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Athletic letter

Olympic venues. History vs. Technology

Las sedes olímpicas. Historia vs. tecnología

Infra-estruturas olímpicas. História versus tecnologia

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The Modern Olympic Games are a continuity of the Olympic Games of antiquity of the eighth century BC, organized in ancient Greece with headquarters in the city of Olympia. It is a reality the marked difference that exists between both events, given fundamentally by the number of events in which they participate, the type of participants and those referring to the venues. In the past, the same city was always used, but nowadays, the different cities are voted on in a secret process. Regardless of the scope and complexity of the events, their organization requires knowledge of the sport involved in the event, management capacity and rigor in their implementation (Magaz & Fanjul, 2012).



In Ancient Greece, the Olympic Games were a series of athletic competitions disputed by representatives of various Greek cities and during the celebration the Olympic truce was enacted to allow athletes to travel safely from their polis to Olympia, there were fewer events and only free men who spoke Greek could compete (Durantez, 1977).

For the realization of this research, authorized sources on the subject were consulted at the international level, in such a way that this research contributes to a systematization on the History of the Olympics. Among these references are the following: (Shmite, 2017; Fernández Revelles et al, 2018; Rangel, Ramírez, 2018; Rivas, Raqueira; Hijos, Roldán, 2019; Sanz, 2020; Oliva, 2020; García, 2021; Quiróz, 2021).

It is estimated that the first Olympic Games were named due to the place where they were held: Olympia, the site of the most important sanctuary of the god Zeus. They were held every four years between July and August. These ancient Games represented a religious manifestation of respect for the gods, contributed to the harmonious development of body and soul, and favored the friendship of peoples and citizens.

These Games are considered the most remarkable competitions in the sports world and the organization of the venue plays a fundamental role for the success of their celebration. That is why the work presented here aims to propose a summary of the Olympic venues with a strong emphasis on the historical conditions and the technological availability used.

Regarding the organization of sporting events, (Aritz, 2012), states that it must have a high level of social impact, a strong media presence and generate economic income.

A dream come true occurred on April 6, 1896 when Baron de Coubertin experienced the rebirth of the Olympic Games, 1,503 years after the Games of Antiquity were banned, Athens was chosen as the first host city of the modern era and for this purpose the Olympic Stadium was built, this time the champions were awarded with medals and the olive wreath.

The II Games, in Paris 1900, coincided with the Universal Exposition in the French capital, a fact that tarnished the importance of the Games.

In the III edition of the games held in ST LOUIS 1904, the same scenario of Paris was repeated, once again they were hidden by the Universal Exposition. They were the first in which gold, silver and bronze medals were awarded to the first three places.

These were the first Games outside Europe and African athletes made their Olympic debut. However, in London 1908, the 4th Olympic Games were the first to be organized professionally. Despite coinciding with the Franco-British International Exhibition, they already had a high profile and a high level of participation.

In contrast, in Stockholm 1912, technological transformations began with innovations such as the electronic measurement of athletics events. In these games, for the first time, a profit was made with respect to the organization's budget. Electric timing was experimented with and the first poster announcing the Games was printed. Athletes begin to step onto the podium to celebrate their victories and listen to the anthems of their nations.



After the interruption forced by World War I, the 1920 Games were held in the Belgian city of Antwerp in recognition of the damage suffered by Belgium during the war. The host country refused the participation of those who had been its enemies in the war.

At these Games, the competition oath was introduced and the Olympic flag was hoisted for the first time. The colors of the five rings (red, green, blue, yellow and black with a white background) represent the union of the five continents and all the flags of the International Olympic Committee (IOC) member countries have at least one of these colors.

In 1924 the Games returned to Paris, the wide participation of countries confirmed the universality of Olympism. According to historical accounts of international sports journalism, they were the first to receive significant media coverage. Dehorter, nicknamed *Le Parleur Inconnu (the unknown reporter)*, went to the Olympic venues to broadcast the competitions.

