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# What's Behind a Marathon? Process Management in Sports Running Events

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**Abstract:** The repercussion of urban running competitions such as marathons is tremendous, and the planning of these races involves a large number of strategic decisions. For this reason, this study analyzes the processes of organizing large marathons in Spain. The aim is to propose a systematic and sustainable model of excellence for the organization of sports events based on process management. To design the model, we followed a qualitative methodology using information obtained in 18 semi-structured interviews. The interviewees were experts in charge of the five most significant marathons in Spain (Barcelona, Madrid, Malaga, Seville and Valencia). The final contribution of the study is the proposal of a process map developed by identifying the main areas of competence and tasks, the relationships among the areas, and the timeline of these relationships. The process map unifies the processes established based on the preceding information and classifies them as management, core and support processes. The specific tool proposed is therefore based on the process management approach, which enables the improvement of the organization of sports running events. The tool will help the managers of the events to take decisions from a strategic perspective, and will be useful in making these events sustainable in the long term.

**Keywords:** sport events; events planning; process management; process mapping; marathon; sports management

## 1. Introduction

Running has gained great popularity in recent years, as demonstrated by the fact that 50 million people in Europe run regularly [1]. One of the sports competitions that has grown exponentially in importance is the marathon, with its challenging course of 42 kilometers and 195 meters. At the European level, participation in this demanding competition grew by 10.3 % from 2009 to 2014 [2], stabilizing worldwide after this period [3]. For the marathons that form this case study, the number of runners who completed the race in the most recent year it was held (2019) were 13,445 (Barcelona), 7886 (Madrid), 3263 (Malaga), 9140 (Seville) and 21,226 (Valencia). These are impressive figures compared to past years' averages, and they suggest the boom in these races. There is clearly considerable demand, but also considerable supply. According to the official calendar of the Royal Spanish Athletics Federation (*Real Federación Española de Atletismo* [RFEA]), the number of marathons in Spain increased by over 50% between 2011 and 2019, reaching 23 in 2019.

If we consider the great flow of people who mobilize these events, the positive effects they generate for society—entertainment, social benefits, community pride and economic activity [4,5]—and the challenge of more sustainable management [6], monitoring and strategic planning become crucial. We must not forget that the event's success depends on effective organization [7], and that the search for excellence includes the broad concept of sustainability [8]. In general, the term sustainability is understood as “development that meets the needs of the present without compromising the ability for future generations to meet their own needs” [9] (p. 43). It is also understood as the maintenance of competitiveness [10]. This concept is relevant because it can therefore become a key aspect of organizational excellence [11] and a considerable competitive advantage [12].

Mass events require exhaustive monitoring, but event organization continues to be viewed as an emerging profession that does not require any specific professional certification [13]. Similarly, the context of knowledge of event organization is based on an informal system and is not overly detailed [14]. It is thus necessary to professionalize event management and use management tools tested in other areas to improve events' organizational efficiency. In other words, the resources must be properly oriented and for this, an adequate management model and strategic plan are required. Furthermore, having a clear plan is considered the first step towards a sustainable model [15].

Although athletic events are obtaining increasing scholarly attention, this attention has focused primarily on the analysis of their impact (economic and social [16–18]), the quality of competitions [19,20], the satisfaction of participants and/or spectators [21,22], and the relationships among these dimensions [23]. That is, scholarship has focused on the perspective of the city that hosts the event and on the participants or visitors. Hardly any studies have tackled the phenomenon from the perspective of event organization management. According to Taks et al. [8], future research should focus not only on the outcomes and impact but also on the underlying processes. For example, the key characteristics of events' success or the management skills they involve are rarely studied [6,24]. Authors like Parent [25] do describe sporting events from planning to real application and final post-event reflection, and Allen et al. [26] advocates the idea that the event is the product and the result of event management. The product will be different for each event, but the management processes should be consistent for all events and should provide the knowledge base needed for managing them. Similarly, the goals of stakeholders (participants, spectators, society, institutions, communications media, suppliers, etc.) and the external environment of the event generate the need for a responsible and systematic approach [27]. We can even find studies oriented to management by the processes and application of the concept of the project to events in general [27–30]. Some studies have addressed this need by proposing a division of sports events into phases, areas, or tasks, suggesting the idea of the event as a project [31,32], although these proposals are made from a theoretical perspective.

Following O'Toole [27], the need for an exhaustive account of the stakeholders, risks, complexity, regulations and rules that affect events, as well as their increase in size, number and economic importance, are factors that create the need for a systematic, sustainable, responsible approach to managing them.

This is the view of process management that must be deepened and put into practice. In addition to the magnitude of the issues presented, we lack sufficient clarity on the organizational process to be followed in a sports event. The tools of process management—and its visual representation, the process map—have not been applied to the management of athletic events.

Due to the importance of the topic and the need for studies that tackle the management-related elements, the goal of this study is to assess how a sports event should be managed in order to improve its efficiency levels. To achieve this goal, we will develop an organizational model based on the process management of sports events. One of the main reasons for choosing this type of management is that it is conceptualized as a fundamental pillar for sustainability [33]. We propose a process map that visualizes the organizational process of the marathon clearly, in order to provide a rational analysis and protocol for the organization of running events. Achieving this general goal involves other complementary

goals, such as determining the areas of competence required in a sports event like a marathon, the tasks assigned to each area, a schedule for each task and the relationships established among the work areas.

This article will thus first provide a theoretical review of some organizational aspects of sports events and an initial approximation of their connection to process management in Section 2. It will then review the methodological strategies and tools, as well as the context analysis of the cases studied, in Sections 3 and 4. This review will be followed by detailed presentation of the results obtained (Section 5). Finally, we will evaluate the conclusion obtained and present the limitations of the study, as well as future lines of research.

