-forming variable consisted of two categories, an analysis of variance, even if it contained three or more categories.

The crosstab analysis is a widely used analysis method that examines the relationship between two or more variables and shows their combined frequency distribution (SAJTOS and MITEV, 2007).

The Chi ² test is a non-parametric statistical procedure that examines the existence of a relationship between two variables - at most ordinal measurement level - by examining a significant difference between an empirical and a theoretical frequency table. The theoretical frequency table shows the independence of the examined variables, therefore, if we identify a significant difference between the frequency tables, we can say that there is a correlation between the variables.

Principal component analysis is a dimensionality reduction procedure that reduces the number of examined variables through the detection of common correlations.

Two-step cluster analysis is a group/cluster formation technique that is extremely well-suited for large data sets and has a well-functioning algorithm for determining the number of clusters.

During the questionnaire survey, I worked with a sample of 200 items, the demographic composition of which is shown in No. 1 below. summarized in a table. According to ROSCOE (1975), statistical tests require a sample size of between 30 and 500. HAIR and his co-authors (2014) set this value at a minimum of 100. According to BABBIE and ROBERTS (2018), if the number of elements in the sample reaches the required minimum, further increasing the number of elements no longer has a decisive influence on the goodness of the examination of the association between the variables.

1. table: Demographic distribution of the sample (n=200)

Distribution of respondents by gender	Person	%
Female	12	6%
Male	188	94%
Distribution of respondents by age		
Under the age of 19	26	13%
Between 19-25 years	108	54%
Between 26-30 years	42	21%
Over 30 years	24	12%
Distribution of respondents based on their labour		
Student	111	55.5%
Employed/other labour market status	89	44.5%
Distribution of respondents by place of residence		
Capital	52	26%
County seat	53	26.5%
City	70	35%
Township, village	25	12.5%

Source: Own editing

94% of those who completed the survey were men, and in terms of age group, the largest part took part in the survey between the ages of 19 and 25, which clearly reflects that young men are mostly interested in the sector.

3. MAIN FINDINGS OF THE THESIS

3.1. Analysis of the e-sports ecosystem

I started my research with exploring the ecosystem of e-sports (*objective 1 /theoretical/, to which Q1 and Q2 are connected*). An ecosystem is an operational unit that includes actors that are highly interdependent and whose "destinies" are linked (JALONEN, 2019). I also analyzed several e-sports ecosystem models and representations found in the literature, which were approached by the researchers with different methods and were formed from different perspectives. The e-sport ecosystem includes game studios, leagues, teams and professional players (THATCHER et al., 2019), but the participants of the e-sport ecosystem are much more than that and this system is much more complex, as it will be seen in the following, but those defined by THATCHER et al. (2019) are the main components of this complex system. First SLIWA and KRZOS in 2020 The Model of eSports I will start with their published article entitled Ecosystems, in which they focused on the compilation of the stakeholders of e-sports. This study is based on what was written in SCHOLZ's 2019 book, who summarized the e-sports industry from the perspective of strategic management. The author used the approach of the path of interested parties (stakeholders) to identify and characterize the stakeholders of the e-sports sector, dividing them into two groups as suggested by DARNALL et al. (2010):

- primary stakeholders directly involved in the value chain: videogame developers, tournament organizers, professional players and teams, infrastructure providers and other service providers, community
- secondary stakeholders who have an indirect influence on the primary stakeholders: governing bodies, sports organizations, sponsors, the general public, investors, entrepreneurs, media (SCHOLZ, 2019).

In their study, VERA and TERRÓN (2019) approached the ecosystem analysis more flexibly due to the specific nature of the digital environment and e-sports and chose a network approach based on the central role of "users". The ecosystem they put together was divided into three levels (creation/production/release; transmission/distribution/access;

use/consumption/cooperation). Their conclusion is that the two main influences on the structure of the e-sports ecosystem are exerted by two existing industries, the video game industry and professional sports.

In 2020, Esports industry assessment, an ecosystem analysis was presented, which illustrates the most important actors, components of e-sports and the relationships between them. Game developers and publishers play an extremely important role in the ecosystem. This segment includes game development studios and publishers that create, acquire and distribute new games. Streaming platforms, one of the unique features of the industry, is to ensure that the game is not only for the people who play it, but also for the audience to follow. This makes watching eSports competitions not only possible in person, but also online, as these platforms broadcast events to a huge audience. The huge increase in e-sports viewership is partly due to the use of live streaming platforms. E-sports teams and players are organized similarly to other professional sports. Teams create their own brand, have their own uniforms, fans and sponsors. Some of the most successful players are celebrities, traveling the world and getting paid. The increased interest in eSports has resulted in the creation of leagues, tournaments, and other industry-related events. It can be observed that there is no uniform structure for all competitions. The leagues compete in different formats, in different games, each with its own competition rules. The ever-increasing viewership of eSports competitions has resulted in more investment and sponsorship from companies that see the opportunity to reach a large audience (ESPORTS INDUSTRY ASSESSMENT 2020).

