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Sustainable Olympics

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Declaration of Authorship

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Prague, May 2018 Signature

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Abstract

It seems that the interest in hosting Olympic Games has declined in the last decade, mainly because of the reason that it costs too much in comparison with the gains generated for the host cities. Even the International Olympic Committee seems to be aware of this issue and has recently launched a concept with certain recommendations called the Olympic Agenda 2020. A brief history of the Olympics will be given, followed by relevant Olympic and financial definitions. In this thesis, the key analysis will be focused on the development of the most important characteristics of the Olympic Games, such as the NOCs, athletes and events. The main goal is to understand these developments and how they affect the economy of the Olympic Games. Furthermore, the situation today will be presented and compared with the recommendations suggested by the IOC, relevant for this thesis. Lastly, I will discuss my observations and present a vision for the future and for a sustainable direction of the Olympic Games.

Key words: Olympic Games, IOC, sustainability, development, costs, revenues, economy

JEL classification: Z20, Z23, A130

List of Abbreviations:

AD……Anno Domino

ASOIF……Association of Summer Olympic International Federations

BC……Before Christ

EC……Evaluation Commission

IAS……International Accounting Standard

IF……International Sports Federation

IOC……International Olympic Committee

IOC EB……International Olympic Committee Executive Board

NOC……National Olympic Committee

OCOG……Organising Committee for the Olympic Games

TOP……The Olympic Partners

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Introduction

This thesis focuses on the future of the Olympic Games and their sustainability in the years to come. With four out of six countries withdrawing during the last bidding process, the Olympic Movement has a challenge to motivate cities to apply for hosting the Olympic Games. News articles on this subject are focusing on the costs of the Olympics, but this dissertation will rather examine the revenues as far as it is possible and investigate to what degree the International Olympic Committee is supporting the host cities.

A brief history of the Olympic Games will be given, followed by a detailed analysis of the development of attending nations, competitors and arranged events of the Games. Furthermore, the increase of volunteers and media representatives will be shown for Olympic Games, where the data is obtainable. Because of the different size and history between Summer and Winter Games, they will be analysed separately. Chapter four will be focused on data collection, where the revenues of the IOC will be presented, as they redistribute their income to the Olympic Family, including the host cities. As costs are very hard to obtain, they will only be mentioned shortly. The following chapter about today's status will present the process of the Olympic Games and its effect on the economy of the Olympics.

Preuss states that "the organizers of the Olympic Games are facing the challenge of short existence while aiming to deliver the best possible and economically sound event" (Environmental sustainability and legacy of Olympic Games, 2016, p.27). This means that every city has to set up different plans on how to arrange the Olympic Games with their particular resources. The planning stage is unquestionably the longest in the life cycle of this mega project, which means that the excessive investments made to be able to start this project will first be repaid after a long time, upon a successful completion of the Games.

As I myself started volunteering during the FIS World Cups in Holmenkollen, bearing in mind that Oslo will apply for the Winter Olympics in 2026, I was very disappointed with their decision to withdraw. This was one of my core motivations – to examine the reasons behind and understand why so many cities withdraw their applications during the bidding process.

The main goal of this paper is to analyse the major factors influencing the size and economy of the Olympic Games. To accomplish that, I will study different variables such as the number of

events or attending athletes, for example. Another question I want to find the answer to how the Olympic Games gradually developed and how the situation is today. Lastly, as the title suggests, I would like to use my knowledge, gathered throughout the theoretical research, and suggest a sustainable direction for the future of the Olympics.

1 Brief history of the Olympic Games

This chapter shall provide a short overlook of the foundation of the Olympic Games and its course throughout history. The birthplace of the Olympic Games was in Ancient Greece, consequently that is where the description will begin. After a break of nearly 1 500 years before the Games were reborn in Paris, the history will continue under its new name Modern Games. A figure will sum up the differences and similarities between Ancient Games and Modern Games before the Summer and Winter Olympics development will end the chapter.

1.1 Ancient Olympic Games

The very first traces of the existence of Olympic Games were found in Ancient Greece, more specifically in Olympia, which was situated in the north-west Peloponnese, today known as southwest of Greece 776 BC. Most probably the Games began long before, but this is the earliest reliable date verified. The Games were named after their location Olympia, which had an important meaning for the Greeks and was rather a sanctuary, then a town or city. Olympia consisted of a sacred area, where the temples and alters were located, including the one to Zeus. Besides was a non-religious area, where most of the competitions took place as well as the training.

Actually, the Olympic Games were one of four so called Panhellenic Games. Undoubtedly the most famous Games were the Olympic Games, but they were also the oldest and most important.[1] Table number 1 displays the name of the games, when they originated, where they were held and to what god they were held in honour of.

Table 1: List of Panhellenic Games

Olympic Games	Pythian Games	Isthmian Games	Nemean Games
• 776 BC • Olympia • Zeus	• 582 BC • Delphi • Apollo	• 580 BC • Isthmus of Corinth • Poseidon	• 573 BC • Nemea • Zeus

Source: Own table based on The Olympic Museum

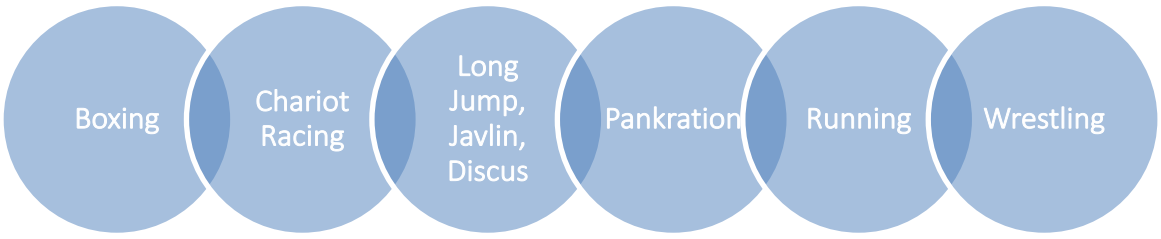
[1] OLYMPIC.ORG. *Welcome to Ancient Olympic Games.* [online]. [cit. 2018-02-06]. Available from: https://www.olympic.org/ancient-olympic-games

Each of the Panhellenic Games were held once during an Olympiad, which was a period of four years and Games were never held during the same year. All of them were of major religious significance. Zeus was the King of the Greek Gods, and the Olympic Games were held in his honour. A sacrifice with a number of cows was made for him during the festivities, more precisely on the middle day of the week-long Games, and the rest was given to the people.

In the second century AD, the Games had its peak of popularity with an estimation of over 40 000 people present. That is why painters, artists, orators and merchants would also make their appearance as this was the happing to be present at, according to Professor Paul Christensen of Ancient Greek History at Dartmouth, USA.[2] Women were only allowed to attend as spectators, if they were unmarried. Citizens of Greece and their colonies Italy, North Africa and Asia Minor would travel far to attend the Games for the shared feeling of belonging to the same religion or culture.

Merely men could compete, under the conditions that they were free men, with Greek origin or belonged to one of their colonies. Most commonly the participants came from wealthy families, not because they needed some special equipment, but since they would train for numerous months ahead of the Games and then spend the last four weeks before the beginning with the other athletes where the final selection was made. The original Games consisted of six different competitions, which are shown in figure 1 below.

Figure 1: Competitions in Ancient Olympic Games



Source: Own figure based on Olympic.org

[2] OLYMPIC.ORG. *Welcome to Ancient Olympic Games.* [online]. [cit. 2018-02-13]. Available from: https://www.olympic.org/ancient-olympic-games/history

At that time Greece was divided in city-states, which were politically and economically independent communities. These were constantly at war, so historically the Games were created to bring unity to the Hellenic world.[3] According to Professor Paul Christensen, "the classic example is when the Persians invaded Greece in the summer of 480 (BC) a lot of the Greek city states agreed that they would put together an allied army, but they had a very hard time getting one together because so many people wanted to go to the Olympics" (Welcome to the Ancient Olympics Games). A sacred truce was proclaimed during the Olympic Games, meaning that all wars had to be stopped throughout the Games, but also before and after in order to ensure a safe travel to and from the Games for both athletes and spectators. The era of Ancient Olympic Games ended with the Christian emperor Theodosius I in 393 AD, when he forbade the celebration of pagan cults, which included the Olympic Games.

1.2 Modern Olympic Games

During the 18th century, the Greeks tried to revive the Games with local athletic events in Athens, however without long lasting success.[4] Nevertheless, as Europe began their fascination with ancient Greek culture throughout the 18th and 19th century, some nations held unofficial Olympic Games.[5]

Although, it was not in Greece the long-lost tradition would arise again, it was in Paris, France. The teacher, visionary and journalist Pierre de Coubertin invited to a multinational sports conference on June 16th 1894, where he came with the proposal of a revival of the Games, that was accepted by all nine present countries.[6] He is therefore perceived as the founder of the Olympic Games, but also of the IOC as he founded the organization the same year to supervise the administration of the arrangements. Naturally, Pierre de Coubertin was elected unanimously as the President of the Committee, which he served as for 29 years before stepping down due to retirement. Moreover, they planned the first Modern Olympic Games to

[3] THE OLYMPIC MUSEUM EDUCATIONAL AND CULTURAL SERVICES. *The Olympic Games in Antiquity.* [online]. 3rd edition. 2013. [cit. 2018-02-15]. Available from: https://stillmed.olympic.org/media/Document%20Library/OlympicOrg/Documents/Document-Set-Teachers-The-Main-Olympic-Topics/The-Olympic-Games-in-Antiquity.pdf#_ga=2.199443178.556326758.1517912564-1579763047.1515411024
[4] SCHOLASTIC.COM *The history of the Olympic Games*. [online]. [cit. 2018-02-22]. Available from: https://www.scholastic.com/teachers/articles/teaching-content/history-olympic-games
[5] HISTORY.COM. *First modern Olympic Games.* [online]. [cit. 2018-02-22]. Available from: http://www.history.com/this-day-in-history/first-modern-olympic-games
[6] OLYMPIC MOVEMENT. *Olympic Review.* [online]. April-May-June Vol. XXVIII Iss.47. 2003. [cit. 2018-02-22]. Available from: https://library.olympic.org/Default/search.aspx?SC=CATALOGUE&QUERY=+olympic+review+2003++iss+47&QUERY_LABEL=#

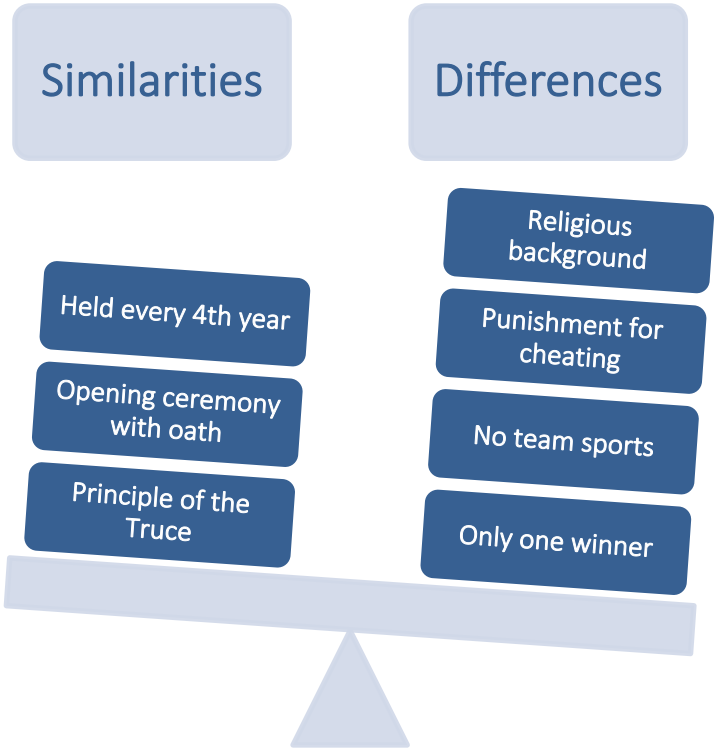
be held in Athens 2 years later, even though Pierre himself wanted to host it in France before he was persuaded by the other representatives.[7]

The year of 1896 came, and the first Modern Olympic Games were arranged in Athens, Greece. 14 nations participated with 241 male athletes, spread over 10 April days, competing in 43 sporting events.[8] As the foundation of the Modern Games was based on the traditions of the Ancient Games, there were some similarities found, however there were significant differences. At the initial sports conference in 1894, it was already decided that the Games should continue its ritual of the Olympiad, which meant for it to be held every fourth year, but on the other hand that it should be located in different countries and not in the same place as the Ancient Games used to be.[9] The most noteworthy difference, was that the Ancient Games were of religious reasons and victory was considered as an act of the gods, for whom the Games were held. While the Modern Games were like we know them today, they were celebrating the athletes behind the accomplishments. Unlike the Modern Games, there were no team sports, only individual contests in the Ancient Games. Also, unlike today's Games, the athletes were competing naked. Only competitors contesting in wrestling or pankration (a combination of boxing and wrestling), were covered in oil. They only awarded one winner, contrasting the Modern Games' podium with top three competitors in every sport event.

Nonetheless, both Games opened with a ceremony where an oath was presented, and they followed the principle of the truce. The newest Olympic Games in PyeongChang was a good example of this Olympic symbol of peace, as South Korea and North Korea were competing under the same flag.

[7] SCHOLASTIC.COM *The history of the Olympic Games.* [online]. [cit. 2018-02-22]. Available from: https://www.scholastic.com/teachers/articles/teaching-content/history-olympic-games
[8] OLYMPIC.ORG. *Athens 1896.* [online]. [cit. 2018-02-13]. Available from: https://www.olympic.org/athens-1896
[9] HISTORYONTHENET.COM. *The Olympics – Pierre de Coubertin.* [online]. [cit. 2018-02-22]. Available from: https://www.historyonthenet.com/the-olympics-pierre-de-coubertin

Figure 2: Similarities and differences between Ancient and Modern Games



Source: Own figure based on Olympic.org

1.3 Summer and Winter Olympics

From the Olympic Games were reborn in 1896, they have been held accordingly to the schedule throughout the 20th century, without the exceptions due to the World Wars. The first interruption came in 1916 because of World War I, while the Games in 1940 and 1944 were cancelled due to the second World War. As two Olympic Games were cancelled in a row due to the second World War, there was a 12y break from the Summer Games in 1936 to the 1948 Winter Games in St. Moritz. This break gave them the unofficial name “Games of Renewal”, being the first Games after the second World War.

For decades the IOC only arranged Summer Olympics, until they in 1921 decided to host a week of winter sports together with the French National Olympic Committee, who helped with the organization and funding. It was called the "Winter Sports Week" and it was held in Chamonix France, the same year they were scheduled to host Summer Games in Paris.[10]

Retrospectively, in 1926 at the 25th session of the IOC they gave the Games in Chamonix the recognition of the first Winter Olympic Games in the history, according to the Olympics official record of the event. The Winter Games started out in the same countries as the Summer Games, meaning that when nations were granted to host Summer Olympics they automatically hosted Winter Olympics also, with the exception of the Games in 1928. This was the case until the second World War.

Both the Winter and the Summer Games were from the beginning of the Winter Games regularly held in the same year. But because of the increase in size in the matter of spectators, nations, athletes and events, of both Games, the Winter Games were shifted to another timetable after 1992, resulting in the next Winter Games already happening in 1994.[11] The new schedule of the Olympic Games would keep the tradition of the Ancient Games to be conducted every four years, and have two years between Summer and Winter Games, the way we know it today.

During the course of the Games, there have been several firsts that have led to the Games we recognize today. Many traditions developed under the first Ancient Games, while other along the way as the Modern Games developed in size and importance. The evolvement of society has affected the business of the Games, which will be described in more details throughout the paper.

[10] OLYMPIC.ORG. *Birth of the Winter Games.* [online]. [cit. 2018-02-23]. Available from: https://www.olympic.org/news/birth-of-the-olympic-winter-games
[11] SCHOLASTIC.COM. *The history of the Olympic Games*. [online]. [cit. 2018-02-22]. Available from: https://www.scholastic.com/teachers/articles/teaching-content/history-olympic-games

2 Relevant definitions

In the first chapter, the history of the Olympic Games was presented, so next it is suitable to introduce and explain the definitions that will be used in the continuation of this paper. As the title is Sustainable Olympics, the first word to be explored is sustainability and its meaning in this paper. Later, the chapter will explain singular Olympic words that will be followed by the clarification of the differences between sport, discipline and event. Furthermore, some financial terms will be presented that are relevant for this paper, such as revenues and costs.

2.1 Sustainability

Sustainability is an attribute that has gotten more focus and attention the last two decades, than ever before, on both national and international level. It has become a part of visions not only in environmental issues, but also in politics and corporate life. When first introduced internationally in 1987 by previous prime minister of Norway and the Chairman of the World Commission on Environment and Development, Brundtland referred to it as sustainable development. Nowadays, it has been shortened to sustainability. She introduced it in the Commission report Our Common Future for the United Nations, where she stated that "humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own" (Our Common Future, 1987, p.16,). This definition is highly relevant for this thesis, as it will try to come up with a sustainable direction for future Olympics, based on an analysis of the most important aspects of the Summer and Winter Games. With today's low application numbers, someone could argue that the act of previous generations has caused misbelief and unwillingness to host future Olympic Games.

Later, Brundtland continues "sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are made consistent with future as well as present needs" (Our Common Future, 1987, p.17). The Olympic Movement has already started a process of change towards sustainability with the action of the Olympic Agenda, but as Brundtland clarifies, it is also about the direction of the investments

of the future host cities and the institutional change of IOC with regards to future behaviour and usage of resources.

Some 20 years later, the Organisational Committee of the Vancouver Winter Games in 2010 were the first to commit to hosting the world's first sustainable Games. By making this commitment, they pledged to respect the British Columbia's natural heritage and the First Nations sensitivities on their land, making it the most ambitious promise in Olympic history according to Holden, MacKenzie and Vanwynsberghe (2008). They included sustainability in both their vision and mission, as well as having it as one of their five values.