## 2. Theoretical Background

A sports event is composed of a large number of areas and processes through which a series of tasks must be performed. That is, the sports event can be considered as a project, divided into interrelated processes. A project is “a temporary endeavor undertaken to create a unique product, service or result” [34]. The concept of an event fits the definition of project perfectly. The event shares the project’s three fundamental supports—quality, time, and cost [35]. ‘Quality’ is essential, due to the need to fulfil stakeholders’ expectations; ‘time’ because the event has an ‘expiration date’, the date on which it is held; and ‘cost’, because one of the major road maps of the event will be its budget. One fundamental characteristic of this threefold concept of events is time, which takes priority over quality and cost, as these last two can be sacrificed. A clear example of the importance of time is an unexpected last-minute logistical expense due to failure in planning, such that not overcoming this error could threaten whether the competition can be held. Establishing work areas and processes becomes very important for avoiding such unexpected occurrences, since the focus on processes and their visual application, the process map, are effective tools for managing projects such as a sports event.

### 2.1. Management of Sports Events: Areas Involved

A sports event, like any organizational activity, involves tasks to be performed that are distributed into work areas, which form teams. The tasks are thus grouped into departments or functional areas. Table 1 summarizes the research on the division of labor in sports events [32,36–38]. The approaches are very similar, and differ only in some aspects related to the dimension of the event. For example, Desbordes et al. [39] divides the commercial aspect into two parts: communications media and commercial-sponsorship. Añó [36], in contrast, focuses on the clearly defined specialization of the labor, enumerating a great number of areas. Thus, the functional division depends on the type of event, primarily on its dimension.

**Table 1.** Work areas in a sports event.

Ayora & García (2004)	Economic-legal; Logistics; Marketing; Technical; Infrastructure.
Shone & Parry (2004)	Administration; Marketing; Finance; Visitor services operations; Support services operations.
Desbordes et al. (2006)	Administrative-Financial; Legal-security; Communications-media; Commercial-sponsorship; Logistics; Athletic.
Añó (2011)	Facilities, equipment, and logistics; Promotion and marketing; Economics, administration, and HR; Communications media; Protocol and ceremonies; Technical-athletic; Operations and services; Lodging and transportation; Technology.
Magaz & Fanjul (2012)	Marketing; Protocol; Technical-athletic; Public relations; Communications technologies; Economic-administration; Logistics.

### 2.2. Focusing on Processes: The Process Map

According to the ISO 9001:2015 Standard of the International Organization for Standardization, a process is a set of related activities that transform inputs into desired outputs. Process management

is thus a mode of analysis and continuous improvement of the main activities and fundamental elements of organizations [40]. A process-based approach involves focusing on the processes instead of functional areas, and this helps us to achieve a more holistic systematic view [41]. Process management facilitates the monitoring of the dependencies and interrelationships of organizational processes in order to obtain greater final efficacy and efficiency. Process management can also promote the efficient use of resources, leading the organization to more sustainable actions [42]. Applying process management requires us to define processes and operations, and to establish the relationship among them. For Benner and Tushman [43], process management is composed, first, of ‘mapping’. That is, the first and most important step is to identify the processes and situate them on the process map, in order subsequently to use the map as a guide for establishing improvements. According to Anjard and Diego [44], the process map is a visual aid that serves to represent processes to show how tasks, inputs, and outputs are linked. The process map also classifies the processes into three types based on their temporal importance/urgency, on whether they require more or less attention, and on the quantity of resources to be allocated. Processes are divided into management, core and support processes. Management processes control the organization’s strategies and objectives, and are associated with top management. Core processes seek to deploy the policies and strategies, and are associated with middle management. Finally, support processes are not directly related to policies or strategies, but influence the development of operations, and they support the core processes by offering resources [45,46].

Process mapping is useful for various reasons. First, it helps us to establish a shared understanding of aspects of some complexity and present them in a more comprehensible way to all stakeholders [47]. Better understanding will help organizers to improve process management, enhancing decision taking and assuring the sustainability of the event [48]. Another major advantage is that the map shows the interrelationships by representing them with arrows [49]. The benefits of this tool have been demonstrated in studies of different sectors, primarily manufacturing [50,51], but also in other areas in which protocols are essential, such as healthcare [52–54]. Process maps have even been proposed as an approach to sports events, but from the position of the participant and his/her satisfaction [55].

If a sports event is structured like any business organization and a large number of agents are involved—that is, if there are latent needs to satisfy—the focus on processes seems to be a good solution to ensure that one satisfies these needs. Ultimately, a process map is the graphic representation of the activities of the organizational process that emanates from the needs of the stakeholders (inputs), and that is trusted to result in satisfaction of these stakeholders (results).

As the complexity of the event and the number of factors to take into account increases, it becomes more necessary to orient the management of the event to process management, in order to establish protocols and control. Similarly, the use of new tools and innovation will be based on sustainable development, especially in sports organizations [56]. In the following pages, we use a qualitative methodology that focuses on interviews in order to apply process management to real cases of marathons in Spain, drawing on the knowledge of experts in the different areas involved in organizing these events.

### 3. Research Context

In addition to the significant data presented above showing the importance of running, we performed a context analysis to frame this study. The analysis examines the five most important marathons in Spain in order to understand the situation of each of these athletic competitions. The first and most important criterion for labelling a race one of the most important marathons in Spain is the number of participants in the event in the recent years that it has been held. The data are presented in Table 2.

Second, we present some characteristics that differentiate these competitions from each other, and that explain their national and international importance (Table 3).

**Table 2.** Participants who finished marathons in Spain. Developed by the authors based on official classifications (RFEA webpage).

Year	Barcelona	Madrid	Valencia	Seville	Malaga
2013	14,778	10,462	9646	5963	1523
2014	14,223	11,365	11,323	7695	2520
2015	15,387	12,032	14,074	8651	2778
2016	16,595	10,104	15,839	10,805	-
2017	16,194	10,051	16,172	10,145	2471
2018	13,537	8827	19,246	9494	2410
2019	13,445	7886	21,226	9140	3263

**Table 3.** General information on marathons in Spain. Developed by the authors based on official information (webpages of sports competitions) and interviews performed.