In 2018, PwC, one of the country's leading business consulting firms, prepared a complex analysis of the e-sports market in Hungary and the V4s, the most important details of which are illustrated in *Figure 3 below*:

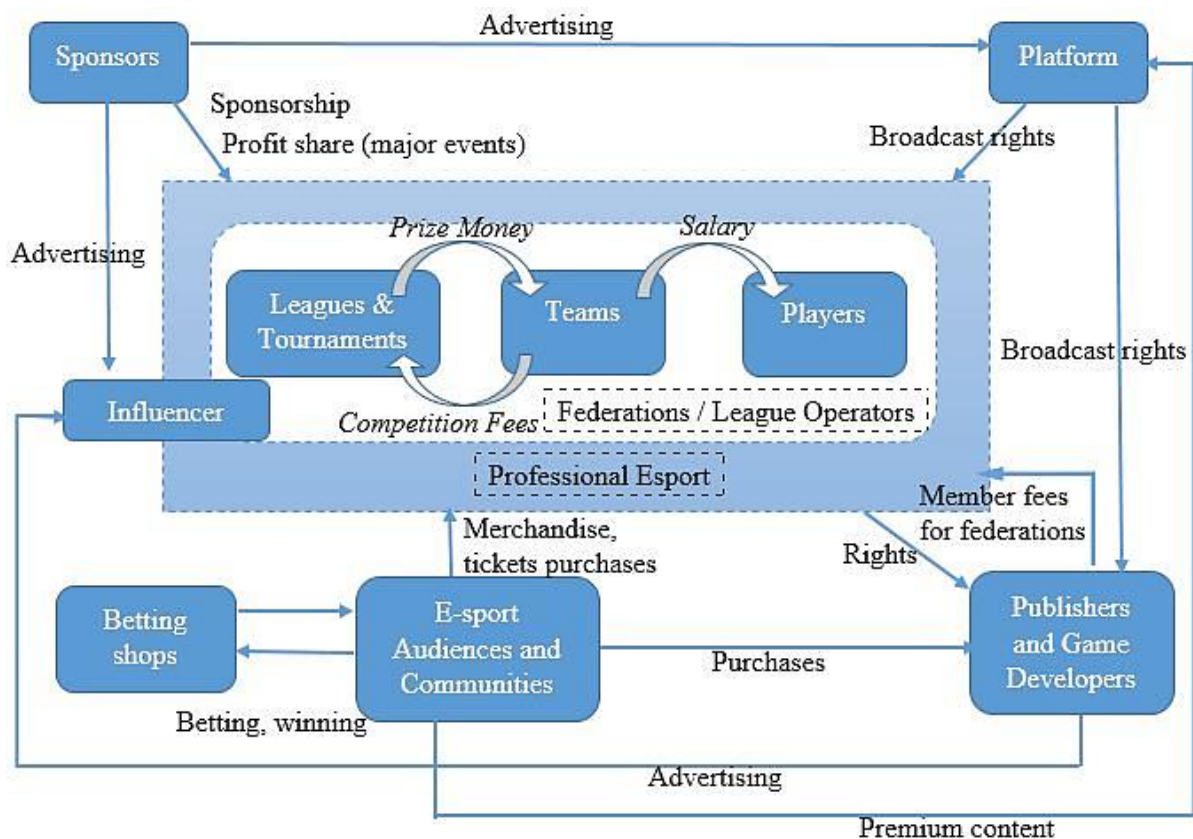


Figure 3: The ecosystem of e-sports

Source: Own editing based on PWC (2018).

With the ecosystem analysis, feedback was gained on the characteristic of e-sports that I already mentioned in the literature section, namely that it is not the international organizations/associations that play the most dominant role in the system, but the publishers. So, despite the fact that there are organizations on an international level that try to coordinate the world of e-sports (apart from publishers), their role can clearly be bypassed and dispensed with.

Answers to my research questions for the ecosystem analysis:

Thesis 1 (theoretical): Based on the ecosystem models revealed in the literature, the answer to my first research question is that the central actors of the e-sport ecosystem (**Q1**) are:

- players, teams
- videogame developers, publishers
- competition organizers
- sponsors
- audience

The main stakeholders are e-sports players.

In addition, based on the ecosystem models found in the literature and analyzed in the dissertation, it can be said that at least twenty-nine stakeholders can be identified based on the models together with the central actors.

Thesis 2 (theoretical): There is also an effort in e-sports to build a management model for official sports, as both national and international associations have been created to manage management issues, but the most influential players in the sector are, nevertheless, the publishers and game developers (Q2).

3.2. Assessment of the organizational practice of associations

In the next part of my research, I assessed the operational practices of some organizations in a sector similar to e-sports (*objective 2 /empirical/, to which Q3, Q4 and Q5 are connected*), with the aim of identifying, on the one hand, the operational differences between the national sports federations officially recognized as sports and the Hungarian E-Sport Association (HUNESZ), and how the processes appear in the organization. Of course, as I already discussed in the previous sections, e-sports is not currently considered a sport in Hungary, so it does not fall under the scope of the sports law, but there are countless similarities between them. My goal in this phase of my research was to select the one with the best practice among the associations participating in the research, based on which I could develop a process structure regarding the areas of operation of the national governing body of an officially recognized sport. In this chapter, I describe the answers to my research questions formulated for this stage of my research:

Thesis 3 (Q3: *Do the examined sports associations apply comprehensively, at a strategic level, the modern process management methods of business life?*): My most important goal for the development of the structure would have been to assess the defining processes of the federations, but I was not completely successful in this, because the characteristic is that the comprehensive application of process management methods is not so decisive in the operation of the investigated sports organizations, so the processes are not managed with process management methods, which made it difficult to explore the processes (of course, they can use process management techniques at the operational level). Some specific processes are available

I created it based on what is described in the regulations. Aware of this, I sought to explore the professional and functional areas and other areas of activity of the associations.

Thesis 4 (Q4: What processes, professional and functional areas, and other areas of activity can form the basis of the process structure model?): I was able to identify sixteen operational areas and areas of activity that formed the basis of the process structure model. This is of course not only true for the benchmark, but also for the other investigated sports associations, and for a significant part of them also appears in the Hungarian E-Sport Association. The sixteen operational areas are presented in *Figure 4*:



Figure 4: Identified specialist, functional areas and other areas of activity

Source: Own research

Thesis 5 (*Q5: What similarities and differences can be discovered in the organizational practices of traditional sports associations and a domestic e-sports association?*): The examined sports associations and several similarities can be discovered in the organizational operation of the Hungarian e-sports association, on the basis of which the associations of the sports branches can serve as a model for the e-sports association, so a process structure can be developed based on the existing practice, which can also be applied to the operation of the e-sports association.