Preuss (2016) mentioned in his work that the next Games in line, Summer Olympics in London 2012 were the first to incorporate sustainable design into all processes, from planning to construction through fundraising. In 2005, they won the bidding round to host the 2012 Summer Games with the motto "One Planet Olympics", highlighting local and international sustainability. Unfortunately, the Games held since have not been associated with sustainability, and therefore it is important that the institutional changes Brundtland presented, are in focus at the Olympic Movement. It falls under their responsibility to spread the sustainable focus out to future bid cities, so they can incorporate it from their early stages of planning their sustainable Olympics.

2.2 Olympic definitions

To be able to understand what the Olympic Games are perceived as today, how they are managed and structured, the next part will provide some relevant definitions to bring some clarification about the Olympic Organization and what they do.

2.2.1 Olympic Games

In every part of the world, most people have heard about the Olympic Games, watched it on TV or even visited a host city during the Olympic Games. A fitting definition of the Games was made by Chalkey and Essex (1999), who described the Olympic Games as the world's most prestigious sporting event, that has been held for over one hundred years with significant consequences for the host cities.

2.2.1.1 Paralympic Games

Nowadays, as a part of hosting the Olympic Games the city automatically also arranges the Paralympic Games in short time after the closing ceremony of the Olympic Games. These Games originally started up after the second World War as Stoke Mandeville Games for war veterans and civilians who had been injured. Later, in 1960 in Rome, the Games were officially known as Paralympic Games for athletes with an impairment and were held every Summer Olympiad since. As with the Olympic Games, the Winter Games came a little later, and began in 1976 in Sweden.[12] For the continuation of this thesis, only the Olympic Games will be analysed, without consideration of the Paralympic Games as they are much smaller in size in all aspects, and don't share the same timeline in history as the Olympic Games. Additionally, the Paralympic Games has their own requirements from the IOC, like for example requirements related to Paralympic family services which influences irrelevant costs for this paper.

2.2.1.2. Youth Olympic Games

In 2010, a new type of Olympic Games was held for the first time. In Singapore, the first Summer Youth Olympics took place for young elite athletes between the age of 15 -18, from all parts of the world. Exactly like the Olympic Games, they are scheduled every four years and are divided into Summer and Winter Games. The duration of the Youth Olympics is similar to the Olympics, but in addition to sports they have activities and workshops to enhance non-sport skills and values, like social responsibility. From the sporting side of view, there are mostly the same events as in the Olympic Games, plus some new.[13] Also these Games will not be studied as a part of the Olympic Games in this paper, as it is organised in different cities and at a different time then the actual Olympic Games. Most importantly, they are of a much smaller scale and have other requirements and bidding processes than the Olympic Games and is therefore not comparable.

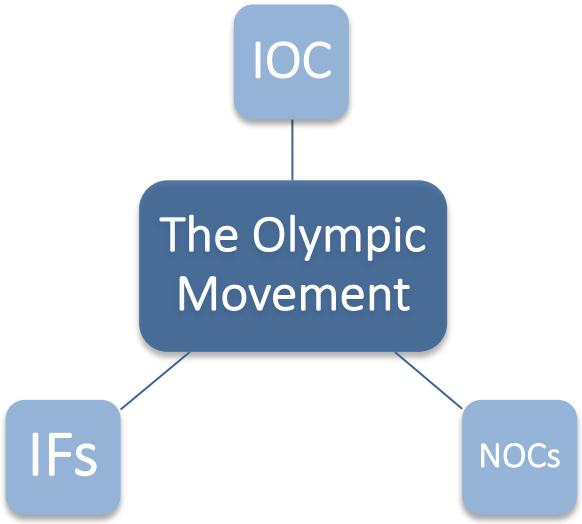
[12] PARALYMPIC.ORG. *Paralympics – History of the Movement.* [online]. [cit. 2018-04-06]. Available from: https://www.paralympic.org/the-ipc/history-of-the-movement

[13] OLYMPIC.ORG. *What is YOG?* [online]. 2009. [cit. 2018-04-06]. Available from: https://www.olympic.org/news/what-is-yog

2.2.2 Olympic Movement

The Olympic Movement is in charge of organizing the Olympic Games and creating an international movement. Since June 23rd 1894, 2 years before having their first modern Olympic Games in Athens, they have been in charge of arranging the Games. The known five coloured interlaced rings, that represent the union of the five continents, are the symbol of the Olympic Movement. This symbol is used with a white background as the Olympic flag, which was presented by Pierre de Coubertin in Paris, France in 1914. Organizations, athletes and additional persons who agree to be guided by the principles of the Olympic Charter and who are inspired by the values of Olympism, is what all together makes the Olympic Movement. Additionally, the Olympic Movement includes other organisations and institutions recognised by the IOC, such as the Organising Committees of the Olympic Games (OCOGs). The goal of the Olympic Movement is to contribute to building a peaceful and better world by educating youth through sport practised without discrimination of any kind, in a spirit of friendship, solidarity and fair play.[14] It is divided into three main components, as seen in the figure below.

Figure 3: Overview of The Olympic Movement



Source: Own figure based on www.olympic.org

[14] OLYMPIC.ORG. *The organization*. [online]. [cit. 2018-01-11]. Available from: https://www.olympic.org/about-ioc-institution

IFs stand for International Federations, which has the responsibility to run and oversee the daily basis operation of various sport disciplines across the world at every level. On the other hand, NOCs stand for National Olympic Committees, who promotes, develops and protects the Olympic Movement at a national level. The IOC will be described in more detail because of its importance in the next subchapter.

2.2.3 International Olympic Committee

The International Olympic Committee (IOC) is the leading group, most often called the supreme authority of the Olympic Movement. They are the connecting link between all members of the Olympic family, meaning all committees, organisations, federations and associations recognised by the IOC, and athletes, partners and United Nations agencies. They coordinate a wide range of projects and programmes and based on this they guarantee regular celebrations of the Games, which according to the Olympic Charter fall under their responsibility. Furthermore, they support all other member organisations of the Olympic Movement.[15] IOC is the most known body of the Olympic Family, which is often represented by the President or Vice President. Today it is led by the former German Olympic fencer, Thomas Bach, who has been President of the organ since 2013.

As goes for corporate information, they are a non-governmental, non-profit organization which owns all rights connected to the Olympic Games.[16] This means that the IOC receives all revenues from broadcasting, ticketing, sponsorships, merchandising and marketing, which will be described in more detail in chapter 4 - Data-collection. Their headquarters is in Lausanne, Switzerland, also known as a "Tax Haven" in financial circuits because of its beneficial tax rules. The IOC is formed by its members, who are natural persons and has to be qualified according to rule 16, of the Olympic Charter, where it is also mentioned that there is a maximum of 115 members. The members are chosen by the IOC Members Election Commission.

[15] OLYMPIC.ORG. *What do we do?* [online]. [cit. 2018-01-11]. Available from: https://www.olympic.org/the-ioc/what-we-do
[16] BLOOMBERG. *Company Overview of International Olympic Committee.* [online]. [cit. 2018-04-08]. Available from: https://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=5363066

Moreover, there were two milestones that significantly changed the financing aspect of the IOC. Until 1971, the organization was lead without any specific financial plan, and with a desire to avoid blending sports and commercial interest. Therefore, the NOCs and host cities were forced to borrow money to finance their Olympic activities, which lead to a debt of 1,5 million US dollars by 1971 for the IOC.[17] The push for a change came from Spanish Juan Antonio Samaranch, President of the IOC from 1980-2001.

The two milestones accomplished were:

- A change of rights of the revenues from broadcasting in the Olympic Charter, with effect from the Summer Games in Munich in 1972
- The invention of the Marketing program TOP in 1985

These milestones will be further described in more detail in chapter 4: Data-collection.

2.2.4 Olympic Charter

The Olympic Charter is a set of rules and guidelines for all parties of the Olympic Movement. It includes bye-laws adopted by the IOC and is an Official IOC Document that was first published in 1908, written by the founder of the Modern Olympic Games, Pierre de Coubertin.[18] The Olympic Charter has many versions, as it gets updated with time, where the latest version was effective from September 2017.

2.2.5 The Olympic Partner Programme

The TOP Programme consists of worldwide companies who buy rights to exclusively use the Olympic Games and its logo in their marketing. In other words, they support the Games thru their commercial partnership. Who they are, and when they joined the Programme which was invented in 1985, will be disclosed in more detail in chapter 4: Data-collection.

[17] MUSIL, PETR. *Olympic preparations funding principles.* [online]. 2007. [cit. 2018-04-09]. Available from: https://dspace.tul.cz/bitstream/handle/15240/1174/bc_13652.pdf?sequence=1
[18] OLYMPIC.ORG. *Olympic Charter.* [online]. [cit. 2018-04-09] Available from: https://www.olympic.org/documents/olympic-charter

2.2.6 Olympic Agenda 2020

In December 2014, on the 127th IOC session the members decided on 40 recommendations that were supposed to work as a strategic roadmap to ensure the future of the Olympic Movement. 14 working groups were put together to come with three recommendations each on how to improve their respective area. The public were invited to the process and contributed with 1 200 ideas. Ultimately, the Agenda ended up with three main centres of attention, which were:

- Creditability
- Sustainability
- Youth

All centres of attention could also be looked at as popular issues discussed in media. The President of the IOC, Thomas Bach said himself "we will strengthen our good governance, transparency and ethics" (Olympic Agenda 2020, 2014, p.4) in his speech during the launch of the Agenda. This desire was probably connected to the fact that the IOC had been connected to corruption in the past and did not have the best reputation around the world. In fact, when Oslo withdrew their application for the Olympics in 2022, it was mainly because of the disbelief with the organization. Newspapers were filled with negative headlines regarding the IOC, listing their requirements and quoting Norwegian politicians who were expressing their scepticism with the organization. After the government voted no to support the bidding process any further, there was a questionnaire the next day in the most read newspaper in Norway, Verdens Gang, whether that was a good decision. Out of 33 886 votes, 98 % voted that it was a good decision. The next question was "if yes, why?" where 51 % voted "because of the IOC".[19] So, when even the most winning country in Winter Olympics refused to bid for the Winter Games again, despite loving it probably more than anywhere else in the world, actually being the origin of the ski sport, the future of the Winter Games could be at risk. Therefore, in the sake of the future of the Olympic Games the IOC at this point certainly needed to work on regaining their creditability in the people and governments around the world.

[19] BERGLUND, EIRIK LINAKER and BONDØ, TOR-HARTVIG and STRØM, OLE KRISTIAN. *Har brukt nær 280 millioner på OL-søknader.* [online]. 2014. Verdens Gang (VG). [cit. 2018-04-12]. Available from: https://www.vg.no/nyheter/innenriks/ol-2022/har-brukt-naer-280-millioner-paa-ol-soeknader/a/23307078/

Sustainability was the second centre of attention and was just as important. Again, the newspapers had been full of articles about the enormous stadiums that are left after the Games. Especially, this "Olympic legacy" that is left after the Games does not leave a good name for the way the Games are organized. In the last completed Winter Games in PyeongChang, the Organizing Committee built seven new sport facilities and remodelled seven for the occasion, making it a total of fourteen gigantic stadiums. A minimum of four of these were built with the thought that they would be torn down after the Paralympics. In spite of the fact that the Korean Organizing Committee tried to keep the costs down, the South Korean province is bound to spend 14,5 million US dollar yearly to maintain these abandoned competition venues. The Olympic stadium was built for the Games in PyeongChang, where the Opening and Closing Ceremony was held for the Olympic and Paralympic Games. It took 2 years to build those 35 000 seats, and 100 million US dollars to realize the stadium. If the state would want to preserve the stadium, it would cost them roughly 7 million US dollars yearly. Therefore, they have come to the conclusion of tearing the stadium down in order to "save" these yearly costs. That means that during the four times they actually used the stadium, it cost 10 million US dollars per hour.[20] This situation is what often is called the "white elephants" of the Olympics and this information is what scares off possible future host cities and builds scepticism in national governments, at the same time as it narrows down the number of possible host cities as many countries do not have the economy to undergo such a mega project.

The last centre of attention, youth, probably has the smallest significance. It has the least attention and is mostly about the Youth Olympics and the special values-based education programmes for communities around the world. In his speech, Thomas Bach also mentioned that "We have an interest and a responsibility to get the couch potatoes off the couch. Only children playing sport can be future athletes. Only children playing sport can enjoy the educational and health values of sport" (Olympic Agenda 2020, 2014, p.5), which is important, but not that relevant for this paper.

[20] AUGUST, RICK. *White Elephants in PyeongChang: The Good, The Bad, And The Ugly Of Korea's Olympic Infrastructure.* [online]. 2018. Forbes. [cit. 2018-04-12]. Available from: https://www.forbes.com/sites/augustrick/2018/02/26/white-elephants-in-pyeongchang-the-good-the-bad-and-the-ugly-of-koreas-olympic-infrastructure/#74dd289757bc

In September 2017, the IOC published a midway report that went through the 40 recommendations and how far they have gotten in realizing them. This report will be discussed more later in the paper, under chapter 5: Status today.

2.3 Sport, discipline and event

Chapter 3 of this thesis will present the development of the Games throughout its history, where the expansion in number of events is a clear indicator of the increase of the size of the Games over the decades. It is also important to mention that the quality required by all parties regarding the events is now much higher, so the investments consequently are higher than back in the old days. In other words, it is not necessarily only because of the growth in events, but also because of this increase in quality. The level of quality expected, no matter the changes in number of sports, disciplines and events, drives the costs for the host cities up in order to meet these expectations.

However, it is important to point out that there is a significant difference if there is an increase of events within sports that already have competition venues and infrastructure ready, or if there is an increase in sports that demands more equipment and new investments. Therefore, it is important to distinguish what is a sport, discipline and an event. According to the Olympic Charter, Chapter 5, Rule 45, in order for a sport to be qualified as an Olympic Sport it has to be governed by an International Federation recognized by the IOC and comply with the World Anti-Doping Code. Within each Olympic sport, you can have one or more disciplines. And again, within each discipline you can have one or more competitions known as events. One example can be that skiing is a sport, where cross country is a discipline and 10km for ladies is an event. For a competition to be acknowledged as an event it has to give rise to a ranking where based on the rank the top three athletes will be rewarded with medals and diplomas, states the Olympic Charter. The Olympic Charter only defines a sport and an event, which is why this paper only will work with these terms. Moreover, it is the IOC who determines which sports the Olympic program consists off, and they have the right to eliminate sport, disciplines and events from the schedule.

2.4 Financial definitions

As this paper has a financial point of view on the Olympic Games, some relevant financial terms have to be presented and defined. Chapter 5 will evaluate the economy of the Games and the life cycle of the Games, so therefore some relevant expressions like mega projects, revenues and costs, will be described.

2.4.1 Mega projects

The Olympic Games are often referred to as a mega sports event, so therefore the term mega project will be defined to clarify if the Games will be studied as a mega event in this paper.

Flyvbjerg (2014) defines mega projects as:

- large-scale, complex ventures
- typically cost a billion dollars or more
- take many years to develop and build
- involve multiple public and private stakeholders
- are transformational
- impact millions of people

Since the Olympic Games are planned for almost a decade, to organise a hundred events for thousands of athletes over a two-week period (in the case of the Winter Games, which are smaller than Summer Games), it is safe to say it is a large-scale, complex project that take many years to develop and build. The costs are usually estimated to be around 8.9 billion USD on average, stated by Flyvbjerg, Stewart and Budzier (2016) in their working paper Cost and Cost Overrun at the Games. It is well known that the Olympic Games have both public and private stakeholders, with the government and taxpayers on one side, and sponsors and broadcasters on the other.

Moreover, for the millions of people who either live, work or have an interest within the host city, the hosting will have an impact on them as it attracts athletes, coaches, volunteers, media representatives, spectators, IOC and NOC members, tourists and family and friends of the athletes, who all need a place to stay. The athletes also need a place to compete, receive medals, have press conferences and to train. They will invade the host city for the duration of the Games, and in the years ahead the city will need to prepare with infrastructure, security, accommodation, transportation, food and beverage, medical teams and other needed services.

However, even though the IOC does not operate with transformational management, all of the other characteristics are fitting, making the Olympics a mega project according to Flyvbjerg's definition.

2.4.2 Revenues

How the IOC and the OCOG generate money, will be discussed later in the paper. For that reason, the expression revenue will be defined. The IOC follows the International Financial Reporting Standards, so therefore the definition will be used from the International Accounting Standard 18 on "Revenue recognition". According to IAS 18, "revenue is the gross inflow of economic benefits during the period arising in the course of the ordinary activities of an entity when those inflows results in increases in equity, other than increases relating to contributions from equity participants" (International Accounting Standard 18, 1982).