Factors/ City	Barcelona	Madrid	Malaga	Seville	Valencia
<b>Month</b>	March	April	December	February	December
<b>1st year</b>	1978	1978	2010	1985	1981
<b>WA Label</b>	Silver	Gold	Bronze	Gold	Platinum
<b>Main sponsor</b>	Zurich	EDP	Zurich	Zurich	FTA
<b>Management model</b>	CG/PC	AS/PC	CG/PC	CG/PC	CG/CL
<b>Record (F)</b>	2:24:44	2:26:24	2:27:56	2:24:28	2:18:30
<b>Record (M)</b>	2:06:04	2:08:18	2:10:08	2:06:36	2:03:51

Note: WA = World Athletics; EDP = Eléctricas de Portugal; FTA = Fundación Trinidad Alfonso; CG = City Government; PC: Private Company; CL: Club; AS: Association.

#### 4. Methods

The study follows a qualitative approach, and the methodological framework is based on case study research and tied to grounded theory. Grounded theory employs an analytic methodology and data collection to generate an inductive theory about a substantive area [57]. The goal is to develop a theoretical formulation of the area under study by analyzing it in depth.

This article is based on a case study because it seeks an exhaustive, multiperspectival investigation of a specific project in a real context, drawing on investigation through different methods, guided by evidence [58]. A case study is an especially useful technique for achieving the research objectives. The case study method is more suitable than others when three conditions are present: when the research question takes the form of a 'how' or 'why', when one does not need to control for the behavior, and when the research focuses on contemporary events [59].

This study analyzes five cases, the five most important marathons in Spain (Barcelona, Madrid, Malaga, Seville, and Valencia), the comparison of which enables us to analyze key factors involved in their organization. These athletic competitions were chosen by the criterion of the number of participants who finished the race in the last year in which the race was held.

##### 4.1. Data Collection

To analyze the context in depth, we used standardized open interviews [60] with elites or experts [61]. Such interviews provide important information for the research goals, and the interviewees were selected for their unique position within the organization [62]. All held positions of responsibility in the organization and are considered experts in their area; in addition to their work on that specific marathon, most had performed similar functions in other events.

The process followed for conducting the interviews was as follows. After a comprehensive literature review, we designed the specific content of the interviews. The initial proposal was discussed with an expert in the field of event management. After this pretest, some modifications were included and the final content of the interview was established. This final script consisted of seven questions



that focused on the division of labor in the organization, tasks implicit in each area, relationships established within the organization, time devoted to execution of tasks and the tasks' importance. In order to recruit the interviewees, the snowball technique was used [63]. This technique is usually used in the sport management area in order to expand information, particularly in qualitative studies. First, one of the managers of each event was contacted and interviewed. Subsequently, using the snowball technique, additional managers were included to complete the sample and provide relevant information on other specific areas. Interviews were scheduled in-person or by telephone.

We performed a total of 18 interviews with a total of 6 hours of recording. The interviews were performed from January to December 2019 and lasted 20–45 minutes. The conversations were recorded with the informants' prior consent. The informants were assured that the interviews were confidential and anonymous, and that the information would be used for purely academic purposes.

Finally, a balanced sample was obtained based on the specific expertise of the interviewed managers. In total, we conducted 18 interviews with the following experts: 2 experts in the field of sponsorship, 3 sports event CEOs, 2 people responsible for economic and finance aspects, 2 people in charge of the logistics area, 2 experts in marketing, 2 communication managers, 2 people in charge of production, 1 medical manager and 2 people who held a high position in the sports area.

#### 4.2. Data Analysis

As the interviews were being recorded, the audio was converted using Atlas.ti software 8.0 to analyze the information through discourse analysis, which is understood as a way of perceiving language, not as an arbitrary structure but as the activity of subjects inscribed in specific contexts [64]. This conversion was also the basis for developing the coding structure, which defined codes as abbreviated references to an idea [65].

First, the information was organized into folders of documents assigned to each case. Next, the audio recordings were analyzed and divided by creating free citations. Codes were then created inductively using the open coding technique [66] in order to extract information on the areas and tasks, and their importance and timeline. The codes were derived according to the researcher's interpretation, giving priority to *in vivo* concepts (those taken directly from the interviewees' words) [67], and assigned to the quotations. This procedure generated categories whose relationship was analyzed through axial coding [66] in order to help define the relationships established among tasks and areas of work, as well as their importance and sequencing.

As more interviews were added, new codes were created or existing codes were assigned through continuous comparison. No new codes emerged in the last interviews, indicating 'theoretical saturation' [67]. Since no new information emerged that added value to the data gathered, the team members concluded that data collection had reached saturation point and that the sample was sufficient [60].

To achieve reliability, the information was reviewed multiple times, using the constant comparison technique. Additional measures included establishing a close relationship with the context and recording the interviews.

Finally, following a selective process in order to specify, define and purify the information, and taking into account the existing theory, we proposed an organizational model for this type of competition.

### 5. Results and Discussion

The purpose of this study is to propose a model for organizing athletic running events based on process management. To achieve this goal, after gathering and analyzing the information, we present the results of the content analysis and propose the final process map.

### 5.1. Areas and Tasks

First, we must show the areas and tasks tackled in the organization of these competitions. We chose the areas based on the contributions in Table 1 and refined them with the statements gathered in the interviews. The organization of the areas in the five competitions analyzed is similar, although the differentiating factor is the degree of specialization and professionalization, as well as the size granted to each area. We now describe the areas (Table 4).