Similarities between sports federations and e-sports federations:

- In terms of the organizational structure of the associations, the main decision-making and governing bodies appear, such as the general assembly and the presidency.
- The work of the presidency is supported by professional committees, and sports associations and the e-sports association also operate disciplines.
- Looking at the organizational structure, the general secretary's office is the only one that does not appear at e-sport, in the case of the other associations, this is the body that performs the operational tasks.
- The operation of the national teams and the organization of the competition championships appear as similarities, although a regularly/annually organized national e-sports championship has not yet fully developed in this country.
- Last year, HUNESZ (Hungarian E-sport Association) also launched a competition referee training program.
- The associations are closely connected with European and international associations.
- The formation of associations and sponsorship also appear as a common point.

Differences:

- Currently, the e-sports association does not place the same emphasis on youth development as, for example, the Shooting Federation or the Modern Pentathlon Association, among the sports associations, but it is listed as their future goal.
- To organize a major e-sports championship or competition, the consent of the publisher(s) is required, which can be considered a peculiarity of e-sports.
- Currently, there is no e-sports training program in this country, but they are striving to develop one.

- In order to participate in domestic e-sports competitions and championships, it is not necessary for the given e-athlete to be certified by an association or division player, so compared to sports associations, the e-sports association does not have such significant control and regulation in verification and transfer matters.
- There is also a difference in the regulatory environment, as e-sport does not currently fall under the scope of the Sports Act.
- In the case of sports associations, the members of the association are sports associations and sports enterprises, in the case of the e-sport association, although the members are primarily businesses that are not sports enterprises or sports associations, there are also members that can operate as sports associations.

3.3. Development of a process structure

During the semi-structured expert interviews with the leaders of the association, they could not report on specific organizational processes that would have been useful for the development of the structure. The reason for this is that the processes are not managed comprehensively with process management methods, at the system level, which does not preclude the use of certain techniques at the operational level. During the interviews, I consulted with presidents and general secretaries, who have an excellent overview of the operation of the given association, but it is not certain that they see into each and every activity, especially not at the level of implementation. I had the opportunity to detail the emerging processes of the associations based on the regulations, so I expanded some of the processes of the structure in more detail. By putting together the process structure, my goal (*3rd (main) objective*) is that an association in the formative stage, such as the Hungarian E-Sports Association in the case of my dissertation, can thereby obtain a sample for identifying their processes within the organization, so that, on the one hand, such area(s) on which they should place more emphasis in the future, and if the integration of e-sports into sports were to begin, they would be better prepared to adapt to the challenges of this environment.

I discussed above that, based on the document analysis and the data obtained during the interviews, I was able to identify a total of sixteen operational areas that appear in the organizational practice of sports associations. As the next step in creating the process

structure, the areas and activity groups shown in *Figure 4* I organized them into classes. The starting point for the classification into classes is formed by the association's operational areas considered the most important by the general secretary of the Hungarian Shooting Federation:

- the operation of the Hungarian national team at the adult and youth level alike,
- organization and organization of domestic championships at both adult and youth level,
- tasks related to international affairs,
- the internal operation of the association, i.e. the general secretary's office, as well as
- general assembly and presidency processes important from the point of view of management.

Based on the literature, the process structure model can be designed in several ways. I divided the model into process class, main process, and subprocess levels by adapting the basic structure of the IFUA process model, taking it as a starting point.

3.3.1. The operation of the Hungarian national team at the adult and youth level

To effectively coordinate an association this area, several components are necessary. The main superiors of this field are the national team captain and the junior national team captain, as professional leaders, but their main tasks must be submitted to the presidency for approval before they are implemented. The most important tasks in this category are *the selection and successful preparation of the selected athletes* for the most important world competitions, because the success of the operation of an association can be measured in the achieved results. *Recruitment is closely related* to these targets, in terms of having athletes of sufficient quality and quantity at the adult level. The work of the member associations plays a vital role in the composition of the national team, as does the appropriate professional training of the coaches.