For the IOC, the period arising in the course of the ordinary activities is set to four years, also known as one Olympiad. According to the annual report of the IOC, they recognise the royalties from licensing of television rights upon the successful completion of the respective Olympic Games. Instalments that are received before this date, are deferred as they may be repayable, either in whole or in part. Furthermore, the revenues from the TOP programme are partly received in cash, and partly in the form of goods or services (Value in Kind). Value in Kind is recognised on a linear basis during the period of the contract and in the year of the Games. They are recorded based on their underlying fair value, which the IOC Annual Report explain they consider as the estimated market price obtainable between knowledgeable, willing parties in an arm's length transaction. Regarding other rights and revenues for the IOC, such as rights from the commercial exploitation of the Olympic symbol and income from other sponsorships,

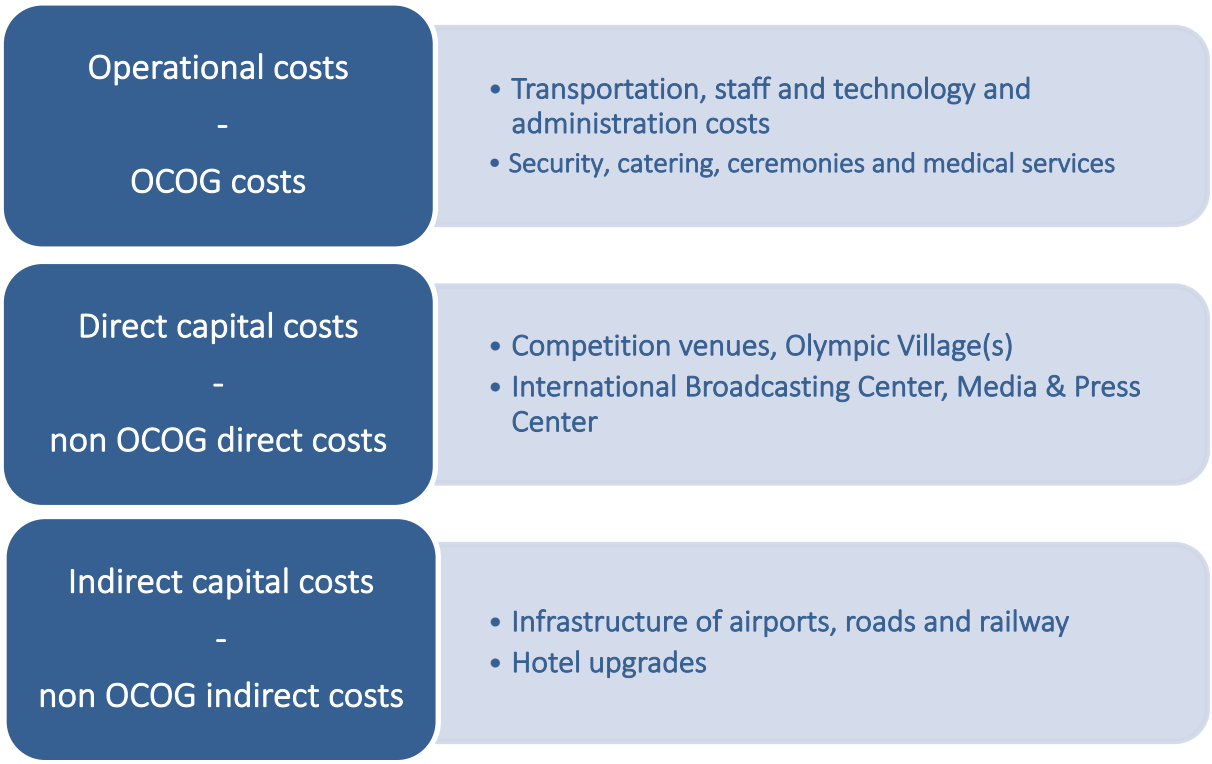
it depends if it is related to the Olympic Games or not. If yes, they are deferred until the year of the Olympic Games, if not, they are recorded when the instalments become due. Additionally, part of these other revenues is received in the form Value in Kind, like the revenues from the TOP programme.

Based on the fact that IFRS 15 will replace the IAS 18 from January 1st 2018, there will be some changes in the presentation of IOC's revenues. However, the Annual Report of the IOC stated that no big changes were expected due to this change of accounting standard.

2.4.3 Costs of the Olympic Games defined by the IOC

According to the Oxford Study by Flyvbjerg, Stewart and Budzier (2016), the costs of hosting the Olympic Games can be divided into three categories which are established by the IOC and shown in the figure below.

Figure 4: Olympic Costs defined by the IOC



Source: Own table based on Oxford Study by Flyvbjerg, Stewart and Budzier (2016)

The first category, officially called operational costs by the IOC, are variable operational costs that occur as a result of arranging the Olympic Games induced by the Organizing Committee. These can be seen as variable because they vary with the volume, meaning how many athletes are attending and how many events they attend in. Direct capital costs, the second category are also sports related costs, but these are not as variable as they are required by the IOC. The size of the Media Centre is not directly influenced by the number of competing athletes but is influenced within a relevant range. These are costs covered by the host city or country, or private investors.

The last category, indirect capital costs are considered wider capital costs since they are investments made to upgrade and prepare the city for the inflow of people, but it is not directly related to the Olympic Games. This last group is usually not included in cost analysis of the Olympics, and will not be in this thesis, because of several reasons:

- Data on such costs are rare
- If the data is available, they are usually not reliable, and their validity has to be questioned as the data typically does not qualify for the standard of academic research
- If the data is available, and is reliable and valid, they are hard to compare between cities and countries, as Preuss (2016) says each Games require their own particular structure and cities differ in available structures

However, Baade and Matheson (2016) found seven Games for which they could obtain reliable and valid data for both sport infrastructure and general infrastructure, and in all cases the cost of general infrastructure was higher than the cost of sport infrastructure.

2.4.4 Life cycle

Due to the fact that the Olympic Games can be characterised as a mega project, the life cycle of a project will be defined to better be able to understand the economy of the Games later in the thesis. There are several definitions of the project life cycle, but the one defined by Pinto and Slevin (1988) in the Project Management Journal seems the most fitting for the Olympic Games. According to them, a project has four stages which will be displayed in the figure below.

Figure 5: Project life cycle

Source: Own figure based on Pinto and Slevin (1988)

Based on this model, starting a project is the initial stage. Here there is a need to lay down the strategy by the project leaders and set the course of the project. Normally, some introductory goals are defined, and an analysis is done to check the resources available to meet these goals. To finalize this stage, a contract is usually signed. The second phase is reached and begun when the top management has given the green light in the previous stage. In this stage, the goals are more formalized, and the budgeting for the project is done. Tasks are created and assigned to those involved in the project, in order to prepare for the next stage. The third stage is called "Execution" and is when the actual project is performed. Here all previous planned actions are performed. When all actions are done, the project is over, and the remaining stage can kick in. This last stage involves some evaluation meetings on how the project went and whether it met its goals. The working group is usually dissolved to move on to other projects. The life cycle of the Olympic Games will be analysed in chapter 4: Data-collection.

3 Development of the Olympic Games

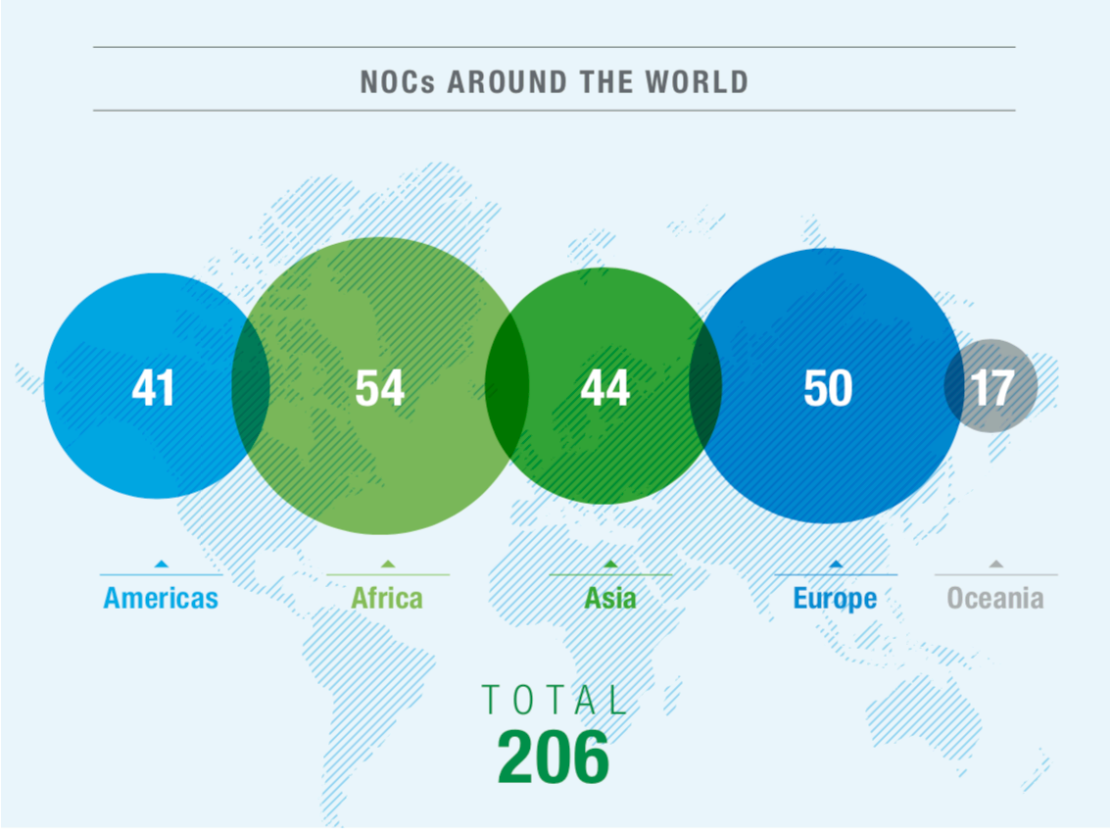
This chapter will present the readers with some knowledge of the development of the Games in the size. Various graphs will be shown to visualize the progress of the Games in participating NOCs, competitors (both men and women), events, volunteers and media coverage. Only the Modern Games will be taken into consideration, as those have been ruled under the same organization from the beginning and therefore can be compared to each other. That means that all Games from 1896 to 2016 will be a part of this evaluation, as the Games in 2016 are the last completed Summer Games. Regarding the Winter Games it will depend whether the numbers are ready from the latest completed Games in PyeongChang in 2018. Because of the different amount of times the Summer Games and Winter Games have been held, the unlike history of the Games and most significantly, since the Summer Games are of a much larger size than the Winter Games, the Summer and Winter Games are analysed as to separate mega projects in this chapter.

3.1 Development of attending nations

The first factor to be presented is the development of participating countries in the Games, which gives an indication of the size of the Games, its popularity and how spread it is globally. The more nations competing in the Games, the more publicity it will gain in its region and the more attractive it will be for the best athletes in their respective sports to compete in what has become the most prestigious sporting event. In addition, an increase in attending nations has a substantial impact on the business of the Games. From the revenue side, when a country is included, the Games gain a whole population extra where a guaranteed percentage will follow it on television or internet, which leads to more expensive broadcasting rights and a higher income to the IOC, which redistributes it to other departments. Some from the new nations might come visit the actual host city, where they need to accommodate, eat, drink and will support the ticketing sales. That increases the chance of someone to buy some of the merchandising or help the sales of the partners of the Olympic Games as their advertisement is everywhere. From the cost side of the Games, an additional nation should mean a higher number of contestants, which means higher costs of the logistical process such as volunteers, interpreters/translators, food and beverage and security needed, provided from the host city. This increases the operational costs, also known as OCOG costs that vary with volume.

The number of contesting nations should also give an indication of how many athletes will be competing as it is the National Olympic Committees who approves and selects their contestants. As mentioned before, it is the NOC's responsibility to ensure that their nation has representatives to participate in the Games. From the original 14 nations, there are today 206 registered NOCs around the world, spread across the five continents as we can see in the figure under. Due to the suspension of the Kuwait Olympic Committee, the number does not correspond with attending NOCs in the last completed Summer Games in Rio de Janeiro 2016.

Figure 6: NOCs around the world

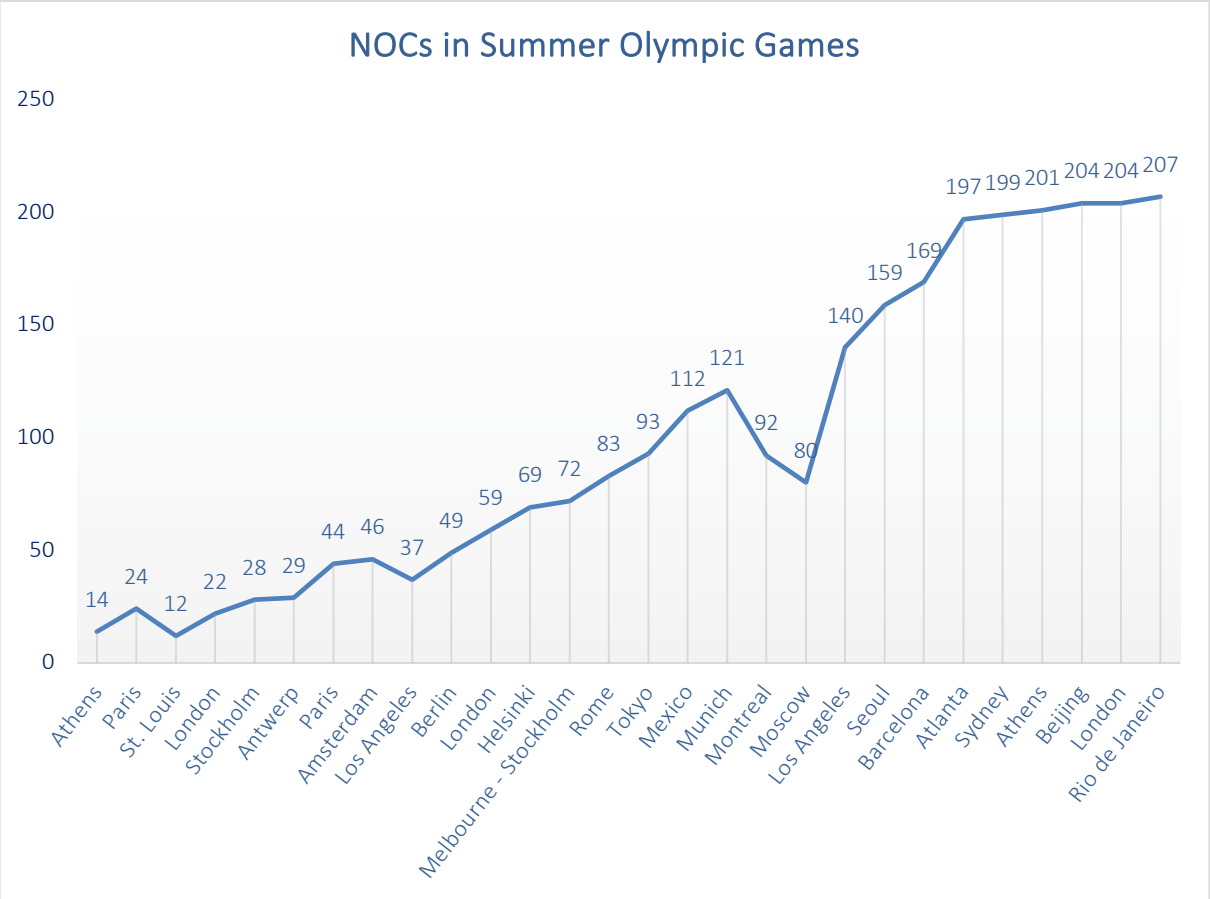


Source: IOC Annual Report (2016)

3.1.1 Development of attending NOCs in Summer Olympic Games

Graph 1 below, will show the development of contesting nations in the Summer Games from the first Modern Games in Athens in 1896 to the last completed Summer Games in Rio de Janeiro in 2016.

Graph 1: Development of attending NOCs in Summer Olympic Games



Source: Own graph based on numbers from Olympic.org

As can be seen from the graph, the Summer Games country participation has mostly had a steady development throughout its history. There have been some relapses, as the Games have been affected by other incidents happening globally, like for example the World Wars, the Great Depression which influenced the economy worldwide and boycotts due to past events. The first downfall in 1904, was probably not that big of a downfall, as the previous Games in Paris were held as a part of the World's Fair and consequently had such a high number of

competing nations. At the time Los Angeles hosted their first Games in 1932, its location was far and therefore harder to reach for many nations, while correspondingly the world was suffering from economic depression.

The later noteworthy downfall in 1976, with the Games of Montreal, was according to the Olympics official report of the event, due to the African boycott involving 22 countries as a reaction to an episode between the New Zealand Rugby team and South Africa during the time of Apartheid. Even though the number shows a retraction of 29 nations, there is room to assume that some nations retracted to show their support for the African boycott. Following the downfall of Montreal, the next Summer Games in Moscow in 1980 suffered an even bigger withdrawal of countries. This time the boycott was led by the USA, as a protest against the Soviet invasion of Afghanistan in December 1979. As a result of these political boycotts affecting the participation and ideology behind the Games, a genuine fear spread whether political disputes would come in the way of arranging worldwide Games, where all five continents would be present. Just like Pierre de Coubertin intended with his five circles on the Olympic Flag.[21] But as the development shows after Los Angeles's second Games, the number of participating countries only went up from 1984.