**Table 4.** Organizational areas and tasks in the marathon competition.

<b>COMMERCIAL-SPONSORSHIP (CS)</b>	CP1: Market survey; CP2: Preparation of sponsorship dossier; CP3: Preparation of proposal; CP4: Adjustment of compensation-services rendered; CP5: Recruiting sponsorship; CP6: Activating sponsorship; CP7: Commercial monitoring.
<b>GENERAL MANAGEMENT (GM)</b>	DG1: Situation analysis; DG2: Objectives and policies; DG3: Sustainability strategy; DG4: Institutional relations; DG5: Coordination of areas; DG6: Support of areas; DG7: Budget monitoring; DG8: Analysis of feedback and improvements; DG9: Event monitoring.
<b>ECONOMIC-ADMINISTRATIVE (EA)</b>	EA1: Financial planning; EA2: Management budget and scenarios; EA3: Legal management; EA4: Budget monitoring; EA5: Documentation management; EA6: Accounting; EA7: Billing; EA8: Tax management; EA9: Subsidy management; EA10: Application for permits.
<b>LOGISTICS-SECURITY (LS)</b>	LS1: Occupancy plan/mobility and signage; LS2: Security plan; LS3: Contacts with security entities and forces; LS4: Security management; LS5: Preparation of permits; LS6: Logistics management (transportation and storage); LS7: Work-related risk prevention; LS8: Cleaning; LS9: Accreditation.
<b>MARKETING-PROTOCOL (MP)</b>	MP1: Marketing strategy; MP2: Corporate image; MP3: Creativity/content; MP4: Audiovisual production; MP5: Fair-expo management; MP6: Entertainment management; MP7: Pasta-party management; MP8: Authorities management; MP9: Timing; MP10: Awards of trophies and prizes.
<b>PRESS-COMMUNICATION (PC)</b>	PC1: Internal communication; PC2: Communications media contact; PC3: Information potential participants; PC4: Information participants; PC5: Dissemination sponsorship images; PC6: Social awareness; PC7: Social networks management; PC8: Webpage management; PC9: Official program; PC10: Announcement-event.
<b>PRODUCTION (PR)</b>	PR1: Suppliers management; PR2: Hiring services; PR3: Production support; PR4: Set-up and break-down
<b>MEDICAL SERVICES (MS)</b>	SM1: Protocolization of medical services; SM2: Medical training; SM3: Prevention and awareness; SM4: Coordination medical teams; SM5: Coordination additional medical services (physiotherapy and podiatrists); SM6: Medical attention.
<b>TECHNICAL-ATHLETIC (TA)</b>	TD1: Design course; TD2: Design exit/finish-line area; TD3: Design drinks stations; TD4: Coordination municipal services; TD5: Management urban areas; TD6: Monitoring federation regulations; TD7: Management elite athletes; TD8: Management registration/bibs; TD9: Parallel races; TD10: Recruitment volunteers; TD11: Volunteer functions; TD12: Training/loyalizing volunteers; TD13: Monitoring race.

Commercial–Sponsorship is an area that sometimes overlaps with Press–Communication and Marketing–Protocol, especially in smaller teams, where, as one of the informants puts it, “we all do a little of everything.” Although it is true that the trend is toward specialization in order to increase

speed and response capability, cost is also a factor. Larger marathons separate marketing, protocol, sponsorship and communication completely. For example, “In communication, we have contact with marketing for creation of advertising campaigns and daily contact with sponsors.”

The General Management of the competition assumes strategic, institutional and coordinating tasks: “The management attempts to support everything that is needed; you are involved in everything”. It is also crucial to establish a sustainable strategy: “One crucial aspect that encompasses many subsets is sustainability, for example, cleaning and social awareness.” In some cases, General Management also assumes responsibility for the Technical–Athletic aspects of the event, giving this area a more prominent position as the “heart of the competition.” In younger competitions, where we identified a separation of General Management from Technical–Athletic management, it may be becoming more necessary to exercise social and political pressure through a more general institutional figurehead of the competition in order to establish the event. Despite the economic and social benefits for the region, hosting the competition also creates conflicts in some aspects of mobility and occupancy.

The interviewees hardly referred to the Economic–Administrative area, with the exception of one event, where the diversity of financing sources required this area for proper control. Even so, it was proposed as its own specific field of competence. As one of the members of this area commented, “We define the budget for the whole competition, establish restrictions, see whether we can make certain decisions, and monitor to avoid surprises.”

Logistics—Security is responsible for making sure that the major elements composing an event of this type are where they should be, and that the whole event is secure. According to one informant, “we manage all of the technical documents, plan infrastructure, and design the security mechanisms.”

Marketing–Protocol is the area responsible for the identity and image of the competition. According to one expert, “This area focuses on visual identity, contents, and creativity.”

The tasks performed by Press–Communication were similar in all cases. In addition to the classical lines of communication oriented to potential participants, sponsors and participants registered, it is crucial to have a line oriented to the inhabitants of the city hosting the event, which sometimes remain in the background. In the words of experts in this area, “It is vital to make the citizens participants, first to inform them and second so that they join the competition to cheer people on.” Finally, in some cases, internal communication tasks become very important, functioning as the ‘glue’ that unites the team.

The area of Production is responsible for making the plans on paper a reality, from the impression made by postering to the uniformity of volunteers. In this case, the experts asserted the potential importance of this area: “We are dedicated to hiring services and managing suppliers.”

The competition’s Medical Services constitute an area within the organization in only one of the cases analyzed. In the other four, they are outsourced services monitored by the General Management or Technical–Athletic management. It is worth stressing, however, that Medical Services should be the most protocolized of all, as indicated by a fragment of one interview:

We worry about how little the medical aspect of running is protocolized. It is important that the medical services are involved as part of the organization, since they are the way we take charge of prevention, coordinating a full medical team, giving instructions for medical attention, etc.

Finally, the Technical–Athletic area, again, is indicated by most interviewees as the central area of the event and, for some competitions, it is even included in the General Management: “At the peak is the management, on which technical management depends, where almost all of the work, administration, marketing, and sponsorship combines.” At other events, the technical section focuses only on logistics, and the sports section covers the rest (the design of the race course, drinks stations, exit and finish line, etc.). One problem with this area is the heavy workload, which one of our informants mentioned: “The more segmented and divided, and the more guidelines there are, the better the work is. This area needs more coordination and less production and bureaucracy.”



After a detailed analysis of the interviews, and considering the need to establish some balance in workload, we propose the following division of areas and tasks for the marathon competition (Table 4).

In addition to the tasks specified for each area, the analysis of the interviews identified other tasks that can be extended to all areas as tasks of support. These are indicated with the abbreviation GN (General), and are: Documentation management (GN1), the Preparation of meetings (GN2), Email management (GN3), Phone management (GN4), the Preparation of reports (GN5), and the Management of complaints and suggestions (GN6).