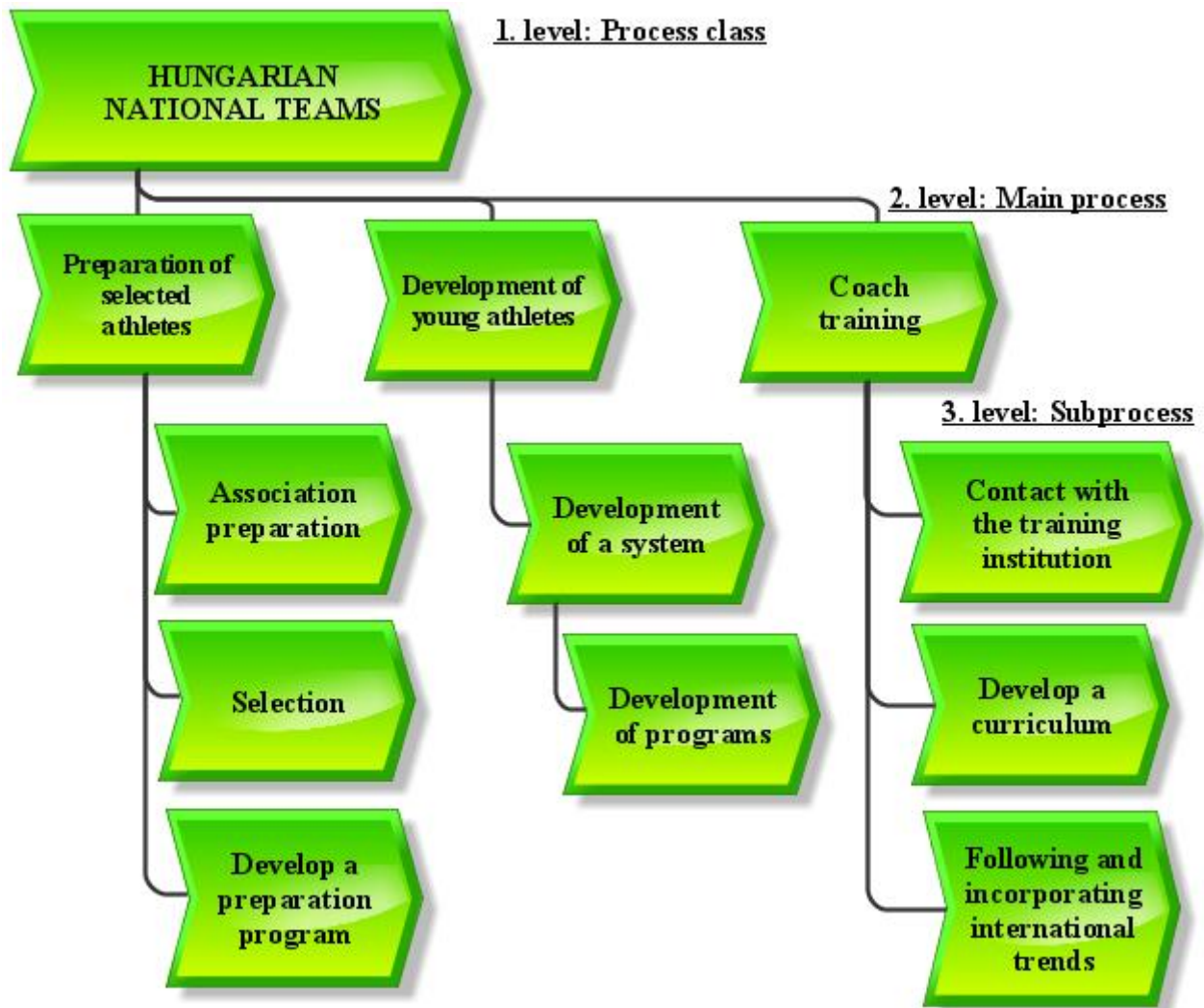


Figure 5: Structure of the Hungarian national team operation process department

Source: Own research

The central cooperation of the youth team is necessary so that the training of young people meets the goals of the association, so that as many talents as possible are in the forefront of the national team, who can effectively represent the country at world competitions, for which a concept needs to be developed. They run different programs for this, and on the other hand, trainings are held based on uniform principles, so that the young people are prepared based on the same training. The youth team also includes the selection of the squad members of the team, for which the basic principles are laid down by the youth team captain. The development of the competition program and the organization of training camps are important parts of the preparation program. In addition, it is also important to serve the athletes from a health point of view.

Actually, the main purpose of the operation of an association is to ensure the successful participation of the adult national team in international competitions. To achieve this goal, the work begins at the base of the association's organizational hierarchy, in the associations and the preparatory work carried out there. Regarding the selection of national team athletes, the selection principles are determined by the national team captain, the results achieved at the national championships are taken into account, selection competitions are organized, and it is also possible to get into the squad based on the recommendation of experts. The development of the national team's preparation program includes the coordinated development of the competition program and the organization of training camps, just like the youth national team.

For the successful operation of the activities appearing in the process class, it is essential to have *qualified trainers*. In order to receive the necessary preparation in association work and at youth or adult national team level, the training of professionals is vital, the compilation of which curriculum requires continuous monitoring by modern techniques and solutions, as well as continuous contact with the training institution is also required.