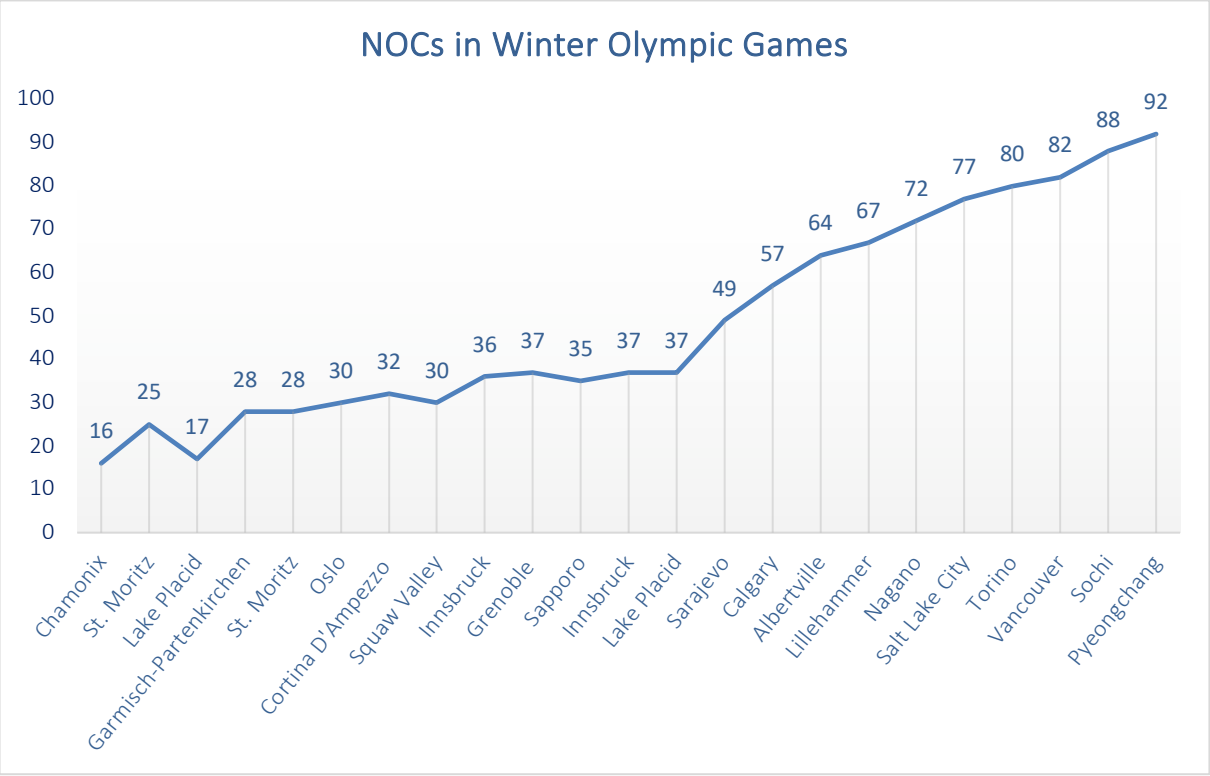
Host City Barcelona experienced a large increase of competing nations in 1992, as they arranged the first boycott-free Summer Games since 1976. By the time Barcelona held their Olympic Games, apartheid had been abolished in South Africa and the Berlin wall had fell. Moreover, the communism had ended which lead to the Soviet Union separating into 15 individual countries which now could represent themselves.

3.1.2 Development of attending NOCs in Winter Olympic Games

The development of attending nations in previous Winter Games will be shown in the same type of graph as the Summer Games, starting with the first Winter Games in Chamonix in 1924 to the last completed Winter Games in PyeongChang in 2018, as this information could be obtained from the latest Games held.

[21] NEW ZEALAND HISTORY. *The Montreal Olympics Boycott.* [online]. [cit. 2018-02-27]. Available from: https://nzhistory.govt.nz/media/photo/montreal-olympics-boycott

Graph 2: Development of attending NOCs in Winter Olympic Games



Source: Own graph based on numbers from Olympic.org

The development of the Winter Games has more or less been a continuing increase since its first Games in 1924. One of their three downfalls, the first and biggest in 1932, was probably of the same reasons as the downfall of the Summer Games the same year in Los Angeles, which were the location of the Games while the world economy was suffering. The second minor reduction happened in Squaw Valley in 1960 and could be explained with the withdrawal of bobsleigh from the program for the first (and last) time, as only nine nations showed interest in that sport ahead, which was too low for the Organizing Committee who decided not to build a bobsleigh run based on that. The last slight decrease was in Sapporo in 1972, and has no other reason then maybe its location, as it was the first Winter Games held in Asia. Furthermore, compared to the Summer Games, the Winter Games has had a much steadier trend.

3.2 Development of competitors

As more and more countries participated, the number of competitors naturally grew, which meant that the size of the Games also increased. The second factor, development of attending athletes is therefore connected with the first factor of attending nations. However, also within the nations the delegations became bigger. Additional contestants mean that the host city needs to provide larger divisions of workforce and use a higher amount of resources on security, accommodation, medical service, food and beverage services, accreditation, press and media support, competition venues, just to mention some functional areas that are affected by the increased number of contestants. This results in increasing operational costs for the host cities. Hosting what has become this mega-event requires these days almost a decade of planning and organizing because of its size, which was not the situation when the Modern Games first originated. This subchapter will therefore provide an overlook over the total growth of this events contestants, both female and male, plus the size of the nation's delegations.

3.2.1 Development of competitors in Summer Olympic Games

Firstly, a table with the most important numbers for the Summer Olympic Games athletes will be presented. Table 2 will show the number of women and men, and their relationship between gender participation of the total athletes competing, as one of the recommendations of the Olympic Agenda is to foster gender equality, or more precisely to reach an equal participation rate between men and women. Furthermore, it will display the growth of the participation from Summer Games to Summer Games, together with a total growth from the first to the last Games and an average growth per Summer Games. Lastly, the table will present the growth of the delegations within the nations.

To calculate the average growth of the Games and delegations, the geometric average has been used as through compounding the numbers are dependent on each other, and the geometric average is more precise on datasets with volatility.

Table 2: Numbers and ratios of Summer Olympic Games

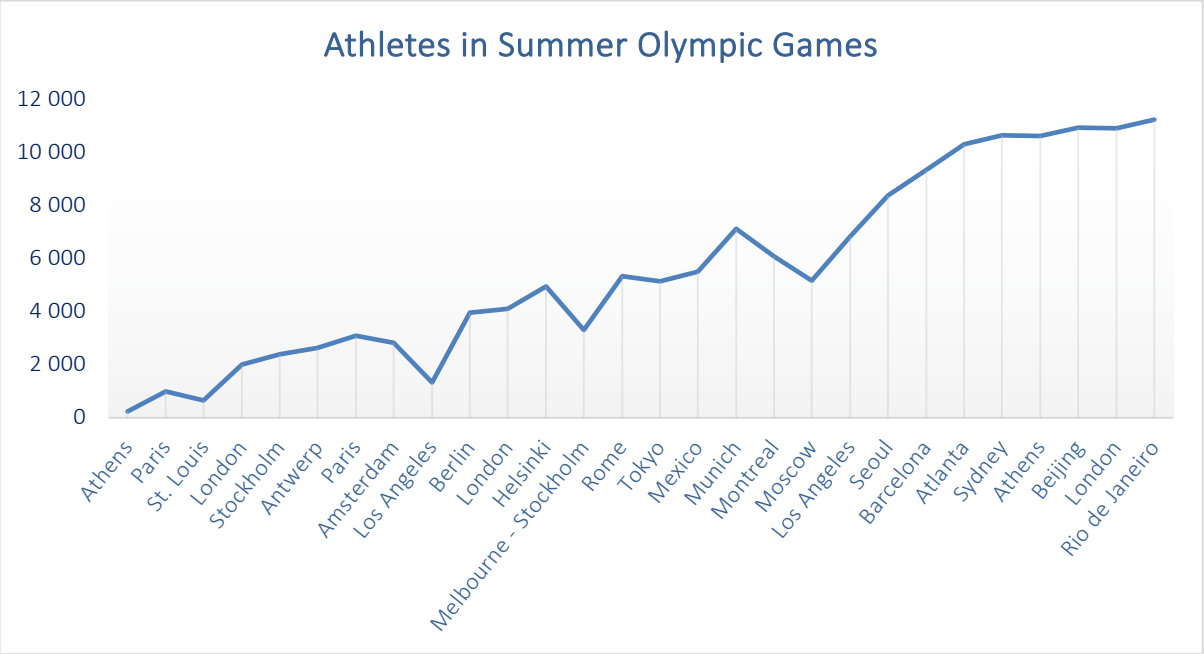
Year	Host city	Women	W %	Men	M %	Athletes	Growth	NOC	Athletes/ NOC	Growth
1896	Athens	0	0 %	241	100 %	241		14	17	
1900	Paris	22	2 %	975	98 %	997	314 %	24	42	141 %
1904	St. Louis	6	1 %	645	99 %	651	-35 %	12	54	31 %
1908	London	37	2 %	1 971	98 %	2 008	208 %	22	91	68 %
1912	Stockholm	48	2 %	2 359	98 %	2 407	20 %	28	86	-6 %
1920	Antwerp	65	2 %	2 561	98 %	2 626	9 %	29	91	5 %
1924	Paris	135	4 %	2 954	96 %	3 089	18 %	44	70	-22 %
1928	Amsterdam	227	8 %	2 606	92 %	2 833	-8 %	46	62	-12 %
1932	Los Angeles	126	9 %	1 206	91 %	1 332	-53 %	37	36	-42 %
1936	Berlin	331	8 %	3 632	92 %	3 963	198 %	49	81	125 %
1948	London	390	10 %	3 714	90 %	4 104	4 %	59	70	-14 %
1952	Helsinki	519	10 %	4 436	90 %	4 955	21 %	69	72	3 %
1956	Melbourne-Stockholm	376	11 %	2 938	89 %	3 314	-33 %	72	46	-36 %
1960	Rome	611	11 %	4 727	89 %	5 338	61 %	83	64	40 %
1964	Tokyo	678	13 %	4 473	87 %	5 151	-4 %	93	55	-14 %
1968	Mexico	781	14 %	4 735	86 %	5 516	7 %	112	49	-11 %
1972	Munich	1 059	15 %	6 075	85 %	7 134	29 %	121	59	20 %
1976	Montreal	1 260	21 %	4 824	79 %	6 084	-15 %	92	66	12 %
1980	Moscow	1 115	22 %	4 064	78 %	5 179	-15 %	80	65	-2 %
1984	Los Angeles	1 566	23 %	5 263	77 %	6 829	32 %	140	49	-25 %
1988	Seoul	2 194	26 %	6 197	74 %	8 391	23 %	159	53	8 %
1992	Barcelona	2 704	29 %	6 652	71 %	9 356	12 %	169	55	5 %
1996	Atlanta	3 512	34 %	6 806	66 %	10 318	10 %	197	52	-5 %
2000	Sydney	4 069	38 %	6 582	62 %	10 651	3 %	199	54	2 %
2004	Athens	4 329	41 %	6 296	59 %	10 625	0 %	201	53	-1 %
2008	Beijing	4 637	42 %	6 305	58 %	10 942	3 %	204	54	1 %
2012	London	4 835	44 %	6 068	56 %	10 903	0 %	204	53	0 %
2016	Rio de Janeiro	5 057	45 %	6 181	55 %	11 238	3 %	207	54	2 %
	Total						4563 %			215 %
	Geometric average						15,29 %			4 %

Source: Own table and calculations based on "Factsheet, The Games of the Olympiad" (2016)

Women were not allowed to compete in the first Modern Games, therefore their first appearance came in 1900 in Paris, making only 2% of the total participation. From that time the Summer Games have become more gender equal, and as can be seen from the table over. Female participants made a record of 45% in the last Summer Games in 2016. But more importantly, the total growth for Summer Games has been 4563%, with an average of 15,29%. Basically, the development of the athletes has been an increase all in all, but with high volatility until the last five Summer Games, which has had a stable growth. When it comes to the

delegations, they have grown 215% in total, with an average of 4% per Summer Olympic Games. However, except for the second Summer Games, the 1936 Games in Berlin experienced the highest expansion of the delegations, followed with irregularities until the last three Summer Games, which for the first time have had a steady positive growth. Nevertheless, the main indicator, total athletes, will be presented in graph 3 below.

Graph 3: Development of athletes in Summer Olympic Games



Source: Own graph based on "Factsheet, The Games of the Olympiad" (2016)

The development of the athletes mainly follows the development of the NOCs, with the exception off the Summer Games in 1956 in Melbourne-Stockholm. These Games were the first and so far, last to co-host Olympic Games, due to Australian quarantine laws on foreign horses. Therefore, the equestrian sports were held in Sweden, and the Games were located in two places, at two different times suitable to their global positions. The reason behind its downfall in competitors were three worldwide boycotts, making these Games the first to be affected by boycotts. Since the 2000 Games in Sydney, there has been a rather steady growth which will most likely continue given there will be no further boycotts in the future.

3.2.2 Development of competitors in Winter Olympic Games

For the Winter Games, the development of participating athletes will be presented equally as the contestants in the Summer Games, meaning in a table with the same parameters followed by a graph. Whilst the Summer Games have been arranged 28 times, the Winter Games have only occurred 23 times, thus they have had a shorter amount of time for growth.

Table 3: Numbers and ratios of Winter Olympic Games

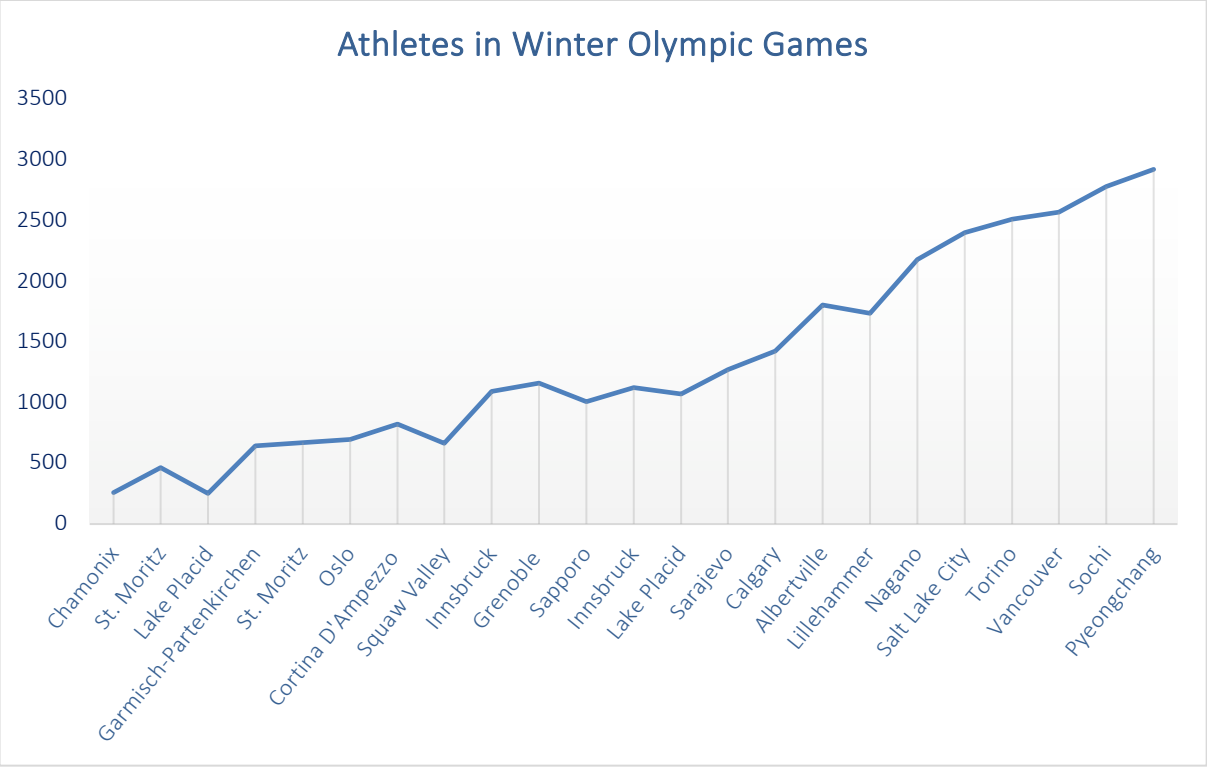
Year	Host City	Women	W %	Men	M %	Athletes	Growth	NOC	Athletes/ NOC	Growth
1924	Chamonix	11	4 %	247	96 %	258		16	16	
1928	St. Moritz	26	6 %	438	94 %	464	80 %	25	19	15 %
1932	Lake Placid	21	8 %	231	92 %	252	-46 %	17	15	-20 %
1936	Garmisch-Partenkirchen	80	12 %	566	88 %	646	156 %	28	23	56 %
1948	St. Moritz	77	12 %	592	88 %	669	4 %	28	24	4 %
1952	Oslo	109	16 %	585	84 %	694	4 %	30	23	-3 %
1956	Cortina D'Ampezzo	134	16 %	687	84 %	821	18 %	32	26	11 %
1960	Squaw Valley	144	22 %	521	78 %	665	-19 %	30	22	-14 %
1964	Innsbruck	199	18 %	892	82 %	1 091	64 %	36	30	37 %
1968	Grenoble	211	18 %	947	82 %	1 158	6 %	37	31	3 %
1972	Sapporo	205	20 %	801	80 %	1 006	-13 %	35	29	-8 %
1976	Innsbruck	231	21 %	892	79 %	1 123	12 %	37	30	6 %
1980	Lake Placid	232	22 %	840	78 %	1 072	-5 %	37	29	-5 %
1984	Sarajevo	274	22 %	998	78 %	1 272	19 %	49	26	-10 %
1988	Calgary	301	21 %	1 122	79 %	1 423	12 %	57	25	-4 %
1992	Albertville	488	27 %	1 313	73 %	1 801	27 %	64	28	13 %
1994	Lillehammer	522	30 %	1 215	70 %	1 737	-4 %	67	26	-8 %
1998	Nagano	787	36 %	1 389	64 %	2 176	25 %	72	30	17 %
2002	Salt Lake City	886	37 %	1 513	63 %	2 399	10 %	77	31	3 %
2006	Torino	960	38 %	1 548	62 %	2 508	5 %	80	31	1 %
2010	Vancouver	1 044	41 %	1 522	59 %	2 566	2 %	82	31	0 %
2014	Sochi	1 121	40 %	1 660	60 %	2 781	8 %	88	32	1 %
2018	Pyeongchang	1 256	43 %	1 664	57 %	2 920	5 %	92	32	0 %
	Total						1032 %			97 %
	Geometric average						12 %			3 %

Source: Own table and calculations based on “Factsheet, The Olympic Winter Games” (2017)

By the time Winter Games were invented, the ladies were allowed to compete, so therefore they had a 4% participation share already in the first Winter Games in 1924. Similarly, to the Summer Games, the gender equality has grown to have an almost even participation rate like

men, with a top rate of 43 % in the latest Games hosted in PyeongChang. However, the total growth of athletes at Winter Games is one quarter of the Summer Games, being only 1032% compared to 4563%. The average of the growth from Winter Games to Winter Games is 12%, compared to Summer Games' average of 15,29%. This means that the size of the Summer Games has grown over four times as much as the Winter Games, but on the other hand the average growth per Games have been quite similar. Both Games started with a similar number of contestants, but the Summer Games grew much more the first years in size, so by the fourth Summer Games it had over 2000 athletes, while it took 18 Winter Games to have as many participants.

