Article

Project Management for Corporate Events: A Set of Tools to Manage Risk and Increase Quality Outcomes

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Abstract: The events industry is a project-based industry where sustainable development has been of ever-increasing interest over the last decade. In this regard, the importance of managing risks and delivering quality outcomes in corporate events and the events industry in general cannot be overstated. This paper aims to contribute to the enhancement of project management processes and quality of corporate events, with a focus on risk management. For this purpose, a set of semi-structured interviews with event managers was conducted and thematic analysis was used to qualitatively analyse the research data gathered. Data analysis resulted in the development of a set of tools and methods that have the potential to assist corporate event managers in the project risk management process. This set comprises of a work breakdown structure (WBS) template, a risk breakdown structure (RBS), and a set of risk treatment and mitigation strategies for corporate events. These tools are innovative in the sense that they are based on and correspond to the phases of the event life-cycle rather than individual management domains, have not been developed in unison before, and can be utilized collectively for greater benefits realization.

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Keywords: corporate event; project management; risk management; event management; WBS; RBS; risk identification; risk treatment

1. Introduction

Events have been held throughout humanity's history, most notably for religious and cultural purposes. In recent decades, the rapid growth of the event industry highlighted the need to extend current knowledge regarding good practices for their management [1]. At the same time, concern about the sustainability of human behavior regarding all fields of human endeavor has been growing steadily in the last few decades [2]. Event management is no exception, given the level of the impact potential of the events industry, both economic and environmental [3]. These impacts are associated to all tasks performed during the event dates, as well as all additional project activities regarding event conceptualization, planning, implementation and closure [4].

In recent years, the fields of project management and quality management have begun interacting with the field of event management [5]. In the field of quality management systems, the International Organization for Standardization recognized the necessity and included risk management in the most recent edition of the ISO 9001 standard, making it a vital element of success for quality system implementation [6]. It is perfectly understandable that the dimension of perceived quality is what makes a product or service, such as a corporate event, stand out and be preferred over others, thus ensuring the necessary sustainability to providers. Simultaneously, growing sustainability concerns mandate that event organisations embrace more sustainable methods in managing risks and enhancing the economic, social, and environmental dimensions of the management processes necessary to realise them. As a result, it is necessary to create standard tools and develop methods and techniques for aligning all event-related activities with the mandate of sustainable

growth of the event management field [7]. However, the existing literature regarding the use of standard methods, tools and techniques in the management of corporate events is limited, leading to uncertainty among industry experts [8]. The corporate event industry is expected to grow even further in the future, however, gaps still exist in the research literature on sustainable event management [9].

A key issue recognized in this context is the lack of implementation of project management processes in the management of corporate events. A second one is the difficulty in managing the inherent complexity and uncertainty of these projects, as it is true for all projects in general [10]. Another one is the lack of standard tools to support event planning and implementation, and as a result, event risk management. It is argued that the identification and structural categorization of risks through established tools and methods is elemental in recognizing and eventually successfully managing the potential risks that influence project performance [11]. Finally, another issue of concern is the inability to integrate prior experience and expertise in a systematic way [8]. A lack of standard language and tools to communicate and hence manage risks is not an uncommon issue in many industries, including the events industry, the construction industry, and others [12].

The aim of this study is to contribute to the enhancement of corporate event project management processes, particularly regarding risk and scope management. To accomplish this, the following research objectives were established:

- Development of a template work breakdown structure (WBS) for corporate events;
- Development of a risk breakdown structure (RBS) for corporate events; and
- Identification of risk treatment methods and response strategies regarding risks that may occur in corporate events.

These tools and techniques are expected to lower overall event risk exposure and thus increase event quality. This research focuses on the application of project management methods, tools and techniques to corporate events. It focuses exclusively on corporate events and does not examine other types of events.

2. Literature Review

2.1. Scope Definition for Corporate Events

Events are projects, and for their management and successful completion, it is efficient to use the principles of project management [8]. Every corporate event is held for a purpose and is a gathering of people that produces a measurable outcome [13].

Work and Risk Breakdown Structures are critical project management tools. The Work Breakdown Structure (WBS) is used throughout the project scope management process and the Risk Breakdown Structure (RBS) is used during the project risk management process, and mainly during risk identification [14]. An organization may use a template risk breakdown structure for all its projects or different templates for different types of projects, or it may develop a new risk breakdown structure for each new project [14]. The risk breakdown structure may be based on the work breakdown structure. Through the utilization of the project risk breakdown structure, risks are identified, documented, and categorized for each activity at each level of the work breakdown structure. That way, their assessment and monitoring throughout the project is assisted. Additionally, it is critical to identify, select, and implement specific risk treatment options for all identified and emerging project risks. The combination of these three tools and techniques can significantly enhance the project risk management process, and subsequently, project sustainability.

The existing literature on the use of standard templates in event management is sparse, resulting in confusion among professionals in this field [8], as there is no comprehensive approach, but rather a variety of paradigms and suggested alternatives, some of which conflict with one another. Additionally, many event professionals believe that current academic knowledge frequently does not address their needs, and at the same time they deem it necessary to conduct comprehensive research on the application of specific methods for the effective and efficient management of events, focused on closing this gap [15].

Scientific literature on event management has been quite sparse until recent decades, despite the fact that interest in events has always been high [16].

Business events have grown in popularity in recent years [17]. They are used to accomplish a variety of objectives, including increasing sales, launching a new product, entertaining, rewarding, or training employees, and generally enhancing corporate operations. More broadly, their primary aim is to support the company's communication strategy and marketing plan for growth [18], and they are thus distinguished from events organized for cultural, sporting, political, or other reasons. Indeed, in recent years, as technology has advanced rapidly, events have frequently been held to highlight a company's position in a modern competitive environment. These events are often accompanied by more complex operations, which require large sums of money to execute [19]. Numerous firms in America devote more than \$300 billion annually on hosting events such as webinars, exhibits, and product presentations [20].

The value of conferences regarding economy, society, culture and politics has become widely recognized. Transportation, both global and local, accommodations and food and drink businesses, they all interact with the events industry. As a result, the events industry plays a key role in the sustainable development of the tourism industry [21].

The literature review of this study was conducted in two parts. For the first part, a review of the literature on scope management in corporate event projects was conducted in order to identify activities, phases, and existing work breakdown structures for corporate events. In the second section, a review of the literature on risk management in corporate event projects was conducted, for the identification and study of risk breakdown structures and risk treatment strategies for corporate events.

The literature that was studied regarding scope management in corporate event projects included a total of 48 sources. In-depth analysis was performed to 31 of these, since they provided critical information for the management of scope in corporate events. Out of the 31 studies, those that focus on work breakdown structures in corporate events are 14 and include six books, five research papers, and one graduate thesis. These sources are presented in Table 1 below.

Table 1. Literature sources on work breakdown structures for events.

Source Type	Source
Books	O'Toole and Mikolaitis [17], Bowdin, Allen, Harris, McDonnell and O'Toole [1], Halsey [22], Ferdinand and Kitchin [23], Haugan [24], Fenich [25]
Articles	Zhang, et al. [26], Bergamin, et al. [27], Meléndez de la Cruz and Anyosa Soca [28], Burek [29], McDonnell and Gebhardt [18]
Graduate theses	Spiliopoulou [30]

According to these sources, the work breakdown structure for corporate events may include the following deliverables: facilities, logistics, catering, protocols, location, schedule, operation, transportation, sound and image, entertainment, processes, management, cost, exhibition, presentations, food and beverages, equipment, marketing and advertising, materials, staff, participants, resource management, sponsors/exhibitors and suppliers. It may also include activities associated with the event start, initial communications, planning, finalization, preparation, monitoring, event day, as well as activities associated with the event completion.

In Table 2, literature sources are matched with the corresponding deliverables they propose for inclusion in a work breakdown structure for corporate events.

Table 2. WBS elements for corporate events and corresponding literature.