Amsterdam 1928 was the first Games after the Coubertin era. The Olympic flame was lit in Olympia and transported to Amsterdam via Yugoslavia, Austria and Germany. Los Angeles 1932, the Olympics returned to the United States thanks to the economic support of the movie magnates who avoided the aftermath of the 1929 depression in their country. The construction of the Memorial Coliseum, which was also used for the 1984 Olympics, was sponsored. For the first time, the Olympic Village appeared, it is important to point out that for the first time an attempt was made to standardize the timing method, which since then with the Swiss brand Omega has measured the time of the athletes in 26 Olympics, with an accuracy of 110 seconds.

Victim of another manipulation, in Berlin 1936, Adolf Hitler uses the Olympic Games as Nazi propaganda and the United States tries to boycott them, without success. After the Olympic oath, the regime's flag is raised instead of the five rings flag. By means of relay races, the Olympic torch was brought from Olympia. For the first time, there was television.

The most innovative electronic device of the time was used to mark the times. It was a starting gun that was connected to a box containing several stopwatches that, when the shot was fired to start the race, activated the mechanism that started all the stopwatches at the same time. This helped solve the problem of timing the start of the race, but it was not decisive as to who crossed the finish line first.

The 1940-1946 Olympic Games were cancelled due to the outbreak of World War II. That is why London 1948 was characterized by poor results due to the precarious situation of sport in the world and the lack of resources. They are known as the austerity games.

Helsinki 1952, it returns the Olympic normality, thanks to the economic improvement experienced in many countries. The games of reconciliation, where the Olympic spirit overcame the ideological differences that existed between various countries, unlike Melbourne 1956, when political problems seriously damaged all Olympic values.

Those misgivings that seemed forgotten were revived.

Rome Games in 1960 are televised live by more than 100 channels to different countries around the world.



Tokyo 1964, the first in Asia, aspired to be the first in modernity. The construction of a new swimming pool, a magnificent stadium and the Olympic Village, constituted an impeccable organization; here the prize for fair play began to be awarded. They were the first to be broadcast on television to North America and Europe, allowing the competitions to be shown in real time, achieving a historic event. To this, the slow motion replay and the use of close pick-up microphones for TV were added.

The Japanese watch brand Seiko made its debut as official sponsor, managed to implement the printing chronometer (PhotoFinish), the watch brand Omega helped with electronic timing, since the *Omegascope* introduced the concept of real time on television. Thanks to this, it was possible to keep better statistical control of these Games. The *Shinkansen*, the first bullet train to make its debut in Japan, is introduced.

In Mexico 1968, for the first time, athletes were subjected to anti-doping tests.

South Africa was banned from participating due to its racist policies. This was the first edition of the event organized by a developing country, by a Spanish-speaking nation and the first held in Latin America. They were also the first to conduct gender testing.

Munich 1972 was sealed by the terrorist attack. The first mascot of the Games appears: the "dachshund" Waldi. Something similar happens in Montreal 1976, but this time the interesting aspect is that some African delegations are excluded from the International Olympic Committee because of its racist policy, Apartheid.

Another example was Moscow 1980, which was also marked by the boycott of a large part of the capitalist powers, and the presidency of the Spaniard Juan Antonio Samaranch in the International Olympic Committee began. A similar case was that of Los Angeles 1984 and Seoul 1988, the capital of South Korea, where conflicts continued and many countries did not attend the event.

Barcelona 1992, the first Games without *boycotts*, there were athletes who competed under the Olympic flag because of political situations with their country.

Atlanta 1996 Games were just as disappointing in terms of organization.

The last Games of the Samaranch era, Sydney 2000, a sporting and organizational success, however, when the Games returned to Greece, Athens 2004, it was an edition marked by organizational and budgetary difficulties.