Graph 4: Development of athletes in Winter Olympic Games



Source: Own graph based on "Factsheet, The Olympic Winter Games" (2017)

Graph 4 expresses a similar development as the attending NOCs in the past Winter Games. It follows the same pattern and shows a linkage between the number of present countries and competitors, except for the downfall in Lillehammer which has no official reasoning, but given

that it was arranged only 2 years after Albertville due to the change in the cycle, maybe the athletes already had other world championships to compete in. When considering the number of participating athletes in the last Summer Olympics and the last Winter Olympics, it can be calculated that the Summer Olympics has four times more athletes. This despite the fact that in the Summer Olympics there have only roughly two times more nations, which implies that the delegations are twice as big in the Summer Olympics as in the Winter Olympics.

3.3 Development of events

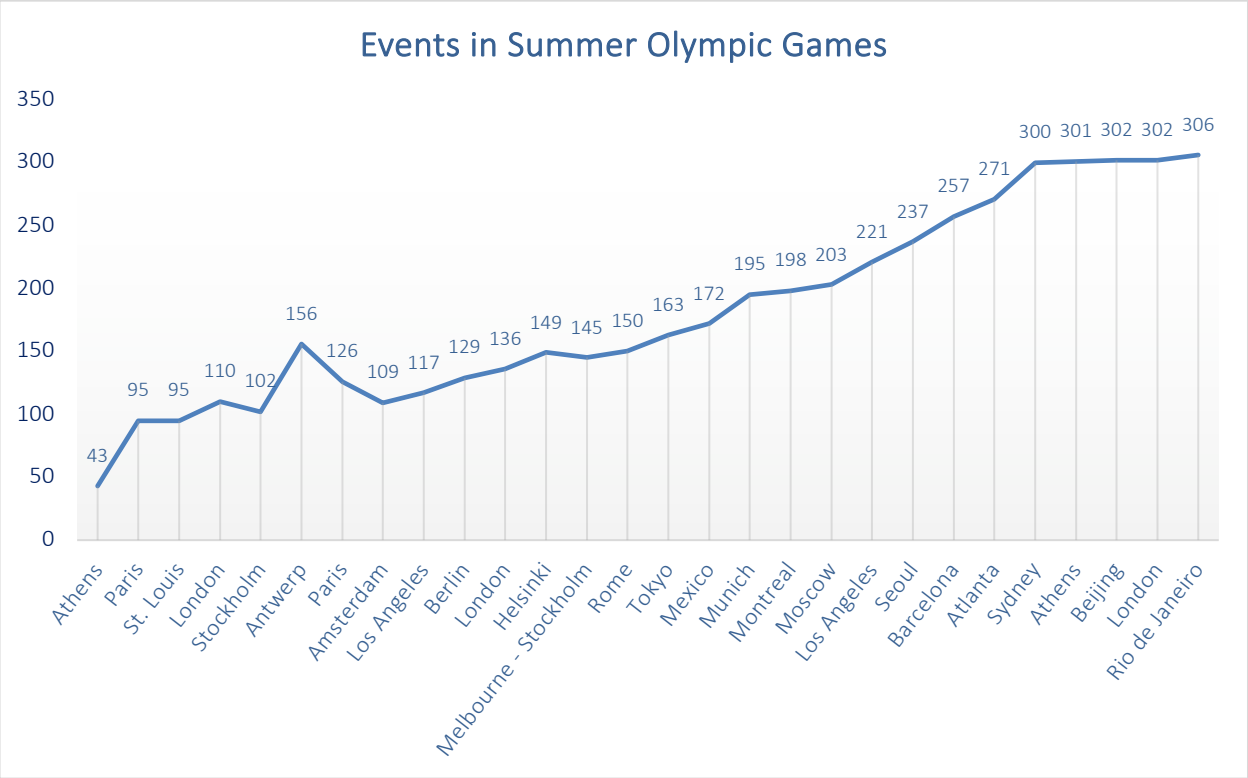
Furthermore, one important factor of the size of the Olympic Games, is the number of events. As defined earlier in this paper, an event is a competition that gives rise to a ranking or medal at the end of it. One of the reasons of the expansion is that in the beginning of the Modern Games, the events were held once since only men could participate. But as women slowly were allowed to compete in the same sports as men, the number of events grew correspondingly. Additionally, as a part of the recommendation to foster gender equality, the IOC is encouraging mixed gender team events, which also results in increasing the number of events. New events give space for more contestants and is an important factor for the development of the costs of the Games. When new events are added within a sport, new competition venues like stadiums or tracks often need to be build, and thus the Games require bigger investments. This would naturally affect the costs that fall under direct capital costs. Even if new tracks are not added, there has to be more maintenance done when using the tracks several times and therefore it gets costlier. However, these maintenance costs would fall under the operational costs. In other words, this means that the increase in events both affects the direct capital costs and the operational costs.

3.3.1 Development of events in Summer Olympic Games

From the first Modern Summer Games, the number of events has multiplied more than 7 times, whereas the growth of actual sports only has tripled, from 9 to 28. Graph 5 shows that there has been a stable positive development of the number of events, with a big increase in the Games in Antwerp in 1920 which could be explained by the 8-year break beforehand. Since the

year 2000, there has been little change to the number of events in order to limit the size of the Games, according to the Olympic Museum.[22]

Graph 5: Development of events in Summer Olympic Games



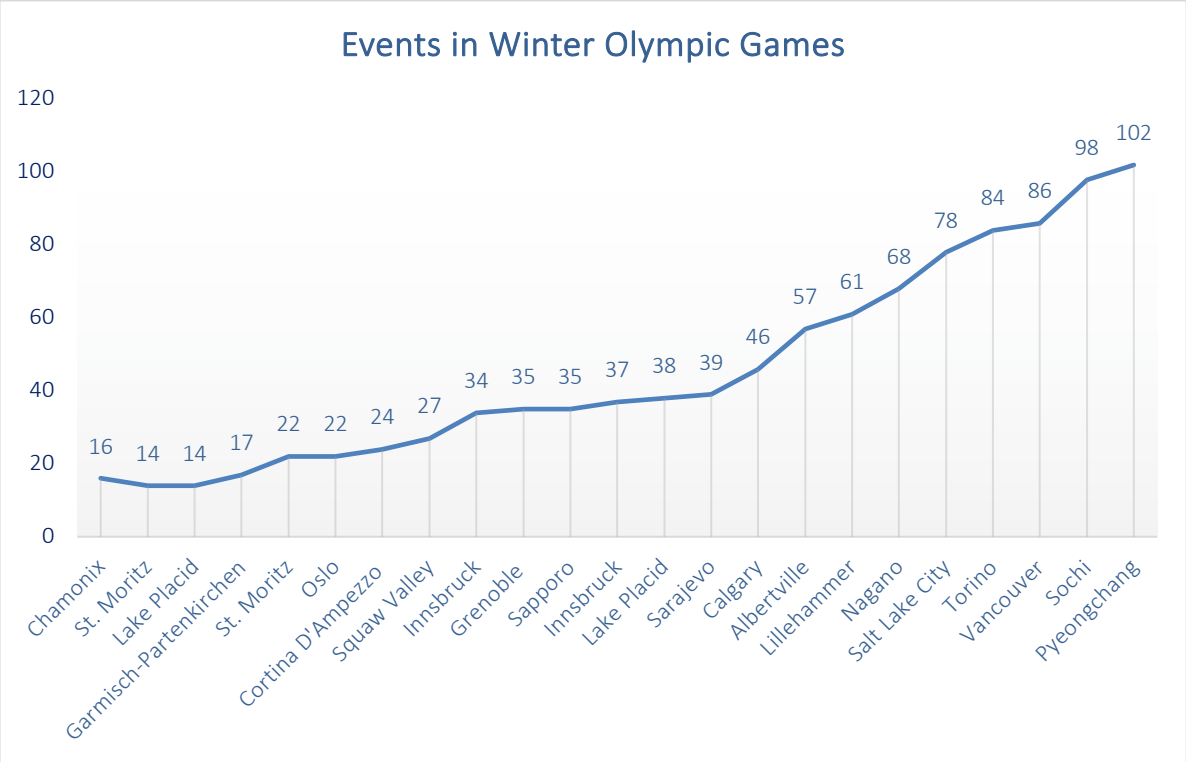
Source: Own graph based on "Factsheet, The Games of the Olympiad" (2016)

3.3.2 Development of events in Winter Olympic Games

When it comes to the number of events in Winter Olympic Games it has multiplied more than 6 times, but unlike the Summer Olympic Games, the number of winter sports has remained relatively stable. It has only gone up from 6 to 7. The development of events in Winter Games was considerably slower than the Summer Games, but all in all a slow and stable until the Games in Sarajevo 1984. Afterwards, the number of events increased much more from Winter Games to Winter Games, until the last completed Winter Games in PyeongChang 2018.

[22] THE OLYMPIC MUSEUM EDUCATIONAL AND CULTURAL SERVICES. *The Modern Olympic Games.* [online]. 3rd edition. 2013. [cit. 2018-03-15]. Available from: https://stillmed.olympic.org/media/Document%20Library/OlympicOrg/Documents/Document-Set-Teachers-The-Main-Olympic-Topics/The-Modern-Olympic-Games.pdf

Graph 6: Development of events in Winter Olympic Games



Source: Own graph based on "Factsheet, The Olympic Winter Games" (2017)

3.4 Cost per athlete & event

For the fourth indicator of the development of the Olympic Games, a case study from Oxford by Flyvbjerg, Stewart and Budzier (2016) will be used to show the development of cost per athlete and cost per event. The case study from 2016 shows the progress from 25 out of 30 Summer and Winter Olympic Games arranged from 1964-2016. Data could only be obtained from these 25 Olympiads, but since they are over a spread of the last half of the 20th century and into this century, it is still relevant for this paper. The data is presented in millions of US dollars. The study was written before the Summer Olympics in Rio de Janeiro, so preliminary numbers were used for this Games, according to the authors. The costs used in their analysis was OCOG costs and non-OCOG direct costs, also known as the operational costs and direct capital costs like described earlier, in subchapter 2.4.3. Here it is also important to have in mind that throughout the years, the quality provided to the athletes like medical services and the quality to the visitors like security, increased considerably, so the Games from 1964 are not perfectly comparable to the later Games in 2016.

Table 4: Cost in millions of USD per athlete & event from 1964-2016 in Summer Olympic Games

Year	Host City	Cost per athlete	Cost per event
1964	Tokyo	0,1	1,7
1972	Munich	0,1	5,2
1976	Montreal	1	30,8
1980	Moscow	1,2	31,2
1984	Los Angeles	0,1	3,3
1992	Barcelona	1	37,7
1996	Atlanta	0,4	15,3
2000	Sydney	0,5	16,8
2004	Athens	0,3	9,8
2008	Beijing	0,6	22,5
2012	London	1,4	49,5
2016	Rio de Janeiro	0,4	14,9
	Average	0,6	19,9
	Median	0,5	16,8

Source: Own table based on Flyvbjerg, Stewart and Budzier (2016)

Table 5: Cost in millions of USD per athlete & event from 1964-2014 in Winter Olympic Games

Year	Host City	Cost per athlete	Cost per event
1964	Innsbruck	0,02	0,6
1968	Grenoble	0,8	25,4
1972	Sapporo	0,1	3,4
1976	Innsbruck	0,1	3,2
1980	Lake Placid	0,4	11,5
1988	Calgary	0,8	24,1
1992	Albertville	1,1	35
1994	Lillehammer	1,3	36,5
1998	Nagano	1	32,7
2002	Salt Lake City	1,1	32,3
2006	Torino	1,7	52
2010	Vancouver	1	29,5
2014	Sochi	7,9	223,4
	Average	1,3	39,2
	Median	1,0	29,5

Source: Own table based on Flyvbjerg, Stewart and Budzier (2016)

These tables illustrate that there has been an increase in cost per athlete and cost per event over the years, for both Summer and Winter Olympics. Like mentioned above the tables, some part of the increase can be explained with the natural increase regarding quality of services provided by the host cities. Additionally, some of the increase can be caused by the rising requirements from the IOC regarding Broadcasting Centres, accommodation for their members etc. However, when looking at the cost per athlete in the Summer Olympics, the most expensive by 2016 were the last completed Summer Games in London, which implies the problematic direction of the costs of the Games. The Games in Los Angeles in 1984 were the cheapest Summer Games in this analysis, which might be partly explained by the substantial increase in competing athletes and participating NOCs from the former Games under the assumption that the standard was the same as the previous Games. To be clearer, the assumption is that both the Los Angeles and Moscow Olympics cost more or less the same, but the costs of the Los Angeles Games could be divided on several more participants. 1984 was the last year before the TOP Marketing programme was launched, which could have been a reason why the costs were quite low for the last time, as the IOC was in a growing debt before this agreement. Regarding the cost per event for the Summer Olympics there has been a rather high volatility, despite the fact that the development of events has been quite steady.

In comparison, the Winter Games have a higher average cost per athlete and average cost per event than the Summer Games. This can be explained with the fact that winter sports are usually more expensive than summer sports because of the equipment and climate differences. To be able to run, usually good running shoes and a t-shirt with pants are needed. There are many surfaces where someone can run for free, even on some former Olympic Stadiums, like Bislett Stadion in Oslo. To be able to run on skis, a warm base layer is needed to not freeze because of the cold climate, the second layer needs to be wind proof and water resistant in case of snow, and a pair of gloves, a hat and proper boots are needed. Secondly, the skis and poles cost something, especially with the preparation of the skis in mind. And there needs to be a place for skiing, with prepped ski slopes and preferably lightning in the dark woods. For the same reason, it is costlier to host a Winter Sports event, rather than a Summer Sports event.

The costs per athlete in the Winter Olympics have not been under 1 million since the Winter Games in Calgary in 1988, where the number of NOCs exceeded 50 for the first time. Since then, the Winter Games have had a stable increase in number of events and number of

athletes, which the costs seemed to follow until the Vancouver Games. The Vancouver Games were planned in a very cost-effective way, in order not to undertake a debt that would take several decades to repay, like with the Montreal Games. The numbers from Sochi can be questioned, as data published from these Games cannot be seen as an objective description of reality and will therefore not be included in the interpretation.

3.5 Development of volunteers and media representatives

To support the argument of the increase of the size of this mega sport event, the last factor presented will be the number of volunteers and media. The numbers are taken from Summer and Winter Games that has available data for these measures. Media expresses the number of people from both written press and broadcasting, which play an essential role for the Olympic Games, as most spectators worldwide are watching through broadcasting. For example, the Vancouver Games had 3 billion television viewers, according to the Olympics official report of the event. The number of volunteers shows how many it takes to be able to organize and carry out hundreds of competitions and their thousands of participants. The tables will be presented below.

Table 6: Number of volunteers and media present at the Summer Olympic Games

Year	Host City	Volunteers	Growth	Media	Growth	Athletes	Growth	Volunteer/ Athlete	Media/ Athlete
1980	Moscow	n/a		5 615		5 179		n/a	1,08
1984	Los Angeles	28 742		9 190	64 %	6 829	32 %	4,21	1,35
1988	Seoul	27 221	-5 %	11 331	23 %	8 391	23 %	3,24	1,35
1992	Barcelona	34 548	27 %	13 082	15 %	9 356	12 %	3,69	1,40
1996	Atlanta	47 466	37 %	15 108	15 %	10 318	10 %	4,60	1,46
2000	Sydney	46 967	-1 %	16 033	6 %	10 651	3 %	4,41	1,51
2004	Athens	45 000	-4 %	21 500	34 %	10 625	0 %	4,24	2,02
2008	Beijing	70 000	56 %	24 562	14 %	10 942	3 %	6,40	2,24
2012	London	70 000	0 %	21 000	-15 %	10 903	0 %	6,42	1,93
2016	Rio de Janeiro	70 000	0 %	n/a	n/a	11 238	3 %	6,23	n/a
	Total growth		144 %		274 %		117 %		

Source: Own table based on Olympic.org

Based on the table it can be seen that there was a growing trend of registered volunteers and media in the Summer Games from 1984 which started disclosing these numbers. Both the growth of the volunteers and media was higher than the growth of the athletes between 1980 and 2016. As can be seen from table 6, the development in volunteers was volatile with some increases and some declines. This was before the Games in Beijing in 2008, which set a trend of having 70 000 volunteers. Since then, the last three Summer Games has kept to this number, which can imply that it is a satisfactory number for the host city. There has not been a substantial rise in competing participants since the 2008 Games, so there is room to assume that the standard of 70 000 volunteers will be realistic for future Summer Olympics. Therefore, a ratio of 6 volunteers per athlete seems to be the future ratio for the Summer Games. Even though the volunteers work for free, the host city has to have the capacity to accommodate and transport all these people and supply them with clothing, food and beverage. Besides, it takes a lot of time to go thru all the applications and interviews with every single volunteer for the employees. For these reasons the host cities should try to keep the number of volunteers down. But on the other hand, the volunteers will spread the word of the Games to their friends and family, who will have an extra interest following the Games and the volunteer spending time in the host city will most likely end up buying some of the merchandise as a souvenir or gift to someone back home and maybe even some tickets to go see their favourite events.