## 5.2. Relationships Among Functional Areas

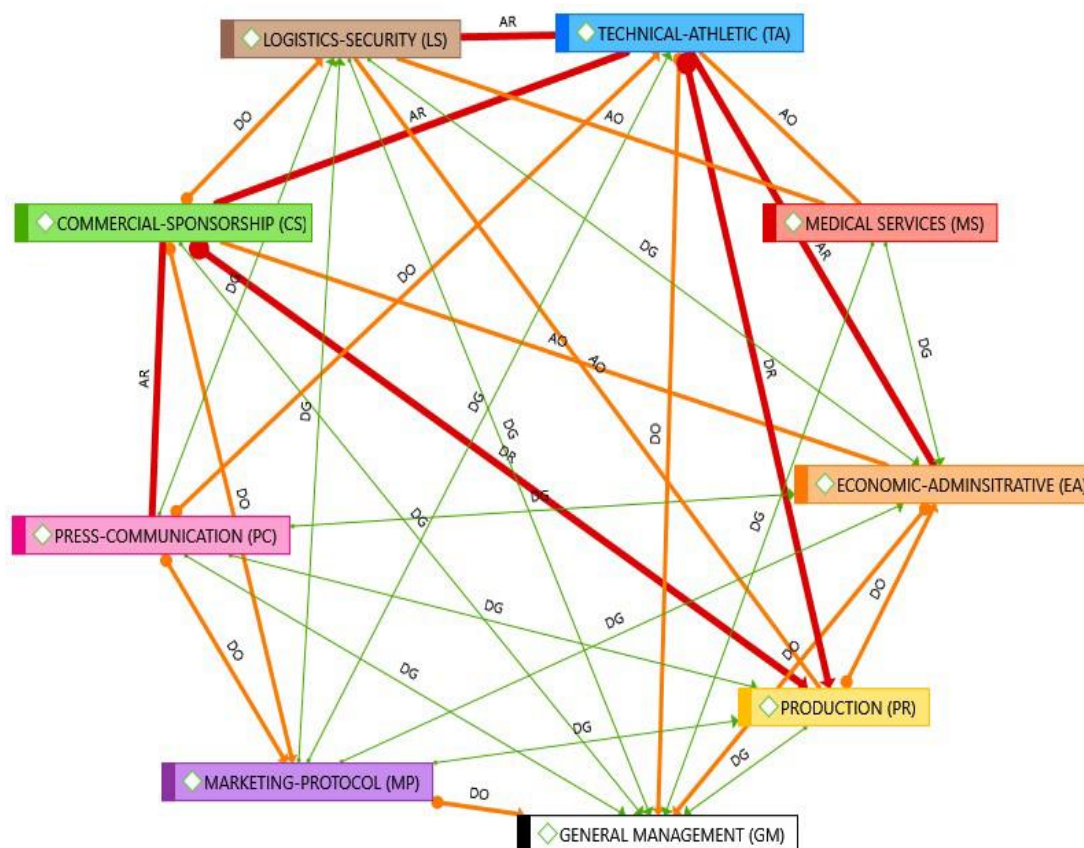
The concepts of process management and process maps imply relationships established within the organization. It is useful to determine what type of relationship occurs among which areas and with what intensity, as these relationships are crucial when improving the management of the event. To visualize these issues, we have developed a network graphical analysis using Atlas.ti software (Figure 1). The image is based on the interviews with experts, which included a question about the work areas with which each expert coordinated in order to perform the tasks assigned. We identified two clear types of relationships from the experts' statements: association (A), indicating a symmetrical relationship among areas at the same level (mutual dependence); and dependence (D), indicating transitive or causal relationships; that is, situations in which one area depends on the results, decisions, or needs of another in order to perform its tasks. We also implemented three levels of intensity based on the number of times this relationship was mentioned in the discourse from the interviews. The first level, high, is indicated in red with a thick line (R), and refers to relationships that were repeated five or six times in the analysis of the entire discourse. Medium, indicated in orange with a line of medium thickness (O), indicates relationships cited three or four times, and low, indicated with a thin green (G), indicates relationships repeated one or two times. The absence of lines between areas indicates that no relationships were identified in the interview texts.

Salient for all competitions analyzed were the relationships established on the dependence on General Management, as well as on the Economic–Administrative area, as these areas are subject to budgetary control. The only areas that established relationships of association with the Economic–Administrative area were Technical–Athletic and Commercial–Sponsorship, since these generate not only expenses but also income (registrations and sponsorship, respectively).

Press–Communication is related to nearly all other areas. According to one of the experts, “Communication is the area that has to talk to everyone, to communicate internally or externally.” Communication depends on the content created by Marketing–Protocol to disseminate the information received, and on Commercial–Sponsorship (establishing a relationship of association, since Commercial–Sponsorship sells aspects of communication to its customers): “If there is bad criticism or they don't know how to manage, the sponsors don't come back, since they didn't get what they wanted for their brand”, and “Sponsors want a lot of communication these days.” On the other hand, for the Technical–Athletic area, “technical information is the most important.”

The following observation from the comments on Commercial–Sponsorship is also interesting because it reveals the work shared among the areas: “Everything that is sold, the whole strategy for making the packaging attractive, has to be consulted with the technical side, permits, etc.” The experts also state that “sponsors sometimes want things we can't provide because they affect security, for example, something that would block flows of people.” Further, sponsors' contribution is crucial at the economic level: “If there is no sponsorship, you can't bring good athletes, you don't break records. The reverse is also true: if the course is no good, sponsors don't come.”

Production depends on many other areas. As the experts interviewed described, “There is always some factor in some area that has to take physical form in production.” Production is thus in constant contact with the Technical–Athletic area, and depends on Logistics–Security for set-up and security.



**Figure 1.** Relationships among the functional areas of the marathon competition.

Returning to the need for total integration of Medical Services in the organization, it is crucial to stress the intensity of the medical area's relationship to Logistics–Security and the Technical–Athletic areas. In the words of one interviewee, “You can't only consider the number of ambulances and doctors based on the number of participants. Medical services have to be inside the marathon and must know the course and other security issues.”