In London 2012, the city hosted the Olympic Games for the third time. It worked to create a sustainable city. It had a strong environmental ecological challenge as it allowed the radical transformation of a large sector, turning it into an innovative sustainable community that offered jobs, accommodation and educational alternatives ([El País, 2012](#)).

Rio de Janeiro 2016, the premiere in South America, a Refugee Olympic Team, composed of ten athletes, competed under the flag of the International Olympic Committee, an unprecedented event in the history of Olympism. The Games were developed with certain organizational deficiencies and some security problems for the participants, first class facilities that soon fell into a lamentable abandonment.

Tokyo 2020, according to ([mediotiempo.com](#), 2021), it had to be held in the summer of 2021 due to the Covid-19 pandemic. A ban on foreign visitors to the Games was imposed to curb the spread of Covid-19 and prevent another wave of the virus in Japan.



Runners used Puma and Nike shoes with a trampoline-effect sole, which led them to break the record it set. Nike combined molecule-sized foams and air chambers that were as strong as a carbon fiber plate in the sole of the Super Spikes. This combination gave runners a boost when impacting the ground with the foot, adding its Polytherm Block Amide (Peba) material and thermoplastic, which adapts to the foot with body heat, showing a lighter and more resistant shoe, giving the athlete more freedom to run.

The Alibaba Cloud appears, a device that facilitated taking metrics of body temperature and heart rate of athletes, capable of predicting a heat stroke or when to take a break for hydration, it prevented 99% of heat strokes during the Olympic Games, thus demonstrating its effectiveness and necessity in cities with high temperatures.

As for Ralph Lauren's climate-controlled clothing, they used the RL COOLING device with which their garments combine fashion and functionality, allowing them to disperse body heat when it detects a rise in temperature. The effect is refreshing, immediate and long-lasting.

Biometric cameras are also used with thermal sensors to detect the athletes' cardiac acceleration and beats per second, wherever they are, and even the athletes' skin color change, as a result of the stress and adrenaline rush of the moment. STATsports' Sonra 3.0 system, another technological breakthrough, is software that can be installed on tablets and smart watches to measure athletes' instantaneous performance. In this way, coaches can adjust techniques and strategies mid-joust, just as athletes can measure when they have their adrenaline peaks.

Runners had breathable shoes and a *flash foam* sole, patented by Anta, an insole that distributes impact energy for greater stability and traction.

Villa Robot. It allowed to receive directions, instructions, advice and even transfer options thanks to the robots. Translation at the moment, software (which currently has 27 languages) to be able to assist the more than 200 participating countries.

Together with the Panasonic Company, a kind of necklace is developed, where the Japanese is translated (to be heard) to the desired language instantly.

Robot cab. DeNA and ZMP worked with Nissan and Toyota to generate driverless cabs that can take tourists and athletes from hotels to the stadium, as well as 8K televisions, with HD technology that, for the most part, has sharp quality and image definition in 4K. With 7,680 x 4,320 pixels, it is intended to be a technology that will be in all TVs in 2020.

Magnetic trains, the new technology in transportation: magnetic levitation, giving stability and speed, the vehicle and 5G Technology, Nokia and DoCoMo join forces to create a network that maintains connection stability and good signal during the Games. To name a few.

The documentary review shows the attributes and abnegations that have been taken into account for the maintenance and organization of the Olympic Games since its rebirth in the different assigned venues and how, from the interior of these, alterations and disruptions have been suffered that have suffocated the good development of the great world sports festival. However, they also show the progress made in the preparation of these events in terms of knowledge transfer, improving social projects, leaving a historical, cultural and ecological legacy, whatever the outcome. In addition, they have



a high level of social impact, a strong media presence and generate a lot of economic income.

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Tania Rosa García Hernández: Conception of the idea, literature search and review, general advice on the topic addressed, drafting of the original (first version), review and final version of the article, article correction, article correction, translation of terms or information obtained, review of the application of the applied bibliographic standard.



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