In the 1980 Summer Games in Moscow, there was almost the same number of participants as representatives from media. This ratio grew up to a double, meaning that in the more recent Summer Games there was two media representatives per contestant. This increase in the worldwide interest mainly came from the development in broadcasting, where colourful live broadcasted TV was in every home by 1980. During the late 2000 digital TV started and the internet made it possible to stream the Games and show interest in new ways. Social media is the newest channel to follow athletes, events, medal counts and all other aspects of the Olympics. That is probably why the media has had the biggest growth, with 274 % over the 36 years. The rise of written press and broadcasters adds a larger pressure on the host cities, as they need to have enough services available and build bigger and bigger press & media centres, as well as broadcasting centres. The IOC has many requirements to these centres, like for example that they need to be high quality facilities with support 24/7. Included in these requirements are services such as accommodation, transport, telecommunication and

technology for the media representatives. Furthermore, the requirements include how large the facilities should be in square meters and that their location is positioned conveniently for the journalists, photographers and broadcasters. All of these requirements drive up the direct capital costs for the host cities and make their planning very complex. Not only does the OCOG have to plan the best outcome for the athletes, but also for the double amount of media representatives that follow them. In the first Summer Games that has an account of all parts, we can see that Los Angeles hosted 44 761 athletes, media representatives and volunteers. This total amount in the Summer Games in London was 101 903, which is considerably a higher scale of planning, capacity and resources needed to host this sum of people in one city.

The next table, Table 7, will show the development of volunteers, media representatives and athletes for the Winter Olympics from 1980 to 2018.

Table 7: Number of volunteers and media present at the Winter Olympic Games

Year	Host City	Volunteers	Growth	Media	Growth	Athletes	Growth	Volunteer/ Athlete	Media/ Athlete
1980	Lake Placid	6 703		n/a		1 072		6,25	n/a
1984	Sarajevo	10 450	56 %	7 993		1 272	19 %	8,22	6,28
1988	Calgary	9 498	-9 %	6 838	-14 %	1 423	12 %	6,67	4,81
1992	Albertville	8 647	-9 %	5 894	-14 %	1 801	27 %	4,80	3,27
1994	Lillehammer	9 054	5 %	6 633	13 %	1 737	-4 %	5,21	3,82
1998	Nagano	32 000	253 %	8 329	26 %	2 176	25 %	14,71	3,83
2002	Salt Lake City	22 000	-31 %	8 730	5 %	2 399	10 %	9,17	3,64
2006	Torino	18 000	-18 %	9 408	8 %	2 508	5 %	7,18	3,75
2010	Vancouver	18 500	3 %	10 000	6 %	2 566	2 %	7,21	3,90
2014	Sochi	25 000	35 %	13 477	35 %	2 781	8 %	8,99	4,85
2018	Pyeongchang	16 209	-35 %	n/a		2920	5 %	5,55	n/a
	Total growth		142 %		69 %		172 %		

Source: Own table based on Olympic.org

For the Winter Games, the numbers look quite different compared to the development in the Summer Games. Here the growth of the athletes was the highest, with 172%, and volunteers second, with 142%. The media section did not have that big of a rise in the Winter Olympics, which probably comes from the fact that there are fewer parts of the world that are interested

in winter sports. The nations interested are usually those with cold climates and those who has mountains available within their borders. Therefore, it is mostly popular in Europe and North America, which is reflected in the number of media representatives. On the other hand, during the Winter Olympics the ratio of media per athlete is higher than for the Summer Games, which means that the worldwide interest is still high despite the fact that less athletes and less nations compete in the Games.

The growth of volunteers in the Summer and Winter Games has had the same trend. But since the Winter Games are much smaller in size, the interpretation of the growth has to be carefully made when aware of the differences in size. Additional contestants in the Winter Games results in a bigger growth, than if the same absolute number would be added to the Summer Games. As a conclusion, the rate of volunteer per athlete was lower in the last Winter Games compared to the last Summer Games.

The overall rise in people around the Olympics are partly the reason why the costs increase for the host cities within both the operational costs and the direct capital costs. The OCOG costs rise because the variable costs of security, catering, accommodation and transportation depend on the number of people the host city needs to provide it for. Additionally, the direct capital costs rise, as the requirements of the IOC increase with the trend. The square meters demanded, and different types of facilities are a result of the advancement in broadcasting services, which the host city ends up paying for. But on the other hand, without the broadcasting and written press the Olympics would not have this awareness worldwide and the revenues would have been significantly smaller. This global interest makes it possible for the IOC to charge high amounts for the broadcasting rights and the partners of the TOP programme would not agree to pay the high fees to be able to use the Olympic logo in their advertisement if it was not for this international exposure. Especially since the broadcasting rights make up for almost half of the revenues for the IOC, it is critical for the financing and future of the Olympics that the host cities continue to facilitate the media in the years to come.

It should be mentioned, that with this free labour the host cities save significant costs on salaries. If the volunteers would have been normally employed, they would have to pay out approximately 51,8 million US dollars more during Summer Olympics and 14,8 million US dollars during Winter Olympics. These calculations are based on the International Labour Organisation,

which has estimated that the overall average salary in the world is 17 760 US dollars per year.[23] This divided by 12, gives an average salary of 1 480 per month. Given that the Olympics last for 2 weeks, this number was divided in half to obtain the average salary a volunteer could expect to earn. However, it also has to be taken into account that the host cities would have to pay social insurance and other relevant costs, which would make the savings even larger. Additionally, there are regional differences in averages of salaries, which would be influenced by the location of the Games. Therefore, the difference in how much the cities would save is very volatile.

[23] WORLD ECONOMIC FORUM. What is the average wage around the world? [online]. [cit. 2018-05-18]. Available from: https://www.weforum.org/agenda/2015/06/what-is-the-average-wage-around-the-world/

4 Data-collection: Revenues and costs

This chapter will provide information on available data on revenues and costs of the Olympic Games that are relevant for this paper. As it is not possible to obtain the financials of the individual Games, it is hard to state the exact incomes and expenditures that come with hosting Olympic Games. Additionally, like mentioned before, the costs of the non OCOG indirect costs like infrastructure are hard to obtain, and if found is hardly reliable or valid. Furthermore, these costs are rarely comparable across cities as every city has a different starting point, different amount of resources and unique possibilities of solutions. However, the financial statements of the IOC have been published, which was one of the recommendations on the Olympic Agenda 2020 to become more transparent. Naturally, the chapter will start with the revenues, which will be divided and disclosed in more details in separate subchapters. Followed, only little information about the costs will be provided, as this is not clearly listed in the Annual Report or anywhere else. The last part of the chapter will try to look at the overall economy of the Olympic Games.

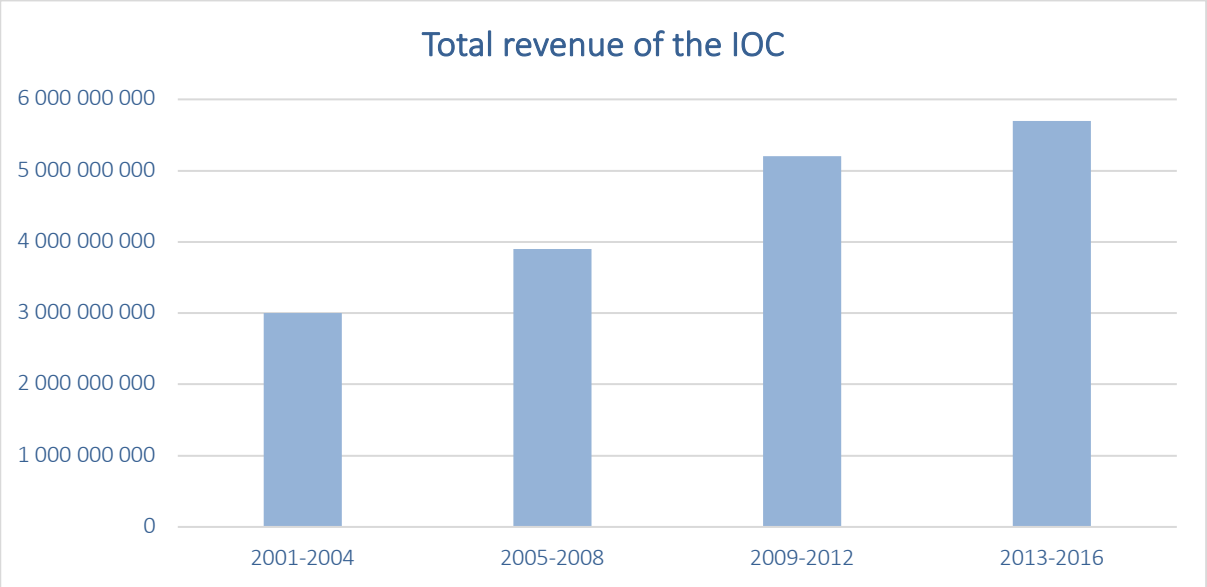
4.1 Revenues

This section will present diverse numbers and facts provided mainly from the Annual Report of the IOC for 2016, that will show the best possible picture of the income for the IOC, who redistributes 90% of their revenues to the Olympic Family, including the host cities. Firstly, the amount earned the last four Olympiads will be disclosed, before looking into the years 2015 and 2016. Furthermore, the sources of revenues will be presented before they will be described in more detail separately in their own subchapters.

4.1.1 Revenues of the IOC

From Ancient Greece the period of an Olympiad has not changed. The period of four years between the Olympic Summer Games is still referred to as an Olympiad, which is also how the IOC has decided to divide their revenues. As mentioned before in the second chapter, the IOC recognises parts of their revenues after the successful completion of an Olympic Games, when received in advance. The next graph will present the revenue of the IOC in USD, separated into the last four Olympiads.

Graph 7: Total revenue of the IOC (in USD)



Source: Own graph based on the IOC Annual Report (2016)

In graph 7 it can be seen that there has been an increase in the revenues for each Olympiad. From 2001-2004 where the revenue was 3 billion, the rise was 30% up to 3,9 billion for the next Olympiad. The next rise was 33%, which resulted in revenues of 5,2 billion for the period 2009-2012. The last Olympiad had the lowest relative rise, with just 9,62%, meaning that during the last period the IOC earned 5,7 billion. When all of the four periods are added up, it brings a total of 17,8 billion. That means that during the last 16 years, the IOC made a little over 1,1 billion annually on average. To better see the actual differences of when the revenues are recognised from a non-Olympic year compared to an Olympic year, the revenues from 2015 and 2016 will be presented. In 2016 the Summer Olympic Games were held in Rio de Janeiro.

Table 8: Revenue of the IOC in 2016 and 2015 (in USD)

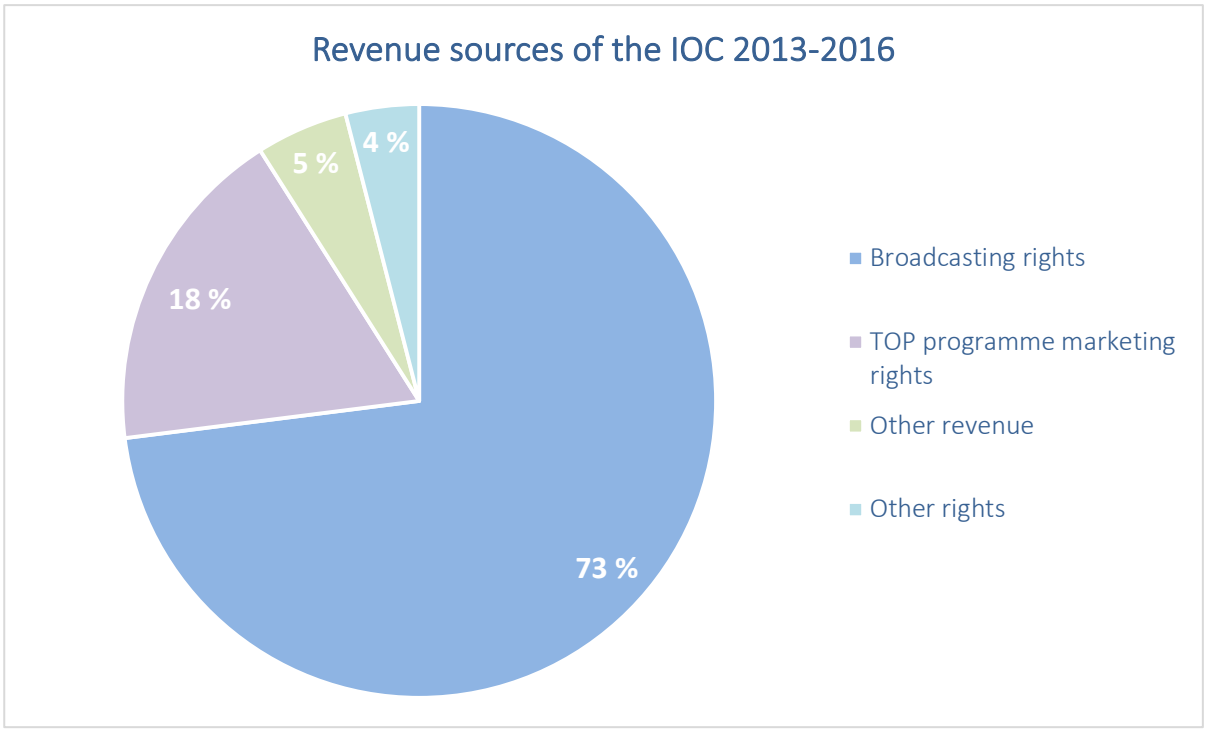
Revenue of the IOC (in USD)	2016	2015
Broadcasting rights	2 868 600 000	-
TOP programme marketing rights	409 928 000	143 015 000
Other revenue	140 725 000	5 628 000
Other rights	98 701 000	8 106 000
Total	3 517 954 000	156 749 000

Source: Own table based on the IOC Annual Report (2016)

Table 8 illustrates that the IOC did not recognise any of its revenues from selling their broadcasting rights, just like described in the second chapter. The difference is quite clear between a year without arranging Olympic Games and a year with one, which has an impact on the economy of the Olympic Games. Even though these are the revenues of the IOC, not directly of the host city, it serves as a good example for the cash flow of the host cities as the IOC redistributes their revenues to the Olympic family, including the OCOG and the host cities.

Now that the absolute numbers of how much the IOC has earned from 2001-2016 has been presented, the sources of their income will be shown in a cake pie graph. The IOC makes most of its revenues from selling their broadcasting rights, which is why the broadcasting and media has been so important the last decades and is so important for the future of the Olympic Games. In the figure below, we can see the four types of revenues the IOC earned in the years 2013-2016, also called one Olympiad. Each of these categories will be further described in their own subchapter.

Figure 7: Revenue sources of the IOC in 2013-2016



Source: Own figure based one the IOC Annual Report (2016)

4.1.2 Broadcasting rights

The growth of attending nations, athletes as well as the development of events has contributed to the fact that the demand to watch the Olympics has exploded globally and broadcasting companies pay billions of US dollars to be able to provide the live coverage. After the Summer Olympic Games in Rio de Janeiro, the IOC stated that they had half of the world's population watching the Games, reaching new highs in television and digital coverage. In total, they showed over 7 100 hours of live events, filmed with over 1 000 cameras. The implementation of selling broadcasting rights was one of the milestones that helped the financial position of the IOC in 1980 from a growing debt. This action together with the launch of the TOP programme ensured independent financial stability. That is probably why the Olympic Charter states that "The IOC takes all necessary steps in order to ensure the fullest coverage by the different media and the widest possible audience in the world for the Olympic Games" (Olympic Charter, 2015, p.92), to underline their prioritization of their significantly highest revenue source. Table 9 will display the broadcasting revenue for the last six Olympiads in US dollars.

Table 9: Revenue from selling broadcasting rights (in USD)

Olympiad		Growth
1993-1996	1 251 000 000	
1997-2000	1 845 000 000	47 %
2001-2004	2 232 000 000	21 %
2005-2008	2 570 000 000	15 %
2009-2012	3 850 000 000	50 %
2013-2016	4 157 000 000	8 %
Total	15 905 000 000	232 %

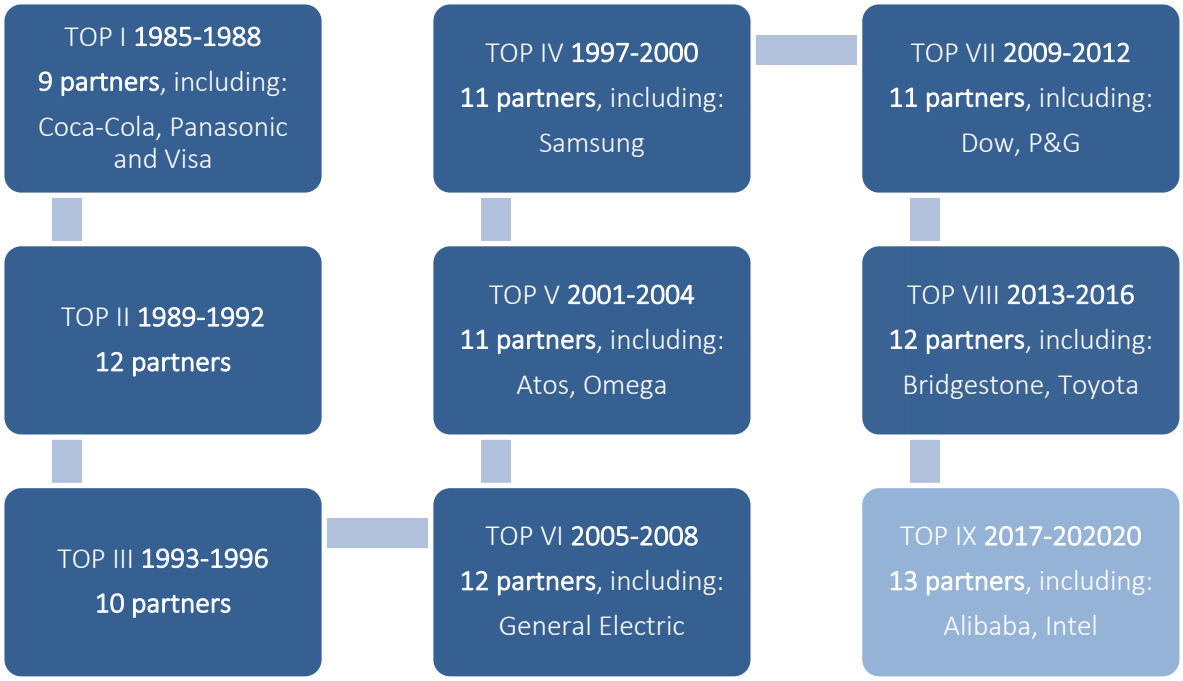
Source: Own table based on the Olympic Marketing Fact File (2018)

Throughout the last six Olympiads, the revenue from broadcasting has more than tripled. There were two rather big increases, 47% in 1997-2000 and 50% in 2009-2012. Here again, like in the total revenue for the IOC, the trend shows that in the last Olympiad, the relative growth was the lowest. For the total revenue of the IOC the rise was 9,62% in 2013-2016, compared to the growth of the broadcasting income in the same period of 8%.