WBS Element	Source
Facilities	O'Toole and Mikolaitis [17], Zhang, Deng and Zou [26], Haugan [24], Bergamin, Rowe, Beirao, Hopkins and Liu [27]
Logistics	O'Toole and Mikolaitis [17], Burek [29]
Catering	O'Toole and Mikolaitis [17], McDonnell and Gebhardt [18]
Protocols	O'Toole and Mikolaitis [17]
Location	O'Toole and Mikolaitis [17], Bergamin, Rowe, Beirao, Hopkins and Liu [27], Ferdinand and Kitchin [23], McDonnell and Gebhardt [18]
Schedule	O'Toole and Mikolaitis [17], Bergamin, Rowe, Beirao, Hopkins and Liu [27], Haugan [24]
Operation	O'Toole and Mikolaitis [17], Meléndez de la Cruz and Anyosa Soca [28]
Transportation	Zhang, Deng and Zou [26], Haugan [24]
Sound and image	O'Toole and Mikolaitis [17]
Entertainment	O'Toole and Mikolaitis [17], Ferdinand and Kitchin [23], Fenich [25]
Processes	Zhang, Deng and Zou [26]
Management	O'Toole and Mikolaitis [17], Zhang, Deng and Zou [26], Haugan [24], Burek [29]
Cost	Meléndez de la Cruz and Anyosa Soca [28], Bergamin, Rowe, Beirao, Hopkins and Liu [27]
Planning	O'Toole and Mikolaitis [17], Spiliopoulou [30]
Monitoring	Bowdin, Allen, Harris, McDonnell and O'Toole [1]
Exhibition	Zhang, Deng and Zou [26], Haugan [24]
Presentations	Haugan [24]
Food and beverages	Ferdinand and Kitchin [23], Fenich [25]
Equipment	Ferdinand and Kitchin [23]
Marketing and advertisement	Bergamin, Rowe, Beirao, Hopkins and Liu [27], Ferdinand and Kitchin [23], Meléndez de la Cruz and Anyosa Soca [28], Burek [29]
Materials	Burek [29]
Staff	Bowdin, Allen, Harris, McDonnell and O'Toole [1], Bergamin, Rowe, Beirao, Hopkins and Liu [27]
Participants	Zhang, Deng and Zou [26], Bergamin, Rowe, Beirao, Hopkins and Liu [27], Haugan [24]
Resource management	Bowdin, Allen, Harris, McDonnell and O'Toole [1], Bergamin, Rowe, Beirao, Hopkins and Liu [27], Burek [29]
Sponsors, exhibitors	Bergamin, Rowe, Beirao, Hopkins and Liu [27]
Suppliers	Meléndez de la Cruz and Anyosa Soca [28]
Preparation	Spiliopoulou [30]
Starting activities	Halsey [22], Fenich [25]
Finalization	Spiliopoulou [30]
Event day	Spiliopoulou [30]
Event completion	O'Toole and Mikolaitis [17], Spiliopoulou [30], Fenich [25]

The following activities are referenced in more than one source in Table 2 for the second level of the work breakdown structure: facilities, location, catering, exhibition, transportation, logistics, program, administration, meals and beverages, planning, marketing,

operations, participants, resource management, staff, entertainment, and event start and finish. Personnel-related activities, on the other hand, are human resource management activities. Simultaneously, marketing efforts might be interwoven into the design. While the majority of sources in the literature list marketing and advertising as the primary function of the corporate event, depending on the content and nature of the corporate event, this function may be located at the second or other level of the structure. Additionally, activities relating to entertainment are considered to be part of the event's schedule, whilst actions relating to money and functions are considered to be part of the administration. Simultaneously, the provision of meals and beverages, as well as more generally its catering and supply, is a component of resource management operations. Furthermore, transfers may be tied to the location of the event or to resource management in the context of logistics; however, the sources that identify this activity in the corporate event work breakdown structure make no such distinction. The second level of the work breakdown structure may thus comprise of the following activities: facilities, location, program, administration, planning, resource management, and event completion. Following to the analysis, Table 3 summarizes the high-level WBS elements for corporate events identified in the literature.

Table 3. High level WBS elements for corporate events according to the literature.

WBS Element	Literature Reference
Facilities	Offices, catering and cooking facilities, equipment [26] Spaces, stage, decoration, services [27] Parking, signage [17]
Location	Supply, booking, security, cleaning, transportations, desirable suppliers [17] Decoration, equipment, venue [27]
Program	Control [27] Reception, leisure activities, presentations [24] Introduction, presentations, speeches [25]
Administration	Planning, control, configurations, changes [26] Invitations, acceptance, speeches [17] Schedules, registrations [29]
Planning	Preparation, applications, procedures, publications, electronic preparation [26] Materials, equipment [27] Theme, decoration, souvenirs [17]
Resource management	Volunteers, speakers, facilitators [27] Managers, trainers, experts [29]
Event completion	Audience exit, cleaning, equipment reallocation, venue delivery [17] Speeches [25]

The absence of a WBS dictionary to clarify the code names of their deliverables in the majority of work breakdown structures found in the literature precludes a more extensive and in-depth analysis of the work of a corporate event, as described in the current literature.

2.2. Risk in Corporate Events

Risk and uncertainty are part of the nature of events, as it is true for any project. Medical emergencies, terrorism, economic issues and natural disasters can affect the event industry. Perceived event value is significantly affected by the perceived event risk exposure [21]. Economic recessions, terrorism threats and travel security uncertainty can potentially influence convention and exhibition venues due to the global nature of the events industry [31].

Effective risk management can reduce the levels of project time and resources that would be spent to address issues for which no prior treatment or responses has been

decided and implemented [12]. In the event management literature, researchers focus mostly on negative risks and analyze them, in contrast to the scientific discipline of project management, where both positive and negative risks are discussed [3]. Silvers [32] asserts that “risk management is a critical activity and a core competency in event management”. However, no fundamental risk management strategy to corporate events has been devised that can be accepted, reviewed, developed, and further explored by industry specialists [7].

Risks can develop at any point of the event management process. Due to the rapid evolution of technology and trends, corporate event projects are extremely prone to becoming obsolete in design and even before they take place [17]. To identify risks, three critical areas must be considered: safety, security, and capability [13]. Safety risks include those associated with injury, violence, and hygiene; security risks include those associated with property loss or destruction, theft, and catastrophe; and capability risks include those associated with technology, procedures, unattainable objectives, and designs. These risks might be internal in nature and pertain to resource allocation, scope, and changes in project priorities, or external in nature and pertain to environmental risks, weather, competition, or legal status [13]. Additionally, event risks may be classified as technical risks, external risks (regulations, legal status, and weather), and organizational risks (delays, financial risks, staff, and marketing) [33]. On the other hand, Fenich [25] divides the risks associated with corporate events into three categories: physical, technical, and human-related risks. Finally, Tum, Norton, and Wright [34] classify event risks according to their source: personnel, marketing, safety and health, catering, audience, and event resource availability. Additionally, events are classified into low-risk categories (often indoors with specified staff, audience, and suppliers), medium-risk categories (large-scale indoor events held in new locations), and high-risk categories (events involving a large number of people or for which the project manager has little experience) [34].

The large number of participants, volunteerism or poorly qualified personnel, untested venues and locations, inadequate time, complex or specialized activities, the requirement for effective communication linkages and interdependence, a newly formed and inexperienced event management organisation and collaborating with subcontractors or suppliers who will not be impacted by future work arrangements should be considered as key risks and risk factors throughout the risk management process for corporate events [17].

Additionally, there are important risks just preceding the commencement of the event [17]. More broadly, the risks associated with corporate events are frequently tied to time, location, and audience, and as such, these three factors and their distinguishing characteristics must be explored throughout the risk identification process [35].

Some of the risks associated with corporate event projects focus on the interaction between audience dispersal and equipment, particularly near the event’s closure, when there is typically high level of audience mobility. As a result, it is vital to have pre-designed solutions for these movements, as well as customized signs, effective public communication, and a well-organized security and crowd control plan [36]. Event activities should not end all together, regarding crowd management, since this produces congestion and limits to the transportation system by generating bottlenecks in traffic [17]. Additionally, it is suggested to transfer major equipment only when the transport vehicle arrives on site to avoid obstructing traffic, but for minor equipment components, specific markings are frequently used to prevent them from being lost or stolen [17]. There must also be special signs prohibiting visitors from entering inaccessible areas, as well as parking spaces and restrooms [34]. Other potential risks include those involving employees and suppliers. Staff may be unaware of their assigned tasks and duties, which is frequently the result of a lack of a communication strategy or a record of assigned tasks [17]. Additionally, when suppliers are unable to deliver what is required for the event in a timely manner, delays occur, and such issues impact the cost of the project in order to be resolved.

A number of additional risks that may arise during corporate events is discussed by Roger [37]. These risks include the possibility of speaker malfunction, damage to the audio and visual reproduction equipment, the possible lack of accommodation for the

participants and visitor delays [37]. Tum, Norton, and Wright [34], on the other hand, through the example of a conference event, listed risks including the possibility of fire, inaccessibility to the premises, potential accidents, possible absence of audiovisual media and communication, and potential food poisoning.

Some of the risks that are frequently experienced during corporate events are discussed by Allen [3]. Regarding safety, fires, staff behaviors that threaten their well-being or are contrary to the company's values and policy, attacks, collisions, injuries, technical failures, extreme weather, disasters and lack of protection measures are highlighted. Legal risks associated with lack of contracts, licenses and corporate responsibility, concerns associated with exploitation of event staff for responsibilities that have not been agreed upon or anticipated, employee non-compliance to company policy are discussed. Additionally, financial risks associated with the event's location, losses due to cancellations and lack of contracts containing clauses for cancellations are stated as important. Regarding time management, it is proposed that meetings with vendors trying to promote products that are not related to the needs of the event is a risk to be considered. Regarding resources, insufficiency of human resources, lack of qualified employees, shortage of space or inability to obtain an appropriate venue, supplier inconsistency and communication breakdown between the sales or marketing department and the suppliers is possible, leading to poor event quality and failure to meet event objectives. Additionally, closing the event late at night increases the likelihood that staff will not report to or fulfill its tasks the following day. Further, deterioration of the event management organisation's public image, defamation for imitating an event organized by a competitor company and failing to transmit strong messages to the audience can all present as risks in corporate events. Finally, regarding the event audience, there is the potential of dissatisfaction due to non-fulfillment of expectations regarding technical requirements such as speaker performance, audience involvement with different characteristics than those envisaged (age, perceptions, number of participants) and possible non-compliance due to lack of clear risk communication to event attendees.