3.3.2. Organization and arrangement of championships

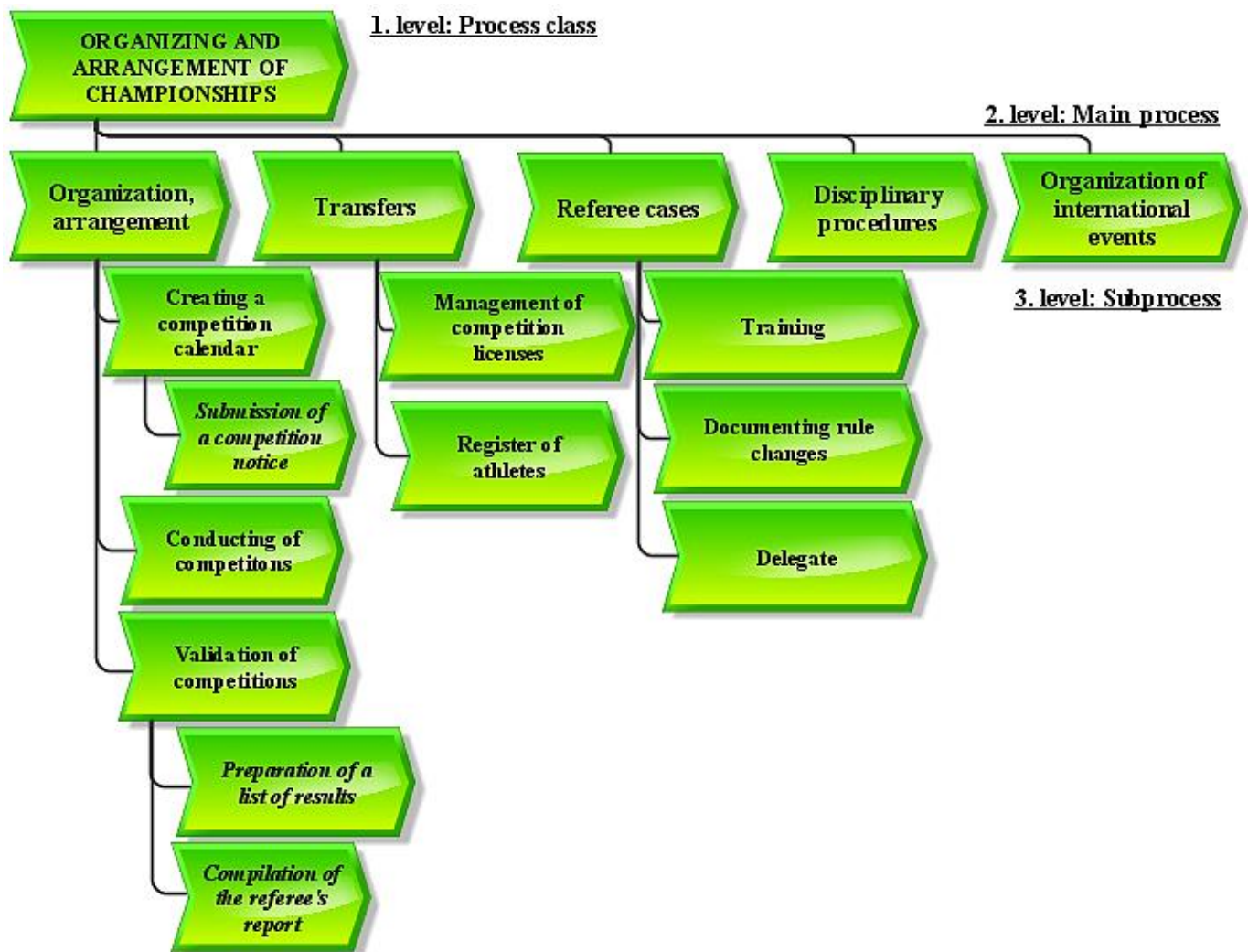


Figure 6: Structure of the process department for organizing championships and competitions

Source: Own research

The next important area of operation of an association is the organization of national championships and competitions, which determines the operation process of an association throughout the year. The main person in charge of this process department is the competition director, who is supervised by the general secretary who is in close contact with the committee performing the duties of competition judges. The timing of national championships and competitions is determined by the competition calendar, which ensures that there are no conflicts with domestic and international competitions. For this purpose, it is necessary that the intentions to organize the competition are sent to the association at a specified time, which, if the required requirements are met, will record it in its competition calendar. At the competition held, the judges meaning and a

list of results must also be sent to the association, which is an important process in the certification of competitions.

Verification and transfer processes of athletes in this process class. The association keeps a register of certified athletes, and the transfer process must also be handled through them. To participate in competitions, a competition license is required, which is subject to a sports doctor's license.

Qualified referees, whose training and further training is organized by the association itself, are indispensable for the orderly and clean conduct of federal championships and competitions. Competition referee cases are connected to the continuous monitoring of international rule changes and their transfer into domestic regulations.

The association must also pay special attention to the conduct of procedures related to *disciplinary offenses against members and athletes*. These procedures are necessary in case of violation of the disciplinary regulations, in order to ensure regular and clean racing.

The fifth main process of the process class is *the organization of international events*, which means the organization of the competition of the international or European federation (World Championship, European Championship), the central control of which is under the competence of the international or continental federation.