4.1.3 TOP programme

The Olympic Partner Programme originated in 1985 and has since then expanded both in number of partners and in their total contributions. This programme is the second largest source of revenue for the IOC, making 18% of their revenue in the last Olympiad. Three of the initial sponsors for the first Olympiad from 1985-1988 were Coca-Cola, Panasonic and Visa. Coca-Cola has been supporting all of the Olympic Games since 1928, serving athletes, officials, coaches and spectators with drinks. This exemplifies that the sponsors provide their service or goods, as well as the financial payment for the usage of the Olympic global marketing rights. Figure 8 will show the history of the Olympic Partners since 1985, how many members each Olympiad had and when the current partners joined.

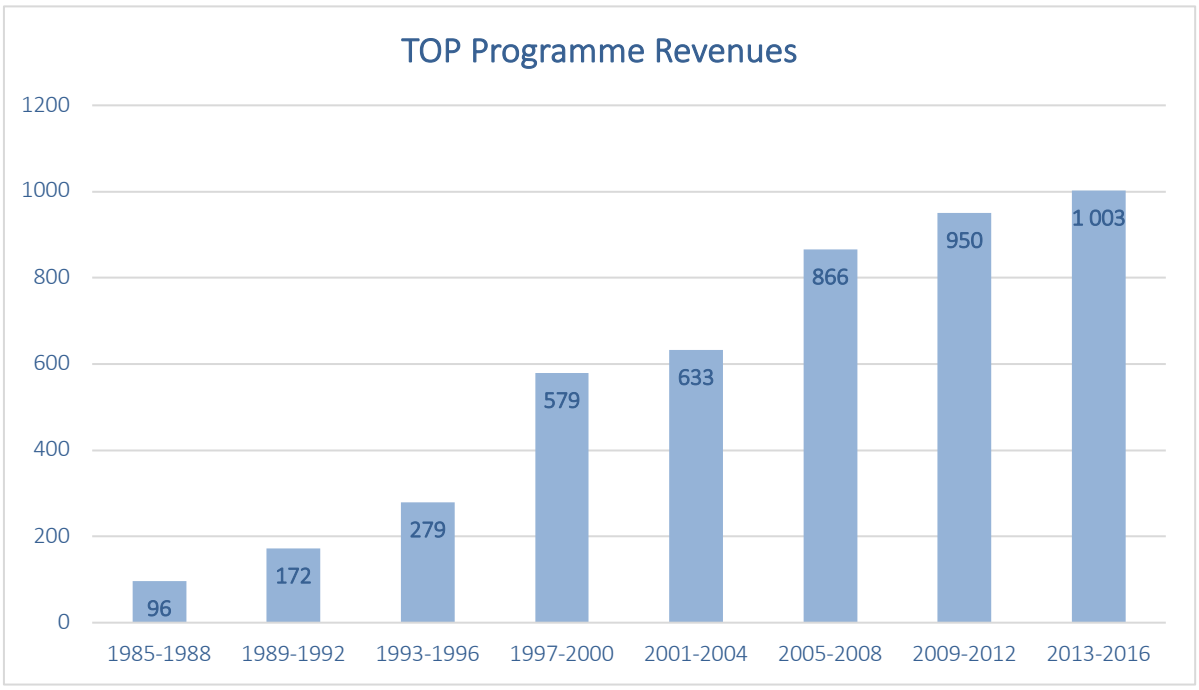
Figure 8: Overview of the Olympic Partner Programme



Source: Own table based on the IOC Annual Report (2016) & Olympic Marketing Fact File (2018)

From this figure we can see that many of today's partners have been a part of the programme for decades. There has not been a substantial change in the number of partners, although the current Olympiad has a record of 13 partners. The next graph will show the revenue these sponsors has brought in US dollars throughout the history of the programme.

Graph 8: Revenue from the TOP programme (in million USD)



Source: Own graph based on the IOC Annual Report (2016)

The graph above, shows that there has been a continuous rise in the revenues from 1985. The first Olympiad made 96 million USD and grew 79% until the second Olympiad. The largest rise of the sponsorship revenues came in 1997, when the financial payment more than doubled from 279 to 579 million USD. The last extensive rise came in 2005, when the revenues grew with 37%. The growth of the last completed Olympiad was the lowest with 6%, however it reached a payment over 1 billion US dollars. Therefore, one can also argue that the low relative rises can come from the fact that the numbers have gotten so high that the added amount in percentage of the sum is not as significant as before when the totals were lower. The expansion of attending nations and athletes made it attractive to be an Olympic Partner, as it is spread and reached people world-wide. Especially, with the development in broadcasting, the advertisement partnership became of high value for the companies as more TV viewers meant more eyes watching and possibly more sold merchandise and products associated with the Olympics. For example, companies usually make an Olympic edition which is sold before and during the Olympic Games while promoted in the host cities. As the definition of the Olympic

Games states, it is the most prestigious sporting event and these entities pay for the association between their goods or services and the Olympic Games.

4.1.4 Other revenues and other rights

Other revenues and other rights are the smallest sources of revenue for the IOC. Even combined they are not significant. More precisely, other revenues made 5% of the IOC's total revenues for the period 2013-2016, while other rights made 4%.

The entries that fall under other revenues are:

- Unilateral and Paralympic broadcasting revenue
- USOC contribution to the Olympic Summer Games
- Other revenue

Under other rights, they have placed:

- OCOG marketing programme
- Suppliers
- Licensing
- Other

4.1.5 Distribution of IOC revenues

As previously mentioned, the IOC distributes 90% of their revenue to organisations belonging to the Olympic Movement. They help the Organizing Committees of the host cities (OCOGs), NOCs and IFs finance different activities. On average, the IOC distributes over 3 million USD to support athletes and sports organisations worldwide at all levels. Table 10 and 11 will display the input from the IOC to the host cities of the last four Summer and last four Winter Olympics.

Table 10: IOC contribution to Summer Olympic Games (in USD)

Year	Summer Games	Host Cities	Growth
2004	Athens	965 000 000	
2008	Beijing	1 250 000 000	30 %
2012	London	1 374 000 000	10 %
2016	Rio de Janeiro	1 531 000 000	11 %
	Total	5 120 000 000	59 %

Source: Own table based on the Olympic Marketing Fact File (2018)

Table 11: IOC contribution to Winter Olympic Games (in USD)

Year	Winter Games	Host Cities	Growth
2002	Salt Lake City	552 000 000	
2006	Turin	561 000 000	2 %
2010	Vancouver	775 000 000	38 %
2016	Sochi	833 000 000	7 %
	Total	2 721 000 000	51 %

Source: Own table based on the Olympic Marketing Fact File (2018)

These numbers do not say much on their own. They only say that the hosts of the Summer Games receive more from the IOC, with can be explained by the fact that the arrangement is of much larger size in all aspects, rather than the Winter Games. Also, the numbers show that the growth of the contribution has been more stable for the Summer Games. But all in all, the relative growth of total contributions has been similar. However, it is when comparing the total revenue of the IOC to the contributions to the host cities divided up in their Olympiads, it gets interesting. Since the IOC divide their revenues according to the Olympiads, I added the contributions of the Winter and Summer Games in the same Olympiad, to be able to compare and calculate how much of their revenue is redistributed to the host cities.

Table 12: IOC contributions as a percentage of their total revenue (in USD)

Olympiad	Total revenue of the IOC	Growth	Host Cities	Contributions	Growth	% of revenue
2001-2004	3 000 000 000		Salt Lake City & Athens	1 517 000 000		51 %
2005-2008	3 900 000 000	30 %	Turin & Beijing	1 811 000 000	19 %	46 %
2009-2012	5 200 000 000	33 %	Vancouver & London	2 149 000 000	19 %	41 %
2013-2016	5 700 000 000	10 %	Sochi & Rio de Janeiro	2 364 000 000	10 %	41 %
Total	17 800 000 000	90 %		7 841 000 000	56 %	

Source: Own table based on the IOC Annual Report (2016) & Olympic Marketing Fact File (2018)

The table above shows that while the IOC's revenues grew 90% over the last four Olympiads, their redistributed assistances only grew 56%. Additionally, the table expresses that there is a downwards trend of their financial help as a percentage of their revenue. Although it has been made clear that both Summer and Winter Games has evolved significantly, and the publicity around the Olympics concentrates on the costs and losses for each host city, the "mother committee" seems to have other priorities. This means that either the IOC keeps more money to themselves or chooses to redistribute them to other parts of the Olympic Movement, which can be interpreted as a questionable strategy with the trends during the last bidding processes.

4.1.6 OCOG revenues

In addition to what the IOC distributes to the OCOG, they have their own income from domestic sponsorships, ticketing and licencing. The NOCs are allowed to have their own domestic commercial programmes, outside of the scope of the TOP programme. The percentages in the table are taken from the total amount and represents the share of their part of the income.

Table 13: OCOG revenues (in USD)

Olympiad	Host Cities	Domestic Sponsorship	%	Ticketing	%	Licensing	%	Total
1993-1996	Lillehammer & Atlanta	534 000 000	49 %	451 000 000	41 %	115 000 000	10 %	1 100 000 000
1997-2000	Nagano & Sydney	655 000 000	49 %	625 000 000	46 %	66 000 000	5 %	1 346 000 000
2001-2004	Salt Lake City & Athens	796 000 000	62 %	411 000 000	32 %	87 000 000	7 %	1 294 000 000
2005-2008	Turin & Beijing	1 555 000 000	77 %	274 000 000	14 %	185 000 000	9 %	2 014 000 000
2009-2012	Vancouver & London	1 838 000 000	57 %	1 238 000 000	38 %	170 000 000	5 %	3 246 000 000
2013-2016	Sochi & Rio de Janeiro	2 037 000 000	77 %	527 000 000	20 %	74 000 000	3 %	2 638 000 000
Total		7 415 000 000		3 526 000 000		697 000 000		

Source: Own table based on the Olympic Marketing Fact File (2018)

From the table it can be seen that the importance of domestic sponsorship has increased, which can be assumed is because the awareness of the governments about the costs is high, and therefore they want to "co-finance" the Olympics as much as possible. The ticketing had a noteworthy trend, where it went down 21 percentage points regarding its share of the total revenues. The absolute numbers however, show that Vancouver and London were clear favourites and shows how important the location of the host cities is for attracting spectators and making money on them. All in all, the total amount of revenue has more than doubled since first recorded in the Olympiad 1993-1996.

4.2 Costs

It is hard to determine the actual costs of hosting Olympic Games. In fact, the costs are harder to determine since it's not a clear cut in what costs considering for example road, railway, airport and hotel infrastructure was driven by the Games or what would have to be done anyway. Additionally, concerns about corruption or cost overruns motive the officials to hide the correct and precise data from the public. It even went as far as the host committee of the Nagano Winter Games in 1998 ordering a part of the event's financial records to be burned, reported by Jordan and Sullivan (1999).

The idea of compact Games has been one of the reasons for the high costs of arranging the Olympic Games. Although, for many hotels and catering business 20-25 min away from the centre of Lillehammer the surprise was rather high and disappointment big when the Games came. The willingness of visitors to commute distances between accommodation and sports venues was much lower than anticipated, reported by Teigland (1999).

The original budget made during the bidding process always ends up being revised and therefore the Games are accepted at a false ground ending up a lot costlier than agreed upon. Teigland (1999) highlights in his work that the cost estimates increased sharply after Lillehammer was elected as the host city in 1988, six years before they hosted the Winter Games. Within six months, the official cost estimates had increased to a level five times higher than originally, before Parliament fixed an upper limit.

However, in the Cost overrun study by Flyvbjerg, Stewart and Budzier (2016) they declare that on average hosting Olympic Games cost 8.9 billion US dollars. In their study though, only the operational costs and direct capital costs are calculated, as reported before, because the remaining cost group is hard to obtain reliable data on. The authors also divide the Olympic Games in Summer and Winter Games, for the same reasons as this paper. Therefore, it can be concluded with the fact that on average Summer Games hosted between 1960-2016 cost 5.2 billion US dollars, while Winter Games for the same period cost 3.1 US dollars.

4.3 Life cycle of the Games and it's economy

To be able to understand the economy of the Olympics, it is important to understand the life cycle of the Games, which is very similar to the life cycle of a project described in chapter 2. This mega project goes over a very long period of time, where approximately seven years are spent planning this 14-day event. Enormous investments have to be made upfront in order to turn promises from the bidding process into reality, to realize visions of roads, railways and competition venues without upsetting the IOC, the local government or residents or the world-wide media. This is where a conflict of interest comes up, as the Games should preferably be profitable, if at all possible, for the host city but on the other hand sustainable and environment friendly. Only upon completing this mega event, the revenues are recognised and the remaining payments like salaries to employees is made. There is a mix of private and public funds injected into the economy of the Olympics, but unfortunately it is hard to obtain the numbers to declare some more detailed sources of funding than already done earlier in the chapter.

The first issue of financing the Games, is met already during the first phase "invitation", where the project is starting and needs a lot of investment before it can proceed to the next phase. Here the cities have a lot on stake, as they already at this point invest a lot of time, effort and money to win over their nation and then the international election round. A key point is to impress the Evaluating Commission when they visit the city, as they assess the situation of the applicant city. Already at this stage, the plans for hosting this mega event has to be carefully prepared. These plans are called Candidature Files and have to include information like architectural renderings, financial estimates and pre-event marketing. More precisely, the financial estimates have to include a budget with the expected investments made by the

government of the host country and the expected revenues. The bid city also has to provide a guarantee that they will "ensure the financing of all major capital infrastructure investments required to deliver the Olympic Games" and "cover a potential economic shortfall of the OCOG" (Flyvbjerg, Stewart and Budzier, 2016, p.6). These Candidature Files are tens of pages, and as one of the minor recommendations in the Olympic Agenda the IOC have decided that it is sufficient to deliver these electronically. Baade and Matheson (2016) highlight in their work that Chicago spent at least 70 million US dollars and maybe even 100 million US dollars on their unsuccessful bid for the 2016 Summer Games. This means that the host cities have to prepay for all costs already from the invitation phase, without having any assurance that their investment will payback and not go to waste like in the case of all cities who are not chosen.

After being elected, the preparation and organization can begin. Since the second "planning" part is over several years, it takes nearly a decade before the private and public stakeholders receive their investments back. Being awarded with the Olympics, can promote foreign direct investment and increased international trade, as the Games causes investors and companies from all around the world to become familiar with the area. The first step towards hosting this spectacular event is to prepare the general infrastructure so it is ready for the big groups of athletes, coaches, service team, medical team, security, volunteers, media representatives and visitors. This general infrastructure means available hotel rooms according to the requirements of the IOC, the Olympic Village and both internal and external transportation opportunities that can move all these people within the host city and outside. Especially the accommodation seems to be a problem for most cities, as they are not even close to being prepared for this kind of demand. Therefore, many builds new hotels, which may result in a severe overcapacity that bring heavy expenditures before the Games and after the Games are left empty. Teigland (1999) mentions in his work that after the Winter Games in Lillehammer in 1994, 40% of the town's full-service hotels went bankrupt. When the plans are made on how to handle all the thousands of people, the next step is to plan the sports infrastructure. Again, most cities do not have facilities that meet the requirements of the IOC, so accordingly they have to invest in some. It depends on the elected city, but in general all cities have to either expand, renew or build most competition venues to be in compliance with the Olympic requirements. Teigland (1999) brings to light another example from Lillehammer, where the two new large alpine facilities have been sold for less than 1 US dollar, to prevent their bankruptcy because of

uncovered debt. Furthermore, even if the city has available competition venues, they might not be good enough for the Olympics. Baade and Matheson (2016) commented on Boston's plan if winning the 2024 Summer Games bid, to build an entirely new stadium for the price of 400 million US dollars, despite the fact that they had four large existing outdoor sports stadiums in the area. This supports many of the arguments that the Olympics are not sustainable and that the requirements of the IOC are partly the reason why many of the host cities undergo such large losses after hosting the Games. However, according to the Olympic Agenda, the IOC will actively promote the maximum use of existing facilities in the future. As the recommendations came in the end of 2014, the first Games affected by these changes will probably be the Summer Games in 2024 or later. Concerning some revenues at this point, most of the tickets are sold in advance of the Games, so therefore it is safe to assume most of the ticketing income comes at this point. However, as seen in the OCOG revenues, the ticketing revenue is not substantial. On the other hand, the accommodation, clothes and equipment for the thousands of volunteers has to be ordered at this point, and maybe even pre-payed.

When all of the scheduled preparations are in place, it is time for the third step "execution". This is when the Olympic Games finally take place and the host city has to cover all the operational costs, or in other words, the OCOG costs. Event management, the opening and closing ceremonies and security fall under these types of costs. Munich in 1972 and Atlanta in 1996 both experienced deadly terrorist attacks, but it was not until after September 11th 2001, the costs of security rapidly increased. In Sydney in 2000 the security supposedly cost 250 million US dollars compared to 1,6 billion US dollars spent the next Summer Games in Athens in 2004, according to Baade and Matheson (2016). The main body of costs are payed during this phase, but then again, the host city finally has some income as the visitors arrive and spend money in their city. During this period the IOC recognises their revenue from selling broadcasting rights, which makes up for 73% of the revenues. At the same time the substantial income from the TOP programme is recognized during this phase, which includes all the income from marketing and advertisement. The volunteers also spend some of their own money, buying souvenirs and other advertisement in the host city.