Since the present work focuses on the specific risks associated with each activity of the event project, information available in the literature addressing the risk breakdown structure of the event is very valuable. The risk breakdown structure is critical for recognizing project risk and may be generated from the work breakdown structure by linking each activity with a set of risks. Additionally, a work breakdown structure is utilized to identify the team members accountable for the management of each identified risk [17]. Numerous businesses use risk breakdown structure (RBS) and work breakdown structure (WBS) to aid both the identification and risk analysis processes [38].

Silvers [32] describes a variety of risks for event projects based on their corresponding WBS elements. Event organisation is divided in the WBS elements of personnel, planning and structure, leading to the identification of risks such as insufficient personnel, lack of trained personnel, planning errors in decision making and misuse of power. Crowd size, behavioral patterns and unruliness are proposed as the WBS items regarding event audience, with corresponding potential issues being audience overcrowding, shortage of moving spaces, tension and panic occurrence, entry without a ticket and protesting. Regarding location, the WBS items proposed were venue spacing, arrival, departure, infrastructure and facilities, lighting and environment. A wide range of corresponding risks was identified, such as not secured space, lack of parking spaces, audience congestion at entrances, accident occurrences, insufficient lighting, heat depletion, dehydration, waste and pollution. Communication is proposed to be broken down to signage, internal and external communication, were inadequate communication equipment, inadequate crisis management plans, insufficient public communication facilities, bad relations with the media and inadequacy of location signs were described as risks, among others. Event activities are divided into dangerous activities and event entrance, where risks like insufficient control of incoming persons of both sexes for dangerous objects and untested fireworks, special effects, lighting equipment, smoke machines were proposed as risk sources. Finally, regarding public security, the WBS elements proposed are antisocial behavior, authorities

and event emergency plan. Some of the risks identified are terrorism, theft and violence, inadequate police presence, inadequate evacuation planning, inadequate medical assistance planning and inadequate fire prevention and detection planning. One may argue that the above risks and corresponding WBS elements are mostly associated with major events, festivals and leisure activities and are more closely related to the implementation/delivery stage of the project.

In a case study done in Egypt in 2019 about the identification of potential risks at the Cairo city festival, the risk breakdown structure of Table 4 is offered. Although the purpose of that research is to identify risks associated with the construction of infrastructure for cultural events [39], the information provided is critical for identifying risks associated with corporate events, as certain types of corporate events require the use of similar infrastructure. According to the literature reviewed for this study, the majority of risks associated with these projects are connected to issues with the plumbing work performed for the structures, issues with material approval, and delays in the delivery of supplies from suppliers [39].

Table 4. Risk Breakdown Structure for event infrastructure construction.

Project	RBS Elements
Infrastructure constructions	Technical risks
	Project management risks
	Economic risks
	Environmental risks
	Organisational risks
	External risks

Adapted from Khodeir and Nabawy [39].

With the exception of a few cases, there is little information in the available literature on the application of project management methodologies to corporate event projects on the risk breakdown structure, in contrast to the work breakdown structure, which has sufficient data.

Moving to strategies and actions for risk treatment and mitigation, Allen [19] asserts that security managers should be well-versed in fire evacuation protocols and equipped with the required credentials to cope with such catastrophic incidents. Alarm systems, particularly for emergencies, must be in place to communicate the emergency message to all participants, including those with hearing impairments [34]. Additionally, it is critical to tour and oversee all of the various facilities and areas that will be used for the event [35], as well as emergency exits [34]. Additionally, when developing the security plan, it is necessary to consider the type of audience for the corporate event, the time and location of the event, the specific activities that will take place, as well as the security documents and contracts [25].

Exploring actions to address each identified risk is critical to the risk management process. It is especially beneficial for this reason to create a decision tree, as there are typically several alternatives for mitigating each risk, and each choice has a distinct impact on the project's cost, time, scope, and quality [13]. Additionally, risk analysis approaches such as data collecting from prior incidents, analysis of recorded experience, and scenario construction can be applied [40].

UWA [41] released an Event Risk Management Guide, which includes a list of potential risks and corresponding responses, as it is shown in Table 5.

Table 5. Indicative risk response measures.

Risk	Indicative Response Action
Possibility of insufficient space availability due to adverse weather conditions	Identifying an alternate venue for the event in advance
Potential personnel vehicles collision	Implementing speed-limits, arranging vehicles to arrive at specified times, and assuring the presence of professional medical personnel in the event area
Possibility of accident occurrence during construction works	Cooperation with specialized subcontractors, adherence to manufacturer's instructions, presence of professional medical personnel in the event area
Possibility of communication system failures	Ensuring the existence of an alternative/backup communication system
Possibility of accident occurrence involving attendee/guest	Ensuring removal of hazardous equipment, application of protective measures
Potential extreme weather conditions may lead to inability to perform event activities	Existence of a list of alternative activities
Possible noise pollution in event adjacent areas	The volume levels should not exceed the legal limits, and inhabitants in the neighborhood should be notified in advance of the event
Potential food poisoning occurrence	Ensuring food safety regulations are adhered to and verify that food providers possess the necessary permits and licenses
Potential for arbitrary admission of groups of persons to the event and incitement of violence	Employing security personnel, overseeing the delivery of invites to visitors, and implementing entrance control measures, such as special wristbands
Potential extreme weather conditions may have a detrimental influence on employees and participants.	Transporting the event indoors, providing shade, providing water free of charge and often reminding attendees to consume adequate amounts of water
Possible lack of parking spaces	Provision of a complimentary transfer services to guests, establishment of more parking spots and encouragement of participants to use public transportation
Potential unavailability of volunteers	Recruitment of volunteers in excess of what is initially required
Potentially inadequately trained employees and volunteers	Assessment of staff and volunteers' qualifications and staff and volunteer training before the event
Possible damage to electrical installations	Collaborating with experienced manufacturers and experts
Possible power outages	Provisioning for the presence of a generator and restricting access to the installation to specialized personnel
Possibility of garbage buildup in the region	Additional garbage bins and recruiting additional cleaning services personnel
Possibility that the event's format does not fulfill its objectives	Connecting the event's activities to its objectives, clear statement of the event's purpose and objectives

Adapted from UWA [41].

When it comes to risk management in corporate event projects, collaboration and knowledge management are effective risk mitigation strategies [17], especially when combined with a comprehensive and collaborative management approach by the event staff, suppliers, volunteers, and other stakeholders [42]. Additionally, the existence of efficient

and effective project team collaboration is stated by Rogers [37] as a vital requirement for lowering event risk exposure in general. Simultaneously, several other risk management approaches are mentioned for corporate events, including the development of alternate programs in the case of speaker absence, the presence of spare/additional equipment in the case of equipment failure, and adequate training of project team members on emergency plans [37].

Finally, Krugman and Wright [35] emphasize the financial risks associated with corporate events. To limit these risks, they assert that it is critical to have event insurance in place for crisis occurrences, environmental risk occurrences, and terrorist threats, as well as potential cancellations or disruptions. When there is no insurance, cancellations typically cost between 1% and 2% of the entire budget [35]. Furthermore, supplementary insurance is required to protect the participants' health and safety [35]. Additional financial risks are associated with the provision of event resources. To eliminate such risks, it is critical to implement systems that guarantee event resources are bought at the right price, at the right time, with the appropriate quality, in the appropriate amount, and from the appropriate provider [34]. Additionally, the organization must be familiar with the strategies and tactics of its suppliers, have established agreements and positive relationships with them, and be able to determine whether it is advantageous to deal with one or more suppliers to gain resources [34].

Although a number of risks and corresponding risk mitigation strategies have been presented in the literature, one could argue that the depth of analysis could go even further, and risks, risk mitigation strategies and risk categories in the form of a risk breakdown structure could be researched simultaneously and form a cohesive whole. This could lead to enhanced risk management for corporate events.

3. Materials and Methods

3.1. Research Approach and Methods

The research used an inductive approach. In several types of qualitative research following an inductive approach is common practice [43]. Detailed readings, coding of raw data and interpretations made from these data by the researchers were used to derive themes, tools and strategies for managing risk in corporate events [44]. In essence, research findings were allowed to emerge from the recurrent, presiding, or significant themes rooted in raw data [43].

This study focuses on tracing the corporate events' nature and emerging risks. Individual attitudes, reactions, opinions, experiences and feelings can all be documented through interviews. As a result, the primary data was collected through semi-structured interviews with senior event managers and top management executives of event management companies. Each interview was conducted in two parts. Raw data was analyzed through the method of thematic analysis. The data from the first part of the interviews were used for WBS and RBS formulation, and the data from the second part of the interviews were utilized for investigating and identifying risk treatment and mitigation alternatives for corporate event risks.

In contrast to questionnaires, interviews are more appropriate for delving deeper into specified research subjects, avoiding generalizations, and in cases where the research concerns an organization or a company, they are recommended for collecting data related to current practices and familiarization with the needs of the company [45]. Project managers often prefer to participate in an interview, rather than spend time completing a questionnaire, while at the same time, the interview allows them to interpret the facts freely and speak without having to explain their arguments in writing [46].