Finally, it is important to stress that the Technical–Athletic area has the most frequent, as well as the most intense, relationships. It is constructed as the central area of the event, something demonstrated by one of the interviewees' comments: “The Technical–Athletic management is the core of the competition. All of the other functions come from it.” This area is therefore a priority to which special attention must be paid in order to ensure that the event is well run.

### 5.3. The Schedule of Tasks

Since it is crucial for the work team of a sports event to have clear timeframes, we consulted the experts about the start and end points of their work on the marathon. The informants stressed the following.

Establishing a schedule of the Commercial–Sponsorship tasks is complex, but we can conclude that these tasks are developed quite far ahead of time: “Selling sponsorship starts that day you know what the event will be. You also try to lock in several years, around three. We improvise a little, make decisions two years in advance.”

The tasks of General Management combine in the early phases of the event, where its foundations are established, since these foundations later support the other areas and are present throughout the organizational process.

As to the Economic–Administrative area, it is difficult to determine its deadlines, since the results of one year's event are intertwined with the start of the next. “Here, we don't work with finite periods

of time; it is more unending, all year long, since we plan meetings where we will talk about the prices for the following year when we haven't even held this year's event yet."

In contrast to the preceding areas, Logistics–Security does not usually last beyond the year; that is, different years do not overlap: "Infrastructure management begins eleven months in advance, the occupancy plan eight months in advance, and the other tasks four to six months in advance." As with Production, Logistics–Security "is usually left for later so that all of the support is up to date. About six months before the event is when this area becomes more important."

Marketing–Protocol differentiates clearly between establishing the strategy and the other tasks to be performed: "The marketing strategy is prepared over the long term, three years in advance. Once this strategy is clear, you work on tactics—content, creativities, etc.—from one year to the next for each year's event."

For Press–Communication, the processes extend beyond one year, but we managed to identify several key points. For example, "We usually leave publication of the program for the end so that the information is as up to date as possible." Or, on lines of communication:

*"Awareness in the city intensifies during the last month, especially the week of the event. The information for potential participants begins the day after the competition and becomes less intense about three months beforehand, since people who are thinking about running have to prepare in advance."*

As to Medical Services for the competition, it is surprising that this area also requires work nearly a year in advance: "The month after the competition, we evaluate how it went and start training from that moment", and "Six months in advance, everything must be clear in order to begin to create and coordinate the team."

Tasks for the Technical-Athletic area, an area essential to the competition, are performed throughout the entire year. For example:

Once the marathon ends, we meet with police and mobility and analyze the course to evaluate it and propose changes. Management of registration for the next year begins the day after the competition and recruiting volunteers begins six months beforehand.

#### 5.4. Determination of Processes and Schedule

After the areas, tasks, relationships among the areas and schedule of tasks are obtained, the next step is to determine the processes and their order, based on their character as management, core, or support. The processes are composed of the various tasks previously defined. They were determined and classified based on: (i) the interviews with experts, whom we asked about which tasks they saw as the most important; that is, to which they gave the most attention; this helped to situate these tasks as part of the management, core, or support processes; (ii) the relationships determined among the areas and explained in Figure 1; (iii) the schedule of the tasks drawn from the conversations, since management processes, for example, must usually be developed and planned farther in advance; and (iv) the theoretical support based on the classification as management–core–support, following the explanation in Section 2. Table 5 lists the processes proposed.

Next, we cite excerpts from the interviews that justify this definition and division of processes:

For strategic processes, the first issue is the analysis and establishment of goals developed based on the information received from all areas. Next comes the planning of strategies in various areas; for example, matters related to marketing: "The marketing strategy is the most important. Nothing can be done casually or improved, and everything has to follow a plan." Similarly, communication starts to function as a glue among the areas communicating internally. Of course, economic–financial guidelines are also defined.

**Table 5.** Processes in the organization of the marathon competition.

<b>Management processes</b>	Mp1: Analysis and foundations; Mp2: Planning strategies; Mp3: Coordination and relationships; Mp4: Technical planning; Mp5: Monitoring and analysis.
<b>Core processes</b>	Cp1: Economic management; Cp2: Brand identity; Cp3: Commercial process; Cp4: Communication management; Cp5: Technical design; Cp6: Technical management; Cp7: Sports management; Cp8: Medical organization; Cp9: Production process; Cp10: Volunteer management; Cp11: Monitoring sports competition.
<b>Support processes</b>	Sp1: General activities; Sp2: Administrative management; Sp3: Dissemination of information; Sp4: Health and safety; Sp5: Parallel activities; Sp6: Protocol.

Technical planning necessarily holds a prominent position. As to medical services, “it would be inconceivable for an event of this size not to pay special attention to the medical area. Medical attention must be immediate, and for that to happen, you have to establish a protocol.” As to technical issues and security:

Ultimately, we are talking about a marathon, which is a race, and without a course, there is no race. The most important tasks are the ones we start working on the farthest in advance, like preparing the security and occupancy plans.

On the other hand, coordinating and establishing relationships is based on the following idea: “For the general view, everything is connected; everything depends on everything else.” Finally, the process of monitoring and improvement becomes crucial, since “we are not improvising; everything follows a plan”, and “monitoring the budget is important because it shows where we are going.”

The core processes are subject to the guidelines that arise from the management processes, and unite the essential tasks: “If they didn’t exist, it wouldn’t be possible to hold the event.” For example, “when the marketing strategy is clear, we go on to brand identity and finally production of the props that embellish them.”

As mentioned above, once the brand identity is created, communication is disseminated. In the process of communication management, the technical information and information on sponsors are disseminated to the public.

Furthermore, if we analyze the ‘heart of the competition’, everything starts from the race course as an element of the management process of technical planning. This is the origin of the technical design processes, the interrelation of technical and sports management, and ultimately the management of volunteers.

Regarding the commercial process, one of the informants explained it clearly:

First, we look at the field, in this case, endurance running. We prepare a proposal to see what brands might be interested, give them an idea of the project, meet, and then prepare a proposal adapted to what we hope to obtain from each brand.

Finally, we established the support processes that unite the tasks to facilitate the running of the core processes. For example, the parallel activities help to complement the runner’s experience. Here, “one error in a parallel activity is a problem, but it is a much smaller problem than making a mistake about the course.”