The last stage of hosting the Olympic Games is “closure” and involves some evaluation meetings on how the project went and whether it met its goals. At this point, the revenue from broadcasting and the TOP programme is recognised. All remaining obligations should be repaid and unfortunately most of new accommodation facilities are left empty, along with many of the sport facilities. After the Olympics ordinarily, the cities have to bear maintenance costs of the giant competition venues, that cost several million US yearly. This is up to how each city wants to deal with and use in the time after the Games. Teigland (1999) mentions that hosting a mega-event can inspire locals and others to organise other events afterwards, at the same location. He calls this the “butterfly effect”, which could be a very good idea, because even these small events may have a large impact over time. Lillehammer was recently used for the Youth Olympic in 2016, which probably would not have happened if they would not host the Winter Olympic Games in 1994. Furthermore, Teigland (1999) emphasises the shame in lost knowledge between the host cities. Assessments of projects that are repeated, just like the Olympics, can build on evidence from earlier cases. The challenge then would be to transfer the previous knowledge to the current situation, as the cities have different starting points. But all of the relevant experience and know-how of previous host cities could be used as guidelines for future practice. Maybe then, it could have been avoided that all Games have an average cost overrun of 156%, as stated by Flyvbjerg, Stewart and Budzier (2016).

This thesis has presented a lot of information on the revenues of the IOC and their distribution of it, compared to a minimum of facts on the costs of hosting Olympic Games, so therefore it is important to mention that this does not mean that the situation of hosting Olympic Games is profitable. Because as Baade and Matheson (2016) further state in their study, in the case of the Summer Games in London and Winter Games in Vancouver, the direct revenues generated by these Games represented only a fraction of the total costs of hosting the events and would by far not cover the total costs even if the IOC had given them all their revenues.

5 Status today

This chapter will provide some insight into the situation today. It will disclose some of the recommendations of the Olympic Agenda 2020 relevant for this paper, before going into more detail on the bidding process, which has a big impact on the economy of the Olympic Games and their future.

5.1 Size of the Olympic Games

The most prestigious sporting event has developed to a size that raises concerns among organizers and is not economically sustainable for most cities. These worries are nothing new. In fact, already in 2002, in Salt Lake City they expressed concerns about the bill, which at that time was equivalent to 2.5 billion US dollars today. That is still significantly better and below the average of 3.1 billion US dollars for Olympic Winter Games. And 12 years later, after a continuous increase in athletes, NOCs, events, volunteers and media representatives, the Olympic Agenda was agreed on, finally introducing some limitations. Recommendation 9 goes into detail on the number of maximum athletes, officials and events for both versions of Olympic Games.

The limits for the Summer Games are:

- 10 500 athletes
- 5 000 accredited coaches and athletes' support personnel
- 310 events

The limits for the Winter Games are:

- 2 900 athletes
- 2 000 accredited coaches and athletes' support personnel
- 100 events

In reality, it means that the Summer Games have to decrease back to the level of contestants from the years between 1996 in Atlanta (10 318 contestants) and 2000 in Sydney (10 651 contestants). This would automatically influence the variable number of volunteers, security, medical and service teams that are dependent on the number of attending athletes and save the host city hundreds of hotel rooms, which results in lower operational costs. On the other hand, the number of events actually opens up for 4 more events than in the last completed Games in Rio de Janeiro in 2016.

When it comes to the Winer Games, the recommendations will not have as big of an effect as with the Summer Games. That is because the last Winter Games invited 2 920 athletes, which is only 20 above the limit. Additionally, the Winter Games will only have to cut two events, which is not significant when arranging a total of 100 events.

5.2 Bidding process

In another attempt to make it easier, cheaper and more attractive to bid for future Olympic Games, the Olympic Agenda has proposed some recommendations towards the bidding process. The recommendations deal with types of costs the IOC will cover for the host cities. The IOC will also cover some of the costs connected with the required steps of the bidding process which the host cities had to pay for until now. Furthermore, it mentions how the IOC will try to shape the bidding process more as an invitation to make it easier to apply. The last completed bidding process for the Summer Games in 2024 was historical and particularly interesting for two reasons - the result in double-allocation and its high withdrawal of applications. Out of the six cities that started out in September 2015, Hamburg, Rome, Budapest and Boston retracted their applications, leaving only Paris and Los Angeles in the battle for the Summer Games in 2024. According to the Vice-president of the IOC, the four cities that needed to withdraw their applications, did so due to lack of public or political support.[24] Revealing two host cities at once for two future Summer Olympic Games had never been done before, and for the Olympic Movement, this act of double-allocation served as assurance for the next decade regarding the Summer Games. For the public, it was the first sign

[24] LIVINGSTONE, ROBERT. *Double Olympic Bid Allocation Highlights Future City Challenges*. [online]. 2017. GamesBids.com. [cit. 2018-01-09]. Available from: https://gamesbids.com/eng/summer-olympic-bids/future-summer-bids/double-olympic-bid-allocation-highlights-future-city-challenges/

of willingness of the IOC to change its ways of business and with a continuation of this proactive behaviour they may attract more host cities for the upcoming bidding rounds. The following table will show the steps of the last completed bidding schedule, before the changes of the Olympic Agenda will come into effect. This table will show us that 250 000 US dollars were required to be payed merely as a fee to be able to continue in the bidding process. That is without all the usage of different resources such as hours of planning, projects expenses regarding consulting companies, wages to the people involved and travelling expenses related to the kick off meeting, workshops in Lausanne and presentations in Aarhus.

Table 14: Schedule of the bidding process for the Summer Games 2024

Date	Summer Games 2024 Bid Schedule
15-Jan-15	Invitation Phase Begins
15-Sep-15	Candidate City names submitted
23-25 Sep 2015	Candidature Process kick-off meeting
16-Oct-15	Payment of instalment 1 (USD 50 000)
16-Nov-15	Week of individual workshops in Lausanne
17-Feb-16	Deadline for submission of: Candidature File Part 1
Feb to May 2016	Evaluation Commission dashboard report to the IOC EB
16-Jun-16	IOC EB confirms cities for the next stage
Jun-16	Individual workshops (feedback on Stage 1 submission)
Jul-16	Payment of instalment 2 (USD 50 000)
07-Oct-16	Deadline for submission of: Candidature File Part 2
Oct to Nov 2016	Evaluation Commission dashboard report to the IOC EB
06-Dec-16	IOC EB confirms cities for the next stage
Jan-17	Payment of instalment 3 (USD 150 000)
03-Feb-17	Deadline for submission of: Candidature File Part 3
04-Apr-17	ASOIF Introduction Presentations in Aarhus
May-17	Evaluation Commission visits LA and Paris
05-Jul-17	Publication of the EC Report
11-12 Jul 2017	2024 Candidate City Briefing for IOC Members and Summer Olympic International Federations
13-Sep-17	Election of the Host City 2024

Source: Own table based on Games Bids

Compared with the recommendations of the Olympic Agenda, the bidding process should be cheaper as a result of the IOC bearing these costs:

- the visit of the Evaluation Committee
- travel and accommodation for six accredited delegates for the Candidate City Briefing and for the ASOIF Introduction Presentations
- travel and accommodation for 12 accredited delegates for the IOC Session at which the host city is elected

This may seem as a generous help at first glance, however, all of these occasions happen after the third payment is done. Therefore, this only helps towards the end of the bidding process, meaning that the high expenditures that come along with initiating the bidding process will still be there. The financial payments of 250 000 USD still have to be made and are not mentioned in the Olympic Agenda.

5.3 Mid Way Report

According to the Mid Way Report on the Agenda 2020, published in September 2017, where they evaluate their own progress of the 40 recommendations they have taken action on, the IOC states that more than half of the recommendations are implemented or close to completion. As they are valuing their own work, it has to be assumed that the report is biased. Nevertheless, regarding their aspect of sustainability, they have declared that any proposed new venues require evidence of clear legacy value. This will decrease the future costs of a host city after hosting Olympic Games, as they traditionally have to spend millions of US dollars to maintain the big areas afterwards. The IOC has also opened up for more flexible planning, allowing the hosts to be creative and make the Games more suitable for their city. For the first time, they opened up to the thought of using temporary and demountable venues, which LA and Paris already included in their bidding procedure for the Summer Games in 2024. This would also help decreasing costs after hosting the Games. In addition, the IOC has eliminated the venue seating capacity requirements, which means that some current facilities may be good enough and high expenditures on many new competition venues can be avoided. Furthermore, the IOC can allow in exceptional cases for some of the events or sports to be held

outside of the host city or even the host country, for reasons of sustainability. As goes for transparency, the IOC has made the Host City Contracts public, disclosing their financial contribution of 1,7 and 1,8 billion US dollars for the upcoming Summer Games in 2024 and 2028. Unfortunately, this cannot be compared to previous numbers as there are only shared numbers of the total contribution of the IOC during Olympiads and not specific Games. However, taking into consideration that the last contribution of the IOC was 2,3 billion USD during the last Olympiad, compared to merely the Summer Games receiving 1,7 billion USD alone, it hints at increased contributions from the IOC in the future.

5.4 Overlook for the future

It may seem as the worst period for the IOC is over and that they may have started to regain trust from some nations, as seven are confirmed to be interested in the Olympic Winter Games in 2026.[25] However, it is not until some of the cities will have their referendum that it will be clear whether the public is ready to be supportive. Only 6 months ago, in the fall of 2017, the population in Innsbruck voted no to hosting another Olympic Winter Games, despite the fact that they have many of the venues from before and are big fans of Winter sports.

As goes for the recommendations, they have to be transferred into action. After proving to the public that the IOC has changed and adapted, cities and governments will gain belief in hosting reasonable and sustainable Olympic Games. For example, Los Angeles, has proposed using existing college dormitories at UCLA and the University of Southern California for athletes housing during the Games in 2028, thus eliminating over $1 billion in costs for an athletes' village from their original plans, according to Baade and Matheson (2016). This type of action is required if the Olympic Games are going to become sustainable.

One thing is that the IOC now allows this type of arrangements in the Games. They have opened up for the possibility of making the Games more affordable and rational, so consequently also less fancy. Thus, it is crucial that in the upcoming elections the IOC does not pick the host cities

[25] GROHMANN, KAROLOS. *Seven cities confirm interest in 2026 Winter Games: IOC.* [online]. 2018. Reuters. [cit. 2018-05-13]. Available from: https://www.reuters.com/article/us-olympics-2026/seven-cities-confirm-interest-in-2026-winter-games-ioc-idUSKCN1HA1CI

based on expensive attributes like in the past, but that they rather choose carefully those who stand behind their values of creditability, sustainability and youth.

Perhaps, an idea for the future that could save many of the expenditures might be to pick a few permanent locations for the Olympics that would be spread around the world. In that case, the Games could rotate between these destinations and the venues could be used over and over again, approximately every 20 years. Every location would be on a different continent, so that visitors all around the world would have it relatively reachable once in a while. Most of the cities would be picked based on reasons like the country's economy, interest in Summer or Winter sports, and its position.

For the Summer Olympics, the proposed cities could be:

- Athens, Greece, Europe
- Rio de Janeiro, Brazil, South America
- Johannesburg/Cape Town, South Africa, Africa
- Tokyo, Japan, Asia
- Los Angeles, USA, North America
- Sydney, Australia, Australia

For the Winter Olympics, the proposed cities could be:

- Chamonix, France, Europe
- Vancouver, Canada, North America
- Lillehammer, Norway, Europe
- Beijing, China, Asia
- Lake Placid, USA, North America

All of these locations, except for the one in South Africa have the experience from hosting Olympic Games. That is mainly why they are chosen and because of their geographical location, even within the continents. There are more possibilities for the Summer Games, as most of the continents have the right climate and landscape. The infrastructure of the cities should already

to some extent be developed and able to manage the incoming athletes, coaches, medical teams, security, volunteers, media representatives and visitors. As it seems like the size of the Games will not rise anymore, because of the recommendations, further investments of these direct capital costs would be very small compared to today. As a result of that and the higher contributions from the IOC, a larger portion of the support could be used on covering the operational costs.

Athens and Chamonix would be clear choices as they are the birthplaces of Summer and Winter Games. Rio de Janeiro has newly built competition venues that could be useful and the hotels to accommodate everyone. Because of the five rings on the Olympic flag, representing each of the continents, it would be fair that Africa could host one Summer Olympics as well. South Africa has experience from the World Championship in football in 2010 and therefore has some similar experience of hosting a mega sporting event. Additionally, they have sufficient infrastructure in the proposed cities. Tokyo hosted the Summer Games in 1964 and will in 2020 again, so therefore the city would be prepared to have it again. Los Angeles are preparing for their third Summer Olympics and would be a natural pick to represent North America. To not forget about Australia, Sydney would be a good city for the Olympics to return to. Vancouver hosted one of the most sustainable Olympics to date and has the economy to continue doing so. Lillehammer also has experience from before, and certainly the interest of the people to host spectacular Games in the birthplace of skiing. Beijing won over PyeongChang to represent Asia, because as mentioned earlier, PyeongChang will demolish many of the huge stadiums that were built for the Winter Games. Additionally, there were not many visitors present, so therefore there is a hope for a higher interest when Beijing will host the next Winter Games in 2022. Lake Placid has hosted the Winter Games two times before and would be the only city on the East Coast to host Olympic Games.

6 Conclusion

A lot could be said about the Olympic Games, but throughout this paper the focus has been on its development and how the growth of all its features has affected the economy of it. The paper started with the very first traces of the Ancient Olympics, on which the Modern Games were based on. The purpose of the Olympics was to share the same feeling of belonging during the Ancient days, which has lasted until today and hopefully will continue in the future. During the last century, some feared for the future of the Olympic Games because of political boycotts and global disputes, whereas now the fear is driven by the financials of the Olympics.

The International Olympic Committee was well aware of this worldwide scepticism, and therefore in December 2014 they launched the Olympic Agenda 2020 to start the journey towards regaining trust and reaching manageable conditions for cities to host future Olympics. In 2017, they announced the 2024 and 2028 Summer Games to two cities, which was their first public act of institutional change, which according to Brundtland is a must for sustainable development.

All of these incidents led to the question of how the Olympic Games came into being this inaccessible. Thus, a major analysis was made of the development of attending National Olympic Committees, athletes, events, volunteers and media representatives. All of the aspects were separated into Summer and Winter Olympics, as they have a different timeline and size. The expansion of attending NOCs was shaped by global episodes, which subsequently influenced the number of attending athletes. In fact, it can be said that the Winter Olympics have had a steadier development regarding attending athletes than the Summer Olympics. In the matter of size, the delegations were approximately twice as large at the Summer Games than the Winter Games. Gender equality increased throughout time and was one of the main reasons behind the increase in events, in both Summer and Winter Games. After examining the rising trends of volunteers and media representatives, it was clear that the total size of the Summer Games has grown over four times as much as the Winter Games. On the other hand, the geometric average showed that the average growth from Games to Games has been rather similar for both Summer and Winter Olympics. Regarding the cost per athlete and cost per event, there was a clear leap after the initiation of the TOP programme in 1985, as that was one of the two milestones that marked the shift of how to finance the Olympics for the IOC.

Despite the fact that the Summer Games are bigger in all parts, the Winter Games cost more per athlete and event. This is obviously because of the complexity of the events and equipment needed.

After the analysis, a selection of data on the financials of the International Olympic Committee was presented, as they redistribute 90% of their revenue within their organization, which includes the OCOGs of the host cities. In 1972, the rights of the broadcasting revenues were relocated to the IOC, which was one of the two milestones for the IOC to get out of their growing debt and become profitable. Today, the broadcasting rights make up for 73% of their revenue, while the TOP programme stands for 18%. As goes for the costs, the IOC divides them in three groups, where only two can be used in an academic paper. The first group, operational costs are dependent on all the analysed aspects of the Olympics, and therefore increase in line with the rise of volume. The restraint on athletes in the Olympic Agenda 2020 is very relevant to be able to keep the size of the Olympics stable from now on, which will also make it easier to plan a realistic budget during the bidding process. In fact, this specific recommendation has a larger effect on the Summer Games, which have to decrease in size. Direct capital costs might be reduced as a result of the Olympic Agenda 2020, as the IOC has scratched their requirements regarding capacity in competitions venues, as well as promoting usage of existing facilities.

In this paper the Olympic Games were defined as the “most prestigious sporting event”, as well as a mega project that goes through a certain life cycle. Therefore, the financials are influenced by the process and timeline of the four stages the Games go through such as the bidding process, planning stage, execution section and legacy after. The main characteristic of the economy of the Games is that extensive investments have to be made upfront, where it takes almost a decade before some of it comes back. Most of the revenues are recognized after the completion of successful Olympic Games, such as the significant revenues from broadcasting and the TOP programme. In order to reduce some of the investments made during the bidding process, one of the recommendations was to shape the bidding process as an invitation. This means that the IOC will provide more help with knowledge and financing to the applying cities. However, it does not eliminate the risk that even after that, millions of US dollars could be spent on an unsuccessful bidding round.

Another goal was to suggest a sustainable direction for the future of the Olympics which was proposed in the last chapter of this paper. The main idea of it was to select a few constant cities spread around all five continents, that both Summer and Winter Olympics would circulate in. This way the Games would save extensive investments for direct capital costs like infrastructure and hotels. This would open up for using a larger portion of the contribution from the IOC on operational costs.

Based on this paper, a recommendation on further studies could be to compare the IOC Financial Statements as well as the Host City Contracts over several years, since they will be public from now on. That gives a chance to look at the development after the Olympic Agenda 2020 and compare it to the number of cities bidding for future Olympic Games, to see if it had any effect on the sustainability of the Olympics.

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