Given the deficit of a solid theoretical foundation and the lack of past similar research to provide survey question validity, it was not appropriate to use a fixed, structured data collection instrument, such as a questionnaire. Through semi-structured interviews though, the researchers can compare the contents of different interviews with one another, and more importantly, allow interviewees to express their personal notions of what is to

be emphasized about the topic at hand. Semi-structured interviews use predefined and targeted questions, with the difference that there is no attachment, that is, the researcher can be flexible and move on to further questions in order to delve deeper into the topic under consideration [47]. Semi-structured interviews are considered appropriate for gathering more detailed data and for better understanding of the subject being researched [45].

A key advantage of this type of interview is the ability to gather information that participants are reluctant to report to other types of interviews due to the lack of interpersonal discussion [46].

The main reasons for choosing this method of qualitative data analysis are the possibility that it gives for the integration of data coming from different views as well as the identification of specific patterns within the data set. This type of interview enables the researcher to analyze points of interest that may not have been given the necessary importance before the interview. At the same time, open-ended questions were formulated because the information they produce is comprehensive and in some cases very specific [46]. The open-ended questions that were developed were clearly worded in such a way that they were understood by the participants and at the same time did not give directions in advance. For this purpose, no negative questions were used, but questions that urge the interviewees to describe the facts and situations, to analyze points of interest and to answer voluntarily.

The interviews were recorded because recording does not require note-taking for participants' responses and the researcher has the ability to focus on the descriptions given without omitting any data relevant to the research [48]. In addition, the recording of calls and the existence of an audio file provided the ability to listen carefully to any information, to concentrate on those data that answer research questions, and to have the opportunity to listen to the material again [46].

Professional practitioners at the top management level in five Greek private event management businesses were interviewed as part of the research design. All participants had significant experience in managing corporate events and their collective experience in managing corporate events is extended beyond 150 events in total. As a result, they had the ability to give high quality, dependable data with validity derived from their extensive insights from several viewpoints into the issue under study. Data cross-comparisons, combined with the researchers' own understanding and expertise in corporate event management offered a measure of external validity.

In order to ensure personal data protection, the participants are cited as Participant 1, Participant 2, Participant 3, Participant 4 and Participant 5. Participant 1 and 4 were mostly involved in corporate events such as annual conferences, exhibitions and training seminars. Participants 2, 3 and 5 were primarily managing product launching events, press events and celebration events.

The participants' experience in managing corporate events is presented in the following Table 6.

Table 6. Research participants experience in managing corporate events.

Participant	Experience in Managing Corporate Events
Participant 1	35 projects, including annual conferences, exhibitions and training and educational seminars
Participant 2	20 projects, including conferences, exhibitions, celebration events, new product launching events
Participant 3	15 projects, including new product launching events, conferences, leisure and entertainment corporate events, press conferences
Participant 4	10 projects, including training and educational seminars, exhibitions, leisure and entertainment corporate events
Participant 5	80 projects, including conferences, workshops, press conferences, new product launching events, celebration events, awarding events

3.2. Data Collection

Five two-part semi-structured interviews were conducted, with five corporate event project managers and executives. The participants interviewed were subject matter experts who were instrumental at the event management process and especially at the event risk management process. They can provide the most detailed and reliable data regarding managing risks and their corresponding treatment strategies.

Participants were encouraged and allowed to speak as much as possible without any interruption. This enables them to provide the answers and insights that are the most important to them. Where the interviewees were hesitant or not thorough enough in their answers, the researchers rephrased the question to prompt more complete responses. The interviewing allowed for in-depth discussion of the research issues under exploration.

The interviews lasted 45 min on average and they were all recorded as digital audio files. After that, they were transcribed into text format.

After the completion of the first interview, data analysis began. In this way, while the initial literature review was the basis of the early interviews, the concepts and categories emerging from the analysis of these initial interviews informed and updated the line of questioning of subsequent interviews. On the basis of the refinement of the ideas and categories established throughout the analysis, the questions kept evolving in subsequent interviews. The continuous juxtaposition of participants' replies, which is regarded as one of the basic analytical premises to achieve theoretical saturation of the topics under consideration, drove the interview process [49].

The key concepts used to generate the questions came from a review of the mainstream literature on corporate event project management. For the formulation of the research questions, it was necessary to investigate the management of risks in corporate events, to understand the present knowledge and identify relevant gaps in it. The research questions were developed as a result of this review.

Two open-ended questions were created for the first segment of the semi-structured interviews:

Question 1: "What are the tasks required for the realisation of a corporate event?"

Question 2: "What risks could potentially emerge in a corporate event?"

Question 1 was created to collect data for the purpose of formulating the work breakdown structure of a corporate event, whereas Question 2 was created to gather data for the development of the corresponding risk breakdown structure of a corporate event. Both Questions 1 and 2 were deemed crucial in achieving the objectives of the research. These questions are very broad in scope, provide no direction to participants, and result in the as effortless as possible recollection of information regarding the tasks the emerging risks of the corporate event lifecycle. Furthermore, based on the information that was gathered, these questions were supplemented with additional questions during the interviews in order to clarify meanings and elicit all information identified as essential for the comprehension and subsequent analysis of the data. In the case a participant had a query about a question, a pertinent explanation was provided.

For the second half of the semi-structured interviews, the following question was developed:

Question 3: "What strategies and treatment options would you employ to manage the risks that emerge in a corporate event?"

This question was chosen as a guide for collecting data on managing the most pertinent risk activities identified in the first segment of the interview and the concurrently developing risk breakdown structure. The question was supplemented with additional questions wherever deemed necessary in order to enhance the understanding, comprehend and subsequently effectively analyse the research data.

At the closing of each interview, preliminary research results were employed to assist in the process. Immediately after the conduction of the first interview, data analysis begun, leading to the formulation of preliminary work and risk breakdown structures. These structures were reviewed and updated after each additional interview was conducted.

These preliminary results were presented during the second segment of the interviews to the participants, effectively assisting their efforts to identify project activities and project risks not yet identified, provide additional treatment options and strategies and provide feedback on the validity and reliability of the insofar research results.

3.3. Data Analysis

Thematic analysis was adopted for analysing the qualitative data acquired through the semi-structured interviews. Thematic analysis is a systematic and logical approach to qualitative data analysis that can be utilized with big or little amounts of data [46]. Additionally, thematic analysis, when combined with abstract and inductive coding, contributes positively to the understanding of significant meanings [50].

Coding qualitative data entails the inclusion of code names that compress or summarize meanings in accordance with the study's objectives [46]. Codes are often a single word or a brief phrase that represents the existence or non-occurrence of an incident, the force of a phenomena [46] or the unique qualities of a scenario [51].

Following the process of codifying the qualitative data, themes and relationships between the recorded codes are identified. A theme is a large category which encompasses several codes that are connected to one another or a single code that comprises a single concept [46]. Each theme presents a pattern that binds the disparate pieces of knowledge together and organizes, explains, and characterizes a particular aspect of the field under examination [51]. To determine the themes, it is determined which codes can cluster with one another and in that way enable further examination of the research data [46]. These codes are semantically related to the research questions, resulting in the creation of distinct themes [50]. In essence, while examining the content of the interview data, the sentences articulated by the participants are the initial images [52]. A subset of these images is categorized and from these subsets medium level statements are formed, that is, codes. Then high-level statements are generated through the larger grouping of medium level statements, that is, themes [52].

For each theme, the codes it includes, and their descriptions were recorded. In total, from the first parts of the interviews, 233 codes and 54 themes were developed.

More specifically, from the grouping of the codes of the required works that contain information related to a common deliverable of corporate events, specific themes were formed. These themes bring together all the required activities into individual deliverables which were sorted by project life-cycle phase to form the work breakdown structure for corporate events. Respectively, common themes were found between the thematic analysis codes for risk, depending on the scope and individual activities of the project. Furthermore, the themes formed after the coding of the qualitative data collected from the interviews convey information on how to manage the risks depicted in the risk breakdown structure. In essence, during the thematic analysis, the project risks were cross tabulated with the relevant project tasks and subsequently treatment options were assigned to the corresponding project risks. Regarding the risk treatment options, themes were recorded only for the risks for whom the participants provided risk response actions and treatment options. As a result, the recorded themes do not cover the complete spectrum of risks included in the risk breakdown structure.

The overall procedure of qualitative data preparation and analysis included the interviews audio material reproduction, the recording and studying of the received information, the meanings output, the codes development, the identification and evaluation of the relations between these codes, the themes creation, and finally, the results extraction.

According to Healy and Perry [53] the quality of scientific research must be assessed in the context of the paradigm in which it was done. The criteria and standards used to evaluate quantitative studies should not be applied to qualitative research [54]. Despite the fact that qualitative researchers employ a different nomenclature, "notions of validity and reliability must be based in the worldview of qualitative research" [55].