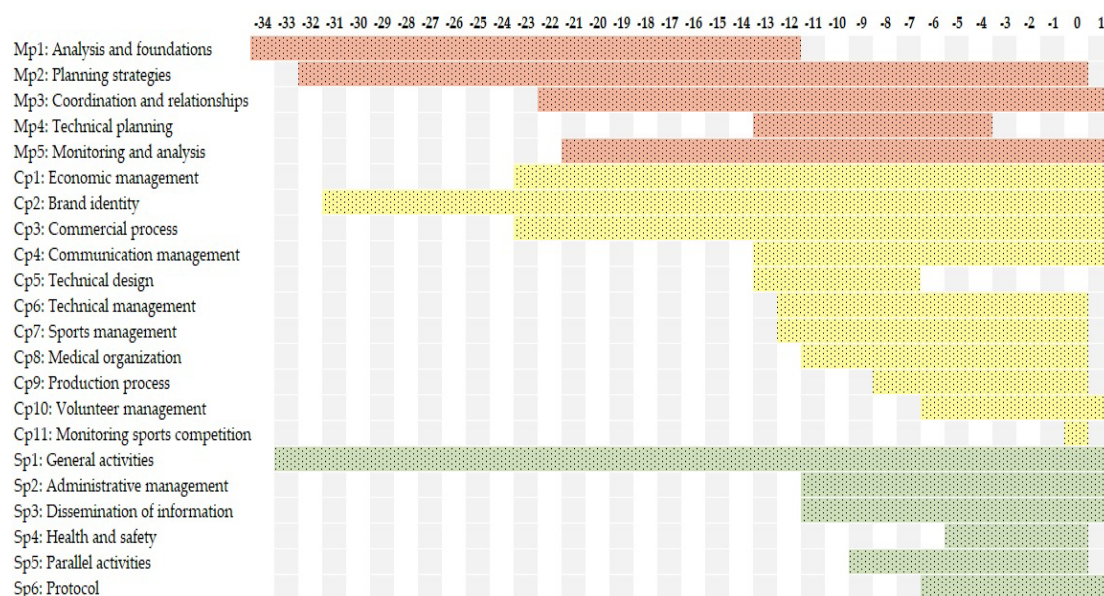
As to other aspects, such as the protocol, “It may be that the protocol, although important to manage with the local authorities and important personages, etc., is not crucial.”

Security must realize that issues such as accreditation help with the general security of the event, since they monitor access, as well as people. Similarly, “administrative management is responsible for fulfilling its agreements through economic management. Here, we process the decisions made by the leadership.”



Regarding communication, managing some tools, such as social networks and the webpage, will help to disseminate information to runners, sponsors and the public.

After analyzing the statements about the schedule and specifying the processes, we gradually established the start and end dates, and the duration of the tasks. These were visualized in a Gantt diagram (Figure 2), which provides a clear picture of the ongoing work throughout the year.



**Figure 2.** GANTT diagram processes for the organization of the marathon. Note: Mp: Management processes; Cp: Core processes; Sp: Support processes.

At this point, we should note that the beginning of the processes was determined by the moment when the earliest task that conforms it begins. The end of the processes was recorded when later tasks end. For example, commercial process (Cp3) will consist of several tasks, which in temporal order are: the market survey, preparation of proposal, adjustment of compensation services rendered, recruiting sponsorship, activating sponsorship and commercial monitoring. This specific process will begin when the market survey is carried out, and will end with the monitoring compliance with agreements.

Since we obtained very similar timelines from experts in equivalent positions for the different events, we chose the most cautious—that is, the longest period of time—in the interest of prudence. We use a generic monthly time scale, where 0 is the month in which the sports competition is held.

### 5.5. Process Map

Based on the qualitative analysis performed through the interviews with experts, we identified the work areas, tasks performed in each area, relationships established among the areas and schedule of the tasks. After obtaining this information, we defined the processes that make up the organization of an event of this type. These processes are constituted as a series of interrelated tasks, and defined based on the tasks and their importance, the resources allocated by the organization to develop the event and the advance notice needed for planning them. The processes were also classified into three groups (management, core and support).

The elaboration of the map followed these steps: according to the statements of the interviewees, the tasks were classified into three groups (high importance, medium importance and low importance), whilst always bearing in mind that all are necessary for the proper development of the sports event. The theoretical definitions of the concepts ‘management, core and support’, as explained above, were also taken into account. Once classified into three levels, they were organized from left to right according to their timing, and finally, groups were made based on the above and on the relationships between the tasks and areas extracted from the interviews.



The end result of this theoretical development was the process map proposed for a sports event of this type, which includes the processes classified and the tasks that compose each process (Figure 3).