3.3.3. Office and operational processes

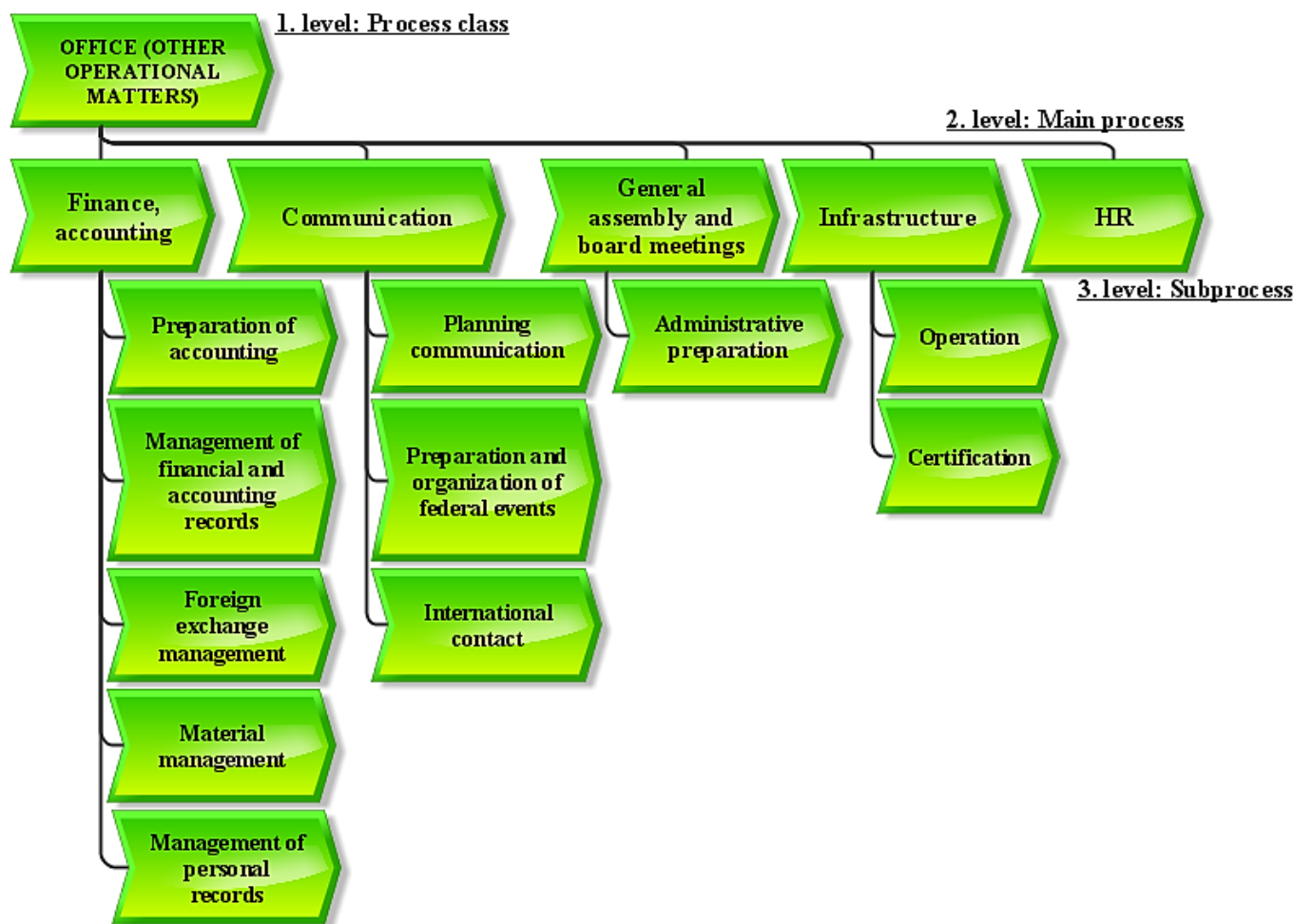


Figure 7: Department of office and operational processes

Source: Own research

The third process class contains other operational processes carried out in the organization of the association's office, for which the general secretary is primarily responsible. I defined five main processes for this process class:

- Finance, accounting
- Communication
- General assembly and board meetings
- Infrastructure
- Human Resource Management (HR)

Of these, the processes considered to be the most important are related to *finance and accounting*, the defining part of which are the processes affecting accounting, to which

the performance of necessary administrative tasks is extremely important, so that the accountant receives all the necessary information and data for his work. The report prepared by the accountant is subjected to an independent audit, which must be submitted to the board of directors and the general assembly for approval. This category also includes the preparation of payroll and tax returns, as well as the registration and verification of the use of state subsidies.

The other large group is formed by *communication* processes, which also includes international relations. The basis of communication activities is the compilation of the communication plan, which includes both internal and external communication. In order to reach an effective function in the day-to-day affairs within the association, the development of the internal information flow is vital, and the resolutions and decisions of the general assembly and the presidency must also be communicated to employees lower in the hierarchy. An association must ensure wide access to information about the sport. In case of external communication, this means communication with the media and other institutions. International communication is vital in the operation of the association, in which case the contact with international, European and other national associations takes place.

On the basis of the conducted interviews, it can also be concluded that in the examined associations there is no separate person *for the management of human resources*, and it is not really emphasized. The replacement of the association's office employees is the responsibility of the general secretary, and it is not possible to obtain information about HR processes based on the regulations.

3.3.4. Assembly, presidency

Last, but not least I discussed about the General Assembly and Presidency process class, but I did so precisely because of its importance due to the subprocesses that appear in this process class actually form the starting and ending points of the federal processes. The approvals, decisions, planning, organization and control processes created in this process department largely determine the operation of the other process departments, and the managers of certain areas report to the most responsible persons of this process department (general assembly, presidency).