Three key aspects of validity must be challenged to verify the rigor of the research: internal validity, reliability and external validity. Internal validity is concerned with the degree to which the research findings are consistent with the reality. Reliability refers to the study findings being congruent with the data obtained. Finally, the extent to which the findings may be applied to other situations is referred as external validity. Qualitative research conducted through semi-structured interviews can have limitations and present challenges, in the form of researcher's bias. An example of this form of bias is the interference of the researchers' professional background in the events industry, which could lead to lack of validity and reliability in the data analysis and subsequent research results. Internal validity and reliability of the research results was challenged at first by the research participants themselves during their interviews. The preliminary results presented during the second segment of each interview were open to judgment by the participants and reviewed and updated based on their comments. Furthermore, all researchers involved performed the data collection and analysis processes to the best of their abilities, in order to ensure internal validity and reliability of the results. Since the research is innovative, there is a lack of corresponding studies regarding risk identification and treatment in corporate events, so the external validity of the results needs to be further tested and verified through additional studies. However, the level of data saturation achieved during the data collection process indicates that the results can possibly be of use to other corporate events of the same size, magnitude and characteristics to the corporate events managed by the participants of this research.

The results of this study are general templates and techniques for managing risk in corporate events. However, the types of corporate events vary and often cannot be managed in a single template, as is true for all projects. This innate heterogeneity of corporate events is revealed in the experience of the participants in the study. They manage events ranging from training and educational seminars to new product launching events and exhibitions to celebration and awarding events, and more. As a result, a potential limitation of this research is that the event managers and event practitioners should consider tailoring the tools developed in this study, to fit their events in the best possible way and maximize their potential effectiveness.

It is useful at this point to discuss some of the ethical considerations that govern the interview process in the context of the research effort. It is critical that the interview process adheres to the confidentiality standards, but also to the concepts of voluntary participation, informed permission, secrecy, anonymity, and accountability for the analysis and reporting of the acquired data [46]. Additionally, it is good to allow interviewees to express if there is anything they do not want included in the results, even if they are reported anonymously. Additionally, prior to the interview beginning, the participant should be told about the nature and goal of the research in order to obtain his or her agreement [47]. Furthermore, when interviewers and other participants accept applications for research interviews, they need to know how long the interview will last in order to schedule the interview within their program's time constraints [46]. All the aforementioned guidelines, confidentiality standards, and codes of conduct were adhered to in the current study. The interviewees were informed in advance of the 45 min duration of the interview, the non-disclosure and safeguarding of their personal data, the research aim, objectives and context, and the recording of the call for which their consent was requested and subsequently provided.

4. Results

4.1. A Work Breakdown Structure Template for Corporate Events

In order to develop a work breakdown structure for corporate events, the themes the qualitative data related to the activities required for the realisation of a corporate event were utilized. The WBS was designed to be deliverable-oriented. The project deliverables resulted from identifying and clustering event project activities performed for a common objective per each phase of the project life cycle, as described by the research participants. The main deliverables of the second level of the WBS were divided in activities that

are performed at the beginning of the project (project starting meeting), in activities for planning, in tasks for the implementation of the project, in tasks for the implementation of the event (performed on event date(s)) and in activities executed at the end of the project, in the context of its closing meeting. The reason this orientation was chosen for the design of the WBS is that all the participants in the research described the necessary tasks required to realise the corporate event per time phase of the project life cycle. They also placed special emphasis on the activities that take place on the date(s) of the event, resulting in the creation of quantitatively many codes for tasks related to this specific deliverable. That is because the date(s) of the event is a distinct phase of the project, it comprises the actual objective of the project, and largely determines the success of the whole project. For this reason, it was decided to elevate this deliverable to the highest possible level of the WBS. Additionally, all tasks that are project milestones are noted as such in the WBS. A milestone is a significant point or occurrence in a project [14]. Milestones are of great value to a project, as they are used to signify the completion, partial or full, delivery or submission of a project's deliverables. Additionally, milestones are used to signify important incidents such as project start, project closure and the beginning or closing of project phases. As a result, they can be of value in establishing the project WBS, schedule, and other project plans and artifacts, and also to the monitoring and controlling of the project progress.

Table 7 presents the work breakdown structure for corporate events, as it emerged from the thematic analysis of the qualitative data of the research.

Table 7. Work Breakdown Structure for Corporate Events.

WBS Code	WBS Element
1	Corporate event
1.1	Project start (Milestone)
1.2	Project starting meeting
1.2.1	Aim, scope, location and quality requirements definition
1.2.2	Event dates estimation
1.2.3	Cost estimation
1.3	Project management
1.3.1	Scope management
1.3.2	Schedule management
1.3.3	Quality management
1.3.4	Cost management
1.3.5	Risk management
1.4	Project Planning
1.4.1	Event schedule planning and activity list definition
1.4.2	Pre-event schedule planning
1.4.3	Post-event schedule planning
1.4.4	Event personnel roles and responsibilities assignment
1.4.5	Personnel training/Specialized staff recruitment
1.4.6	Requirements' reviews
1.4.7	Marketing and promotion planning
1.4.8	Planning of proposals and specifications for subcontractors
1.4.9	Event date definition (depending on designated venues' availability) (Milestone)
1.4.10	Search for suppliers and subcontractors

Table 7. Cont.

WBS Code	WBS Element
1.4.11	Procurement management for the venues
1.4.11.1	Communication with venue managers
1.4.11.2	Venues' specifications and availability check
1.4.11.3	Venues' approval and booking (Milestone)
1.4.12	Procurement management for decoration and audiovisual material
1.4.12.1	Communication with graphic design and advertising organisations
1.4.12.2	Selection and approval of decoration and audiovisual material suppliers (Milestone)
1.4.12.3	Decoration and audiovisual material specifications submission
1.4.12.4	Reception of decoration and audiovisual material samples
1.4.12.5	Submission of required corrections regarding decoration and audiovisual material
1.4.13	Procurement management for the construction components
1.4.13.1	Communication with construction companies
1.4.13.2	Selection and approval of the suppliers of construction components (Milestone)
1.4.13.3	Construction's specifications submission
1.4.13.4	Reception of construction components samples
1.4.13.5	Submission of the required corrections regarding construction components
1.4.14	Procurement management for souvenirs
1.4.15	Procurement management for the logistics
1.4.15.1	Communication with logistics companies
1.4.15.2	Submission of logistics requirements
1.4.15.3	Selection and approval of the logistics subcontractors (Milestone)
1.4.16	Procurement management for the technical equipment and corresponding services
1.4.16.1	Communication with technical equipment supplier companies
1.4.16.2	Submission of the requirements for technical equipment and corresponding services
1.4.16.3	Selection and approval of the technical equipment and services suppliers (Milestone)
1.4.17	Procurement management for the catering
1.4.17.1	Communication with catering companies
1.4.17.2	Catering requirements submission
1.4.17.3	Selection and approval of the catering suppliers (Milestone)
1.4.18	Procurement management for sound engineering, music and artistic performances, presentations, speeches and photo/video shootings
1.4.18.1	Communications with sound engineering subcontractors, artists, performers, presenters, speakers and photographers/videographers
1.4.18.2	Artists and performers availability check
1.4.18.3	Submission of the requirements for sound engineering, music and artistic performances, presentations, speeches and photo/video shootings

Table 7. Cont.

WBS Code	WBS Element
1.4.18.4	Selection and approval of the sound engineering subcontractors, artists, performers, presenters, speakers and photographers/videographers (Milestone)
1.4.19	Procurement management for security
1.4.19.1	Communication with security services providers
1.4.19.2	Submission of the requirements for security services
1.4.19.3	Selection and approval of the security services providers (Milestone)
1.4.20	Procurement management for cleaning services
1.4.20.1	Communication with cleaning services providers
1.4.20.2	Submission of the requirements for cleaning services
1.4.20.3	Selection and approval of the cleaning services providers (Milestone)
1.4.21	Invitations and guests planning
1.4.21.1	Definition of guest list
1.4.21.2	Definition of invitation means of communication
1.4.21.3	Communication with guests to ensure availability
1.4.21.4	Preparation of invitations
1.4.22	Planning for guests' arrivals from abroad and corresponding accommodations (tickets, hotel bookings and restaurant reservations)
1.5	Project implementation
1.5.1	Promotion activities implementation
1.5.1.1	Advertisement of the event in the media
1.5.1.2	Sending informative emails
1.5.2	Delivering invitations to guests
1.5.3	Meeting with suppliers and subcontractors and scheduling their arrival at the venue
1.5.4	Receiving venue clearance to begin preparations for event implementation (Milestone)
1.5.5	Decoration and audiovisual material procurement implementation
1.5.5.1	Final decoration and audiovisual material receipt
1.5.5.2	Preparation/packaging of the final decoration and audiovisual material
1.5.6	Construction components procurement implementation
1.5.6.1	Final construction components receipt
1.5.6.2	Preparation of the final construction components
1.5.7	Technical equipment and corresponding services procurement implementation
1.5.7.1	Technical equipment receipt
1.5.7.2	Technical equipment assembly and preparation
1.5.8	Catering procurement implementation
1.5.8.1	Catering services receipt
1.5.8.2	Food and beverage preservation
1.5.9	Souvenirs procurement implementation
1.5.9.1	Souvenirs receipt
1.5.9.2	Souvenirs packaging and preparation

Table 7. Cont.