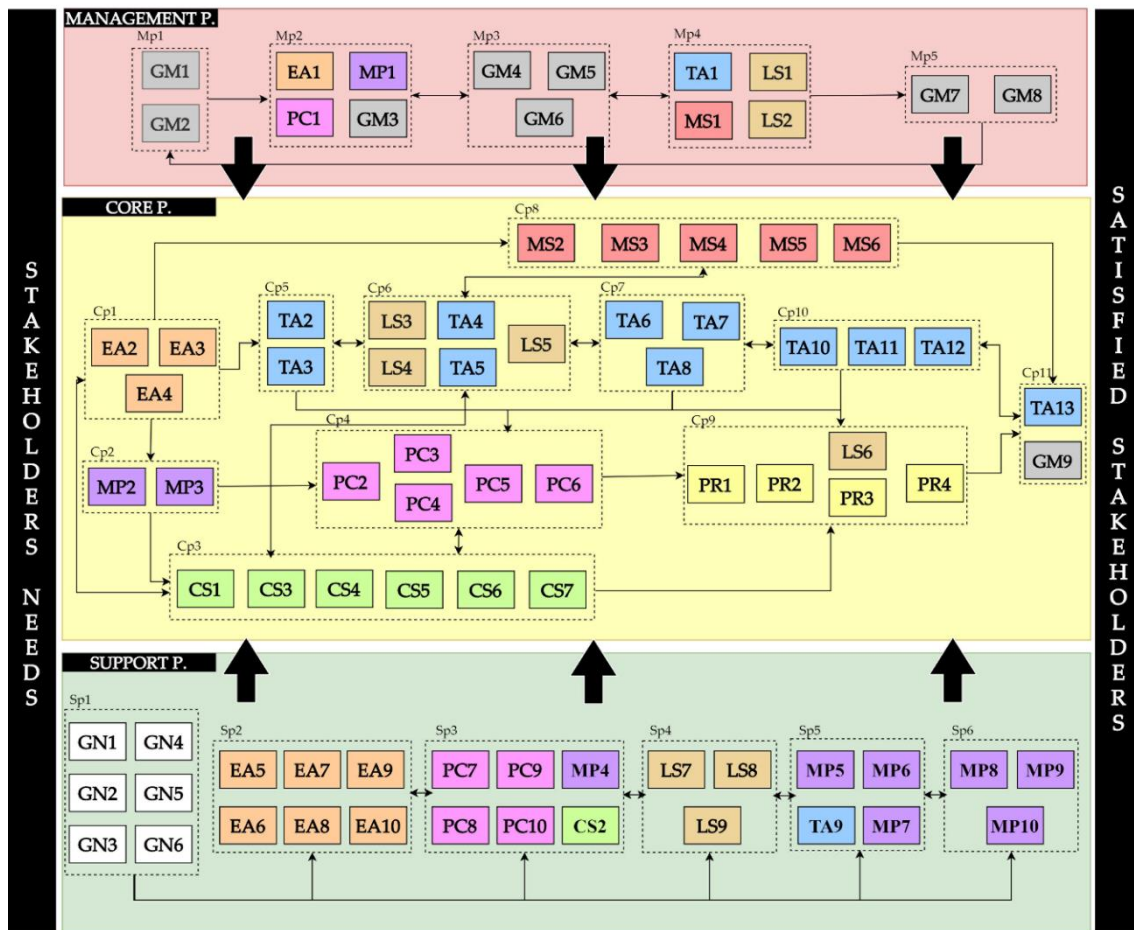


Figure 3. Process map of the organization of a marathon sports competition.

6. Conclusions

Running events, specifically marathons, have become very important in recent years [2]. These events have increased in their number of participants, as well as in economic and social impact, but a lack of directives and coordination sometimes becomes an obstacle to the quality and sustainable management in the service and leisure sectors to which these athletic events belong [68]. In order to improve the events’ efficiency and to achieve excellence in their management, planning must be performed strategically, by adopting a critical and systematic focus [27] using valid management tools with utility demonstrated in other areas. In response to the need expressed in the literature for studies of the topic [8], this article identifies some issues that could help to improve marathon organization by establishing protocols and systematic focuses. The goal is to employ resources through a clear management model, in order to be efficient and sustainable. Process management seems to be a fundamental tool to achieve this, as different authors see a positive relationship between the process-based approach and the integration of sustainability [69,70] within event organization.

This study contributes to the field of sports management by proposing a concrete tool, based on process management theory, to enable users to improve the organization and management of athletic running events, and to implement more sustainable actions [42]. The process map is based on a qualitative methodology grounded in a case study of the most important marathons in Spain. To build this process map, the study identified the main functional areas and the tasks performed by these areas, examined the different relationships among these areas, as well as their intensity, and analyzed the

schedule of the tasks to be performed. Finally, the proposed process map synthesized the different processes (as well as the relationships among them) to be performed in order to manage these events, and classified them into management, core and support processes. Thus, based on empirical analysis, we provided a useful tool for managers seeking to optimize the planning and management of this type of sports events, and established the foundations for an organizational guide for future competitions and a road map for already consolidated events.

Among the more specific results, we would emphasize that the most important functional area in these events, the Technical–Athletic area, is constructed as the central area and, in more established competitions, joins General Management in holding a prominent position. The Technical–Athletic area must also focus on the fundamental tasks, delegating administrative functions to a specific department. The competition further gains value when Medical Services form part of the organization itself, have in-depth knowledge of the technical details of the competition, and are not just a subcontracted element. It also becomes necessary for Press–Communication, on the one hand, to function as an element of cohesion among the other areas, and, on the other, to ensure that the community that hosts the event is a fundamental stakeholder, making that community a participant in the competition so that its members consider the event as something positive for their region.

As to the relationships among the areas, the network diagram determines the Technical–Athletic area as the foundation of the event, since it establishes more frequent and more intense relationships with the others. Thinking backward from the date of the event, planning goes beyond the calendar year, and its organizational processes arise way in advance, with some areas at work up to three years beforehand.

Finally, the proposed map identified the management processes for an event of this type. Special attention, resources and time must be devoted to management processes, which include the analysis and establishment of the foundations, planning of strategies, coordination and relationships, technical planning, and monitoring and analysis. These processes include very important tasks, such as the determination of marketing strategies, budget monitoring and the design of the race course.

Ultimately, the process map can be helpful to organizers in order to manage the resources and coordinate efforts. For example, we have seen that it would be necessary to direct resources towards medical and sport aspects. This better understanding can ensure the event's survival and long-term sustainability.

Although we have drawn important conclusions, this study has some limitations. These include the small number and the specificity of the competitions analyzed—only marathons and, of these, only the most important marathons. Furthermore, the case studies are of sports events held in Spain, although they are events with great international repercussions.

Finally, future lines of research can be identified in order to continue to expand this study. These involve, first, studying the perceived quality and satisfaction of certain stakeholders in the case studies presented in order to determine the key success factors in the organization process. Second, it would be useful to perform a longitudinal analysis and repeat the process for the events in future years, in order to analyze possible changes and improvements. It would also be interesting to validate the model proposed in different and more diverse competitions, or even to analyze other sports in order to gain further insights. Finally, it would be worthwhile to examine the processes in marathons in other countries with different cultures and levels of development, even including great European marathons such as Paris, London and Berlin, or marathons globally, such as Tokyo, Boston, Chicago, or the leading model, New York.

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