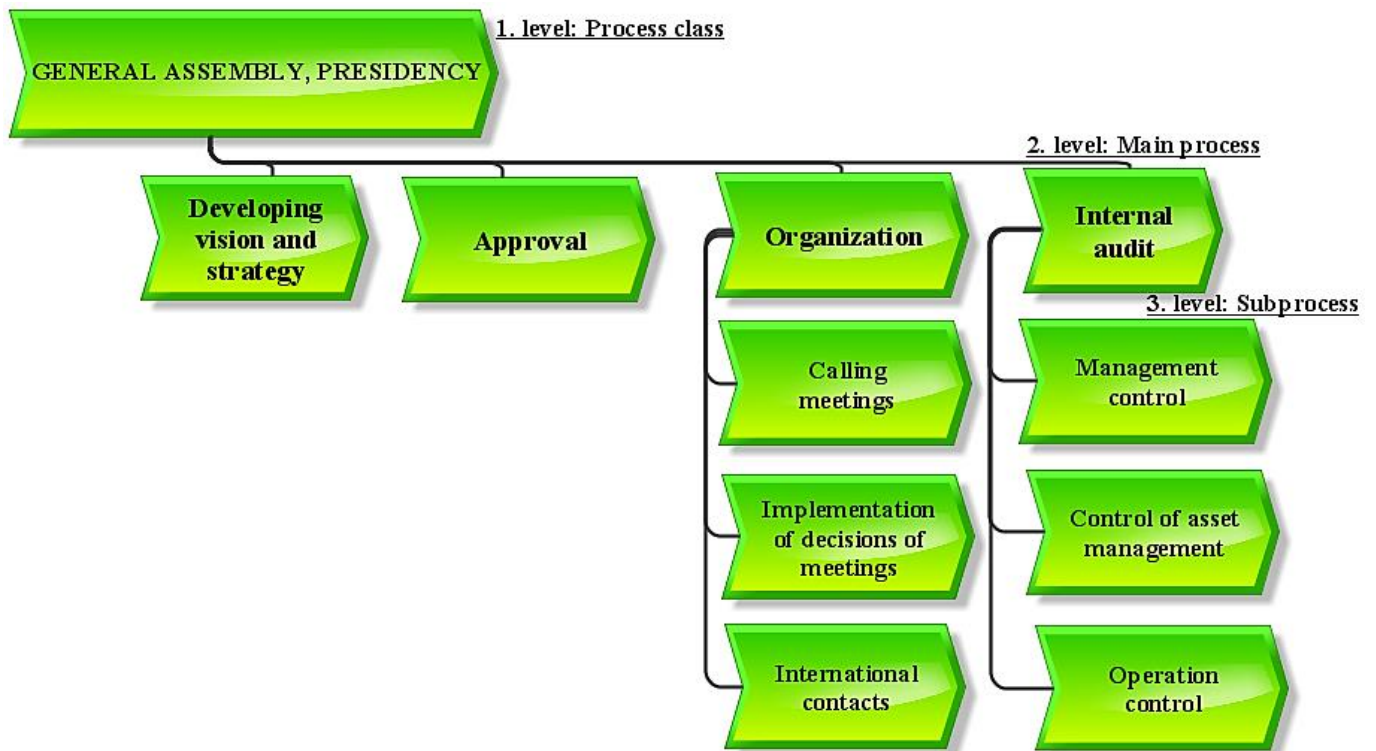


Figure 8: General assembly, presidency process department

Source: Own research

The first main process of the process department is the development of the *association's vision and strategy*, during which the guidelines and objectives that the organization wants to follow and achieve must be laid down. For this, it is necessary to determine where the association currently positions itself, both continentally and globally. The development of this process must be carried out at the highest level.

The power of *approval* covers several areas. The general assembly approves the report according to the Accounting Act, the financial plan, the statutes, the professional plan, the strategic development concept, etc. These approvals represent the final stage of a chain of activities by accepting the development and forming another chain that fulfills the provisions of these documents.

The administrative tasks required for bookkeeping take place in the office, which are forwarded to the accountant, who prepares them. The document then undergoes an audit, after which it can be distributed to the general meeting, whose task is to approve it.

In addition to the general meeting, the presidency also has numerous approval powers, for example: in the case of the national team preparation program, the competition calendar or the compilation of national team members participating in important events.

The basic *organizational* processes include the convening of general assembly and board meetings, which I have already detailed in the administrative preparations section. The implementation of decisions made at meetings is an essential process that affects all other process classes. When presenting the process classes above, it was observed that international relations appeared in all cases, the establishment and organization of which fall under the competence of the presidency.

The internal audit is part of the process class, during which the management, asset management and operation of the association are checked. In the event, in which the committee finds any irregularity, it informs the president about it. After that, the irregularity must be corrected, which will be checked again by the committee later. If the problem persists, they can initiate the convening of an extraordinary general meeting.

3.4. Results of a questionnaire survey

My aim with the questionnaire survey (*objective 4 /empirical/, to which Q6, Q7, Q8, Q9 and Q10 are related*) was to assess the opinions of e-athletes on federal and organizational issues that affect them and at the same time to get feedback from the domestic e-athletes. - regarding the areas to be developed in sports. My sample of 200 includes players who, based on their answers, used to play video games competitively. 59% of the participants in the survey are not members of e-sports associations or e-sports departments. In case of department or association members, 24%, i.e. 48 people, answered that they were certified e-sports players. 33.5% of the players who filled out the questionnaire had already participated in an e-sports competition organized by a domestic association, both online and offline. Also 33.5% are those who have not yet participated but would like to in the future. Those who completed the questionnaire mostly participated online in domestic federal competitions and 10%, i.e. 20 people, who stated that they had not yet participated, but did not plan to. Regarding foreign e-sports competitions, online participation is the most common, 5% of e-sports players stated that they have already participated in both online and offline competitions abroad.

The proportion of those who expressed the opinion that they have not yet participated in a foreign e-sports competition, but would like to in the future, is also quite high. More than half of the participants in the survey have not yet participated in this type of e-sports competition, but do not even plan to do so in the future.

Descriptive statistical analysis, analysis of variance (independent two-sample t -test, analysis of variance, paired-sample t -test), crosstab analysis, principal component analysis and cluster analysis were used to evaluate the obtained results. In the first round, I asked e-athletes training *in associations and divisions* about factors they encounter in such a sports organization. In relation to these factors, based on the feedback, it can be claimed that the average satisfaction ranged from 4.95 to 6.98, from which the conclusion can be drawn, that for several factors, the satisfaction was only slightly higher than the average, and this is also true for the aspects of competition management, where the average value ranged from 5.06 to 6.35. In case of sports organization members, I assessed whether there was a difference between those with a certificate and those without a certificate. The analysis showed that those with a certificate are significantly more satisfied for all factors. I considered the satisfaction survey of the conditions experienced in sports organizations to be important because the work done in the associations in a given sport or sport has a great influence on the quality level of the national teams and the youth team. I also illustrated the connection between them in the process structure model.

I also conducted a satisfaction survey in the *field of competition management*, because the examined domestic e-sports association mostly focuses on this field in its operations. This does not mean that the respondents formed an opinion only about competitions organized by HUNESZ, but in the case of competitions organized by a domestic association, that is, competitions organized by the highest level were considered. Here, I was not only interested in the values of an association, but also how this is experienced in the country. However, the important stipulation was that only competitions organized at the federal level were evaluated, those organized at a lower level were not taken into account. As I mentioned earlier, in my opinion, the evaluation of these competitions could be higher. The average values of the factors ranged from 5.06 to 6.35. One of the most important results of this part of the analysis was that there was a significant relationship for four competition assessment criteria, showing that these factors were significantly more dissatisfied with those who had

already participated in foreign-organized e-sports competitions. In addition, higher satisfaction was exhibited in all factors.

In the next part of the questionnaire survey, I will conduct a needs assessment in relation to areas that are not included in the model, but from the interview with the domestic and e-sports association, it became clear that these are still being developed or planned. I was curious about the need for the development and for the development of these areas. I defined five factors, the average value of which was over 7, almost around 8. One factor received a lower rating, indicating the importance of how important it is, that only certified players participate in e-sports tournaments.

In the last stage of the evaluation of the results of the questionnaire survey, I assessed and compared *the domestic situation and important factors from the point of view of development, based on the same criteria*. The analysis carried out showed a significant difference in terms of importance according to the aspect of the current domestic situation and development.