WBS Code	WBS Element
1.5.9.3	Distribution of souvenir material to the event site
1.6	Event implementation
1.6.1	Pre-event schedule implementation
1.6.1.1	Cleaning of the site
1.6.1.2	Space organization and decoration
1.6.1.3	Infrastructures' installations at the site
1.6.1.4	Allocation of signs and audiovisual material at the site
1.6.1.5	Allocation of equipment, materials and construction components
1.6.1.6	Soundcheck and event rehearsal implementation
1.6.2	Event schedule implementation
1.6.2.1	Guests' reception and welcoming activities
1.6.2.2	Guests turn-out monitoring and control
1.6.2.3	Communication with the audience and servicing of guests
1.6.2.4	Performances
1.6.2.5	Music shows
1.6.2.6	Reproduction of audiovisual material
1.6.2.7	Sound engineering
1.6.2.8	Presentations
1.6.2.9	Speeches
1.6.2.10	Photo shootings
1.6.2.11	Announcements
1.6.2.12	Contests
1.6.2.13	Prize-giving lotteries
1.6.2.14	Breaks
1.6.2.15	Facilitating venue clearance and guests' departure
1.6.2.16	Souvenir distribution
1.6.2.17	Monitoring and control of the event schedule implementation
1.6.2.18	Security monitoring and control
1.6.3	Post-event schedule implementation
1.6.3.1	Materials packaging, storage and reallocation and infrastructure dismantlement
1.6.3.2	Communication and payment of suppliers and subcontractors
1.6.3.3	Materials transportation and return to subcontractors
1.6.3.4	Cleaning the site after the event
1.6.4	Guided tour to sights and attractions for event guests from abroad
1.7	Project closing meeting
1.7.1	Publishing promotional communication documents and reports of the event
1.7.2	Event review and documentation
1.7.3	Statistical data extraction about the event
1.8	General activities
1.9	Project end (Milestone)

4.2. A Risk Breakdown Structure for Corporate Events

As with the development of the WBS for corporate events, the themes that emerged from the qualitative data analysis and referred to risks in corporate events, were utilized for the configuration of the risk breakdown structure (RBS) for corporate events. More specifically, from finding common patterns regarding the identification of the coded risks and also cross-referencing them with the tasks of the WBS, the individual levels of the RBS for corporate events emerged. The groups of risks formed after the thematic analysis of the data include the risks identified at the project starting meeting, the risks during project planning, the risks during project implementation, the risks during event implementation (event date(s)) and the risks regarding the completion meeting. Therefore, the RBS for corporate events was designed to match and work in tandem with the WBS for corporate events. Table 8 presents the RBS for corporate events, comprising of the RBS elements, RBS codes and their corresponding WBS codes.

Table 8. Risk breakdown structure for corporate events.

RBS Code	WBS Code	RBS Element
1	1	Risks in corporate events
1.1	1.2	Risks in project starting meeting
1.1.1	1.2.2	Potential postponement of event
1.1.2	1.2.2	Potential cancellation of event
1.1.3	1.2.1	Risks regarding aim and requirements
1.1.3.1	1.2.1	Potential non-fulfillment of aim or requirements
1.1.3.2	1.2.1	Potential lack of clearly defined requirements
1.1.3.3	1.2.1	Potential inability to hold the event on the desired dates
1.1.4	1.2.3	Risks in cost estimation
1.1.4.1	1.2.3	Potential cost overruns in case of event postponement/rescheduling
1.1.4.2	1.2.3	Potential financial loss in case of event cancellation
1.2	1.3	Risks in project management
1.2.1	1.3.1	Potential scope creep
1.2.2	1.3.2	Potential errors in estimations of activities' durations during scheduling
1.3	1.4	Risks in project planning
1.3.1	1.4	Risks in event planning
1.3.1.1	1.4	Potential delays during planning
1.3.1.2	1.4	Potential financial wastage and excess in planning
1.3.1.3	1.4	Potential lack of special character of the event schedule
1.3.2	1.4.4	Possible personnel non-compliance with assigned roles and responsibilities
1.3.3	1.4.5	Potential lack of specialized personnel required for performing technical tasks
1.3.4	1.4	Possible existence of another event addressing the same audience on the same date
1.3.5	1.4.6	Potential changes in requirements late in the project schedule
1.3.6	1.4.7	Potentially inadequate promotion activities

Table 8. Cont.

RBS Code	WBS Code	RBS Element
1.3.7	1.4	Risks in procurement management
1.3.7.1	1.4.11.1	Potential errors in communication with venue managers
1.3.7.2	1.4.12.1	Potential errors in communication with graphic design and advertising organisations
1.3.7.3	1.4.12.3	Potential errors in the submission of specifications regarding dimensions and requirements for the decorations and audiovisual material
1.3.7.4	1.4.12.4	Potential receipt of decoration and audiovisual material outside required specifications
1.3.7.5	1.4.13.1	Potential errors in communication with construction companies
1.3.7.6	1.4.13.4	Potential receipt of construction elements outside required specifications
1.3.7.7	1.4.15.1	Potential errors in communication with logistics companies
1.3.7.8	1.4.16.1	Potential errors in communication with technical equipment and services companies
1.3.7.9	1.4.17.1	Potential errors in communication with catering companies
1.3.7.10	1.4.18.1	Potential errors in communication with artists, performers, presenters, speakers and photographers/videographers
1.3.7.11	1.4.18.2	Potential lack of availability of desired music bands for the event date
1.3.7.12	1.4.19.1	Potential errors in communication with security services staff
1.3.7.13	1.4.20.1	Potential errors in communication with the cleaning services agents
1.3.7.14	1.4.14	Potential lack of availability of souvenir suppliers
1.3.8	1.4.21.1	Potential errors in the estimation of the number of guests
1.4	1.5	Risks in project implementation
1.4.1	1.5.2	Risks in invitations delivery
1.4.1.1	1.5.2	Potential invitations delivery at wrong addresses
1.4.1.2	1.5.2	Potential omission of invitations delivery at the required time
1.4.1.3	1.5.2	Potential omission of inviting required stakeholders
1.4.2	1.5	Risks in procurement implementation
1.4.2.1	1.5.5.1	Potential delays in the receipt of decoration and audiovisual material
1.4.2.2	1.5.5.1	Potentially insufficient quantity of flyers and printed material
1.4.2.3	1.5.5.2	Potential delays in the preparation of decoration and audiovisual material
1.4.2.4	1.5.6.1	Potentially unsafe construction components and installations

Table 8. Cont.

RBS Code	WBS Code	RBS Element
1.4.2.5	1.5.6.2	Potential delays in the preparation of construction components and installations
1.4.2.6	1.5.6.2	Possible lack of tools and/or raw materials required for the performance of technical tasks during the preparation of construction components
1.4.2.7	1.5.7.1	Potential delayed receipt of technical equipment
1.4.2.8	1.5.7.2	Potential lack of technical equipment manuals
1.4.2.9	1.5.7.2	Potential delays in the preparation and assembly of technical equipment
1.4.2.10	1.5.7.2	Potential difficulties in the assembly and handling of technical equipment
1.4.2.11	1.5.8.1	Potential delays in the arrival of the catering at the site
1.4.2.12	1.5.8.1	Potential receipt of food and beverages of insufficient quantity
1.4.2.13	1.5.8.1	Potential receipt of food and beverages of unacceptable quality
1.4.2.14	1.5.8.2	Potential errors in food preservation
1.4.2.15	1.5.9.1	Potential delays in the receipt of souvenirs
1.4.2.16	1.5.9.2	Potential delays in the preparation and packaging of souvenirs
1.4.3	1.5	Risks in materials transport and allocation in the venue
1.4.3.1	1.5	Possible delays of materials transport to the venue
1.4.3.2	1.5	Potentially insufficient number of entrances for materials transport and allocation in the venue
1.4.3.3	1.5	Potentially small corridors and bottlenecks in materials allocation in the venue
1.4.3.4	1.5	Potential long waiting queues of trucks
1.4.3.5	1.5	Potential materials damages in transit
1.4.3.6	1.5	Possible equipment theft during transport to the venue
1.5	1.6	Risks in event implementation
1.5.1	1.6.1	Risks in pre-event schedule implementation
1.5.1.1	1.6.1	Potential delays in pre-event schedule
1.5.1.2	1.6.1.2	Potential accident occurrence during space organization and decoration
1.5.1.3	1.6.1.3	Risks in infrastructures installation
1.5.1.3.1	1.6.1.3	Potential accident occurrence during infrastructures installation
1.5.1.3.2	1.6.1.3	Potential errors in infrastructure installation
1.5.1.4	1.6.1.4	Possible errors in the placement of audiovisual material
1.5.1.5	1.6.1.5	Risks in equipment and construction components allocation and placement
1.5.1.5.1	1.6.1.5	Potential lack of auxiliary spaces and areas for temporary storage of materials
1.5.1.5.2	1.6.1.5	Potentially overloaded corridors

Table 8. Cont.

RBS Code	WBS Code	RBS Element
1.5.1.5.3	1.6.1.5	Potential equipment damage during allocation
1.5.1.5.4	1.6.1.5	Potential equipment theft during allocation
1.5.2	1.6.2	Risks in event schedule implementation
1.5.2.1	1.6.2	Potential delays in event schedule
1.5.2.2	1.6.2.1	Potential long guests' queues at event opening
1.5.2.3	1.6.2.3	Potential inappropriate behavior during communication with the audience
1.5.2.4	1.6.2.1	Possible complaints and dissatisfaction from attendees regarding reception service/entrance
1.5.2.5	1.6.2.1	Potential overcrowding at reception area/entrance
1.5.2.6	1.6.2	Potential inability to explain to guests how applications and products work due to lack of promoters' technical training.
1.5.2.7	1.6.2	Potential lightning, sound or other technical equipment malfunction during artistic performances, music shows, speeches, presentations or announcements.
1.5.2.8	1.6.2	Potentially unpleasant audience impressions regarding artistic performances, music shows, speeches, presentations or announcements.
1.5.2.9	1.6.2.8	Potential issues during the use of complex technological applications for presentations
1.5.2.10	1.6.2.9	Potential speakers' delays
1.5.2.11	1.6.2.9	Potentially ill-prepared speakers
1.5.2.12	1.6.2	Potential unscheduled termination of the event
1.5.3	1.6.3	Risks in post-event schedule implementation
1.5.3.1	1.6.3	Potential delays in post-event schedule
1.5.3.2	1.6.3	Potential employees' fatigue
1.5.3.3	1.6.3.1	Possible accident occurrence during infrastructures dismantlement
1.6	1.7	Risks in completion meeting
1.6.1	1.7	Potential delay of completion meeting
1.6.2	1.7.1	Potential omissions or errors in the publishing of promotional communication documents and reports of the event
1.6.3	1.7.3	Potential distortion of statistical data about the event
1.7.1	1.8	Potential extreme weather conditions (storms, heatwaves, etc.)
1.7.2	1.8	Potential conflicts with local community
1.7.3	1.8	Potential non-acceptance of the corporate event by the local culture
1.7.4	1.8	Potential information leak before the event
1.7.5	1.8	Potential defamation for imitating competitors' events
1.7.6	1.8	Potential complaints, accusations or lawsuits
1.7.7	1.8	Possible lack of necessary licenses' possession
1.7.8	1.8	Potential unauthorized use of copyrighted material

It is noted that for some WBS items, such as cleaning of the site (WBS 1.6.1.1) or venues' specifications and availability check (WBS 1.4.11.2), no matching risks were found. On the contrary, for other WBS items several risks and corresponding RBS items were identified, for example in the task technical equipment assembly and preparation (WBS 1.5.7.2) the potential lack of technical equipment manuals, delays in the preparation and assembly of technical equipment and difficulties in the assembly and handling of technical equipment were all identified as relevant risks, emerging for this specific task.

4.3. Risk Treatment for Corporate Events

Thematic analysis of primary data concerning ways of managing risks in corporate events resulted in the emergence of a set of proposed risk treatment methods and response strategies in corporate events. These risk treatment methods and response strategies for avoiding, mitigating, and transferring identified risks that may occur in corporate events are presented in full detail in Appendix A, Table A1.

The risk treatment methods and response strategies which according to the participants are of particular importance for managing risks at corporate events are presented here, along with key risks that they address.

One of the proposed risk treatment methods that was stated by the research participants as critical, especially during the initiation and planning of corporate events is "defining clear event objectives and requirements with the client organisation". This action addresses risks related to lack of special character in the event schedule and changes in requirements late in the project schedule (see Appendix A, Table A1, RBS Codes 1.1.3.2, 1.3.1.3, 1.3.5).

A second risk mitigation strategy stressed as critical for event sustainability by the interviewees is "contract issuance and signing" with client and suppliers. Through this strategy, key risks addressed are financial risks, such as the case of potential financial loss due to event cancellation, procurement risks related to the supply of audiovisual material, construction components or other event equipment outside required specifications, safety and security risks and risks related to errors in communication with venue managers (see Appendix A, Table A1, RBS Codes 1.1.4.2, 1.3.7.1, 1.3.7.4, 1.3.7.6, 1.4.2.2, 1.4.2.4, 1.5.1.2, 1.5.1.3.1, 1.5.3.3, 1.5.1.5.3, 1.5.1.5.4).

Another proposed risk treatment strategy that was stated by the research participants as very important is "event project team training, performance monitoring and flexibility". This risk strategy is aimed at the treatment of risks relevant to team member non-compliance with assigned roles and responsibilities and inappropriate behavior when interacting with attendees, to delays in project and event implementation, to guests' dissatisfaction and overcrowding and communication errors (see Appendix A, Table A1, RBS Codes 1.3.1.1, 1.3.2, 1.3.5, 1.3.7.1, 1.5.1.1, 1.5.2.1, 1.5.2.3, 1.5.2.4, 1.5.2.5).

An essential risk mitigation action according to the interviewees is "written communication" with key project stakeholders, namely the client organisation and project suppliers. Such an action addresses risks related to unclear event requirements, financial losses, procured equipment and materials outside required specifications, communication errors with both event suppliers and the client organisation, delays in procurements and project and event delays (see Appendix A, Table A1, RBS Codes 1.1.3.2, 1.1.4.2, 1.3.7.2, 1.3.7.4–1.3.7.10, 1.4.2.1, 1.4.2.2, 1.4.2.7, 1.4.2.11, 1.4.2.12, 1.4.2.15, 1.3.7.1, 1.4.3.1, 1.5.2.1).

A proposed risk response strategy that was highlighted by the research participants as critical for event sustainability, is "maintaining stable long-term relations with suppliers". To build solid and long-term partnerships with suppliers, one must be confident in the quality of the products and services they offer prior to selecting partners. This strategy is aimed at mitigating risks related to lack of required specialized personnel, communication errors with venue managers and subcontractors in general, loss of event quality and dissatisfaction of event attendees (see Appendix A, Table A1, RBS Codes 1.3.3, 1.3.7.1, 1.3.7.2, 1.3.7.4–1.3.7.9, 1.4.2.2, 1.4.2.13, 1.5.2.4).

One of the proposed risk mitigation actions that in the view of the interviewees is very important is “checking the venue premises before booking”. Such an action addresses risks related to improper space dimensions and inadequate audiovisual equipment, or risks related to safety and overcrowding (see Appendix A, Table A1, RBS Codes 1.3.7.3, 1.4.3.2, 1.4.3.3, 1.5.2.2, 1.5.2.5).

According to the interviewees “research and monitoring the existence of another event on the desired dates” is a key strategy to avoid risks associated with defamation for imitating competitors’ events and the existence of another event on the same date targeted to the same audience (see Appendix A, Table A1, RBS Codes 1.3.4, 1.7.5).

Another method that according to interviewees is important for treating risks such as being unable to conduct an event on a given venue and date, with selected bands, artists and other suppliers is “planning and ensuring availability of alternatives regarding event dates, artists, suppliers and venues” (see Appendix A, Table A1, RBS Codes 1.1.3, 1.5.1.1, 1.3.7.11, 1.3.7.14).

“Engaging guests through oral and written communication” appears to be an important risk mitigation action, addressing risks associated with insufficient event promotion, attendee number estimation errors, and errors in invitations delivery (see Appendix A, Table A1, RBS Codes 1.3.4, 1.3.6, 1.3.8, 1.4.1.1, 1.4.1.2).

One of the proposed risk mitigation actions that in the view of the interviewees is key for attendee perception and safety is “estimation, monitoring, controlling and recording attendance” of the event. The main risks addressed with this action are potential long queues, overcrowding of event attendees and other crowd safety related risks (see Appendix A, Table A1, RBS Codes 1.3.4, 1.3.8, 1.5.2.2, 1.5.2.5, 1.6.3).

A proposed risk response strategy that was highlighted by the research participants is “booking of the venue from the day before the event”. Such a risk mitigation action is used to address risks related to delays in material and equipment transportation and non-compliance with the pre-event schedule (see Appendix A, Table A1, RBS Codes 1.4.3.1, 1.5.1.1).

The interviewees underline how critical it is for the event’s quality a “rehearsal of the event and soundcheck”. This risk mitigation method addresses risks related to delays during event execution and performances and technical equipment malfunctions (see Appendix A, Table A1, RBS Codes 1.5.2.1, 1.5.2.7, 1.5.2.9, 1.5.2.10, 1.5.2.11).

During event execution, a key risk mitigation action according to the research participants is “close monitoring and control of event implementation”. This way, risks related to event delays, communication errors, personnel non-compliance and security and safety risks are addressed. When combined with event rehearsal and soundcheck, this action may help to assure event quality (see Appendix A, Table A1, RBS Codes 1.3.2, 1.5.1.2, 1.5.1.3.1, 1.5.1.5.3, 1.5.1.5.4, 1.5.2.1, 1.5.2.3, 1.5.3.3).

Finally, the “existence of an evacuation plan and safety procedures” is a risk response strategy stated also as key for event sustainability, as it addresses risks associated with unforeseen event interruptions caused by an emergency, such as extreme weather conditions, as well as safety and security risks (see Appendix A, Table A1, RBS Codes 1.5.2.12, 1.7.1).

5. Discussion

This study’s results have provided new insights into the identification and treatment of risks in corporate events. A WBS template, an RBS and an extensive list of risk mitigation strategies have been developed. It is the first time these three tools were developed in unison and their simultaneous application can help event managers deal more effectively with risks in their projects. This, in turn, can potentially lead to increased quality outcomes, better cost control, safer event environments and personnel behavior and protected and secure audiences, hence increased event sustainability in a comprehensive manner.