Summary of the answers to my research questions formulated for the questionnaire survey:

Thesis 6 (Q6: *Is there clear satisfaction or dissatisfaction among e-sports players, on average, with the conditions provided by the divisions and associations?*)

The participants of the survey evaluated the aspects using ten-point Likert format questions. The average values of the aspects ranged from 4.95 to 6.98, so it can be said that they are more satisfied with the formulated aspects than not, but it can be stated that an outstanding level of satisfaction was not experienced for any of the factors. The standard deviation ranged from 3.20 to 3.64, while the median ranged from 5.00 to 8.00.

Thesis 7 (Q7: *Is there a clear satisfaction or dissatisfaction among e-sports players, on average, with the specific aspects of organizing competitions?*)

In this case, the e-athletes are more satisfied than not (5.06-6.35) as well, but we cannot speak of outstanding satisfaction, similarly to the assessment of the conditions provided by the divisions and associations (standard deviation: 2.45-3.19, median: 5.00-7.00).

Thesis 8 (Q8: *Is there a difference in the aspects of competition organization between those who have already participated in a foreign e-sports competition and those who have not yet?*)

To show this, I used an independent two-sample t -test, the result of which was that the satisfaction for each factor was lower for those who already had experience in foreign competitions, from which it can be assumed that these competitors had better conditions during the organization of competitions abroad they could meet. In addition, a significant relationship was also demonstrated for four factors (rules system, competition clarity, activity of competition judges, performance, knowledge level of participating players).

Thesis 9 (Q9: *Is there a clear need, on average, for the following changes among the participants in the survey?*):

Q9.1.: To develop a coach training program?

Based on the average value obtained on the ten-point Likert scale (7.87) (standard deviation: 2.46, median: 8.00), e-athletes have a need to develop a training program, thus their professional preparation could receive more support. Furthermore, it was seen that when the players evaluated their own organization based on different aspects, the factor "coach(s)/professionals' contribution to my development" received a rather low rating (5.88), which reflects that it could be improved in this area.

Q9.2.: To develop a competition referee training program?

Based on the evaluations received, I also draw the conclusion that the athletes also claim this (average: 7.46, standard deviation: 2.22, median: 8.00). It is important for those interviewed, that competitions and championships are conducted by referees who are qualified. Here, I would also refer to the evaluation of the aspects of competition organization, where it could be seen that the activity of competition judges experienced at competitions received a relatively low rating (6.03).

Q9.3.: To develop a youth training development program?

It can also be established that the e-sports players participating in the survey have a need for the development of a youth training development program, thereby helping the development of e-sports (average: 7.62, standard deviation: 2.27, median: 8.00).

Thesis 10 (*Q10: Do the current domestic conditions of e-sports need improvement?*)

Based on the evaluations, the conclusion can be drawn clearly that the current situation needs to be improved, taking all aspects into account. Based on the results of the paired-sample *t*-test, there is a significant difference regarding the current situation of the aspects and their importance for development.

4. MAIN FINDINGS OF THE DISSERTATION, NEW AND NOVEL RESULTS

1) The assessment and comparison of the organizational practices of the domestic e-sports association and the domestic sports associations. There are countless similarities between e-sports and sports, and the appearance of electronic sports has been knocking on the door of the Olympics for years, but it is currently not an officially recognized sport. The similarities at the national level can serve as another cross-section between the two sectors, as well as the rapid catch-up needed in the challenges facing organizational/management maturity.

2) The identified operational areas of the associations. During the interviews with the sports associations and the analysis of their regulations, I identified a total of sixteen areas that appear in the practice of the organizations (sports associations), a significant part of which is also reflected in the operation of the e-sports association.

3) The strategic application of process management methods does not appear in the case of the investigated sports organizations (the processes are not managed at the system level with process management methods), despite the fact, that process-oriented organizational operation is widespread and proven in business practice.

4) Development of the process structure model. The developed process structure model is suitable for identification of the processes that appear within a sports association and for the usage as a management tool.

5) Areas to be developed at the level of the e-sports association compared to the sports associations. Based on the information obtained from interviews and questionnaires, such areas include the development of new players, the training of competition referees, the training of coaches, the establishment of national championships, and the regulation of certification/transfer matters.

6) My main findings during the questionnaire satisfaction and needs survey:

- assessment of the level of satisfaction with the conditions of e-sport associations and departments
- assessment of the level of satisfaction with competition management aspects

- needs assessment for coaching training program, referee training program, recruitment development program, health (physical and mental) program
- the assessment of the current and expected future situation of e-sports at the domestic level

Among my new and innovative results stated above, I consider the development of the process structure model defined in point 4 and the main findings made during the satisfaction and needs survey recorded in point 6 to be the most significant. The former represents a theoretical novelty and a starting point for later research, and the latter, as far as I know, provides empirical data that fills gaps in the field of domestic e-sports.

5. PRACTICAL APPLICABILITY OF THE RESULTS

- 1)** The developed process structure model is suitable for the identification of processes occurring within a sports association and its use as a management tool. After the processes have been explored and identified, the detailed modelling, analysis, and, if necessary, redesign and integration of the processes can follow.
- 2)** Expression of opinion on the part of e-sports players (satisfaction and needs survey), which is based on the experience of the literature analysis. This is one of the first to provide feedback of this kind regarding the domestic situation of e-sports to the relevant organizations (associations, divisions, federations).
- 3)** Based on the information obtained in the framework of benchmarking, I created the opportunity for the domestic e-sports association to apply what was experienced at the sports associations.
- 4)** The areas to be developed, discussed in the previous chapter, have emerged, on which it is recommended that the Hungarian e-sports association place more emphasis in the future (based on the information collected from the interviews, the development of these areas may be realized in the future).

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7. LIST OF PUBLICATIONS RELATED TO THE DISSERTATION



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Doctoral School: Károly Ihrig Doctoral School of Management and Business
MTMT ID: 10068107

List of publications related to the dissertation

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