According to the risk breakdown structure for corporate events, risks that may emerge in these projects can be classified into two broad categories: those for which organizational-level response measures are taken and those that are treated differently in each project,

depending on the nature and environment of the project. The first category covers risks associated with internal operations and procedures, such as communication with suppliers, invitations dispatching and communication of material specifications to subcontractors. The second category covers risks associated with the project's requirements, purpose and schedule. Such risks include late requirement modifications, project start-up or completion delays, and failure to accomplish the event's goal. However, there are risks in corporate events that, for their management, a set of criteria must be considered, including both the event management organization's operation and internal procedures as well as the event's unique characteristics, its scope, requirements and context, among other factors. An example of this type of risk is the potential of erroneous estimations of the durations of project activities.

One subject worth examining is the issue of subcontracting in corporate events. A frequent approach detected throughout the interview process is the outsourcing of the majority of the work to subcontractors, particularly those responsible for the development and delivery of constructions, artwork and equipment. Only one of the participants noted that the event organisation produces the printed material, presentations and souvenirs in-house. While procurement is a common tactic and its process is mostly automated in event management organisations, it was identified as common knowledge among all participants that outsourcing gives rise to a number of risks. These appear primarily because a significant amount of the event scope is dependent on suppliers and not on the event management organisation. Additionally, the event management organisation misses the opportunity to develop the necessary know-how to produce the outsourced deliverables required for the event (stage installation, decorating materials, construction components, audiovisual material, printed material, etc.). The primary methods mentioned for mitigating these risks are close relationships with suppliers, written communication with subcontractors regarding costs and deliverable requirements, selection of alternative suppliers and ensuring stable long-term collaborations with suppliers that adhere to ethical and sustainable business practices.

Another risk that the research participants highlighted is the potential changes in project scope. According to project management theory, the phenomenon is defined as scope creep. Scope creep is a very regularly occurring risk in corporate event projects, where the requirements for the date, venue, audiovisual materials, construction components, decoration and event schedule can change at any time, given the extremely uncertain nature of events. Indeed, if changes are made late in the project's life cycle, the associated costs are considerable, and major delays are introduced. According to the participants, in order to mitigate this risk, it is vital to have requirements clearly stated and recorded from the start of the project. Modifications and adjustments to project requirements and scope occur often across all types of projects. However, it seems that the management of this risk in corporate events is more complex and less effective. This could be due to the fact that a significant amount of the project deliverables is outsourced to subcontractors. After requirements are specified and deliverables selected for outsourcing, the extensive and repeated supplier communications processes cause significant delays (supplier search and selection, specifications submission, samples collection, corrections submission, final approval, delivery, etc.). They increase project complexity, which leads to higher uncertainty and hence higher risk exposure, a conclusion argued to be a common risk source in many different types of projects across various industries [56].

Furthermore, during the interviews, participants highlighted the importance of risks that, if they occur, can negatively impact project time requirements, as for example delays or deviations from the event schedule. This demonstrates that at corporate events, the project's schedule, especially regarding the event dates, is critical for project success and must be adhered to.

It can be seen that certain differences exist between the template WBS developed in this study and the WBS elements proposed in the existing literature. The template WBS that resulted from this study does not contain activities and deliverables regarding volunteer

management. Despite the fact that volunteering and volunteer management appears in the existing literature [17,34] none of the research participants mentioned it. On the other hand, it contains a large amount of procurement tasks, which is also commonly mentioned in the existing literature [17]. Additionally, in the developed WBS template tasks and deliverables correspond to the various phases of the life cycle of a corporate event, namely project starting meeting, project planning, project management, project implementation, event implementation and project closing meeting. This can aid other management knowledge areas of the event, especially schedule and risk management. Finally, in this WBS template there is a clear separation between the project implementation at large and the specific implementation tasks regarding event dates. In this way, larger emphasis can be placed on the event implementation and its management, as it rises on a higher level in the WBS, compared to the literature, while at the same time project activities before and after the event can be clearly and separately monitored.

Regarding the risk breakdown structure, no study was found that performed an RBS analysis in a similar depth and thus direct comparison with the literature is difficult. Nevertheless, the developed RBS differs from the other structures presented in the literature which categorize risks into technological, administrative, financial and external [39], [57]. On this study, in the developed RBS, risks are organized and categorized in correspondence with the activities and deliverables of the corporate event as they appear in the template WBS. As a result, risk structural categorization corresponds to the project lifecycle phases, with alignment to the results of previous risk management studies, that group risks either in the same manner, either based on risk sources or on latent risk structures based on underlying correlations among risks [11,12,56]. A common finding is the fact that many of the emerging risks in a corporate event are associated with the procurement process, and especially the delivery of materials by suppliers [39]. Additionally, it is noteworthy that in both the literature and the RBS developed in this study, most of the risks are identified to be associated with the phase of project delivery/event implementation [32,34,37].

6. Conclusions

This research attempted to address its research objectives through a series of semi-structured interviews with corporate event managers. A WBS template and an RBS for corporate events were developed, and a set of risk treatment options and mitigation strategies for risks in corporate events was identified.

A significant finding that occurred from the research, and particularly from the development of the work breakdown structure for corporate events, is that the implementation stage appears to be separated in this type of projects in two parts. The first part is the implementation of project plans and preparation activities, and the second part the implementation of the event itself, that is, the set of activities immediately before, during and immediately after the event. This point distinguishes corporate events and events in general from other common types of projects such as construction projects, IT projects, R&D projects, and so forth. According to project management theory, projects generally consist of five phases: initiation, planning, implementation, monitoring and control, and closing. The difference between corporate event projects and other types of projects is that the main deliverable of the project, the event itself, seems to be a distinct phase, during which a substantial number of the total project's tasks are completed, despite its relatively short duration, compared with the rest of the project's phases. Thus, the activities necessary to host corporate events may be classified according to the phases of the corporate event life cycle, meaning that the work breakdown structure (WBS) of a corporate event may contain two distinct phases for its implementation, namely project implementation and event implementation.

Research results point to the fact that it is common practice for event management organisations to outsource a significant amount of the project scope of a corporate event to suppliers and subcontractors. Although event management organisations appear to be familiar with the project procurement management process, this approach appears to

be linked with a significant amount of emerging risks in corporate projects, jeopardizing event quality and outcomes. Additionally, important risks in corporate events appear to be potential changes in project scope and specifications late in the project, potential delays in the receipt of materials from suppliers, possible technical malfunctions during the event, potential visitor overcrowding, and possible delays and deviations in the implementation of the event schedule. Simultaneously, external hazards were identified, mostly linked to weather conditions and media coverage of the event.

For the treatment and mitigation of risks in corporate events, the research indicates that it is important to prioritize communication and maintaining close and stable relationships with event suppliers and subcontractors, regarding project requirements, material specifications and cost. It is also critical for risk mitigation to have a project team flexible and adapting to changing situations. Equally important is the close monitoring and control of project activities, the monitoring for comparable events taking place on the same dates, the securing of alternative options regarding artists, locations, suppliers, and so forth, the implementation and close monitoring of the event rehearsal, the close communication and engagement with guests prior to the event, as well as monitoring and controlling guest attendance.

The set of tools for corporate event management developed in this study, namely WBS template, RBS, and risk treatment methods and response strategies, are proposed to be implemented simultaneously and in a connected, interrelated manner. It is important that these tools are synthesized, since in that way it is argued that they may lead to more effective management of event risks and increased event quality outcomes.

A potential direction of further research would be to attempt replication of the present study's findings on other corporate events. This may be accomplished through the use of the same or different research approaches and data gathering and analysis methods, such as action research and case studies. Additionally, research objectives could be expanded to include other types of events in order to provide more comprehensive tools, methods and techniques for managing risk in the event industry in general.

Several issues arose regarding risk management in corporate events that may be investigated in the future. One is the assessment of the potential value for event management organisations to invest in the acquisition of venues, specialized equipment and the know-how necessary to produce the majority of the event deliverables in-house or if it is more prudent to keep outsourcing a significant amount of project deliverables to subcontractors. Another question that remains is how to deal with highly disruptive risks and uncontrollable risk factors, such as terrorist attacks, pandemics, earthquakes, and so forth. In that regard, it is proposed to examine the application of business continuity management in corporate events and the events industry in general.

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Appendix A

Table A1. Risk treatment methods and response strategies in corporate events.

Risks	Treatment Methods and Response Strategies
Potential lack of clearly defined requirements (1.1.3.2)	Request for written communication (e.g., via email) with the project manager. Meeting with the project manager and discussing the requirements. Informing the manager about the need to define the basic requirements (time, cost, content of the event) before undertaking the project.
Potential inability to hold the event on the desired dates (1.1.3.3)	Booking arrangements for alternative dates and/or with additional venues and assurances from suppliers for deliverable receipts on alternative dates and/or within a wider time frame.
Potential cost overruns in case of event postponement/rescheduling (1.1.4.1)	Communication with suppliers and determination of an initial time frame for deliverable receipts, until the event date is secured. Setting of a general timeframe for the event and communication of this information to all relevant project stakeholders, until the event date is secured.
Potential financial loss in case of event cancellation (1.1.4.2)	Request for advance payment for part of the event's estimated budget by the customer at the start of the project. Contract issuance with clauses regarding event cancellation. Written communication through all legal means regarding customer's contribution for covering part of the supplier costs and/or for the reimbursement of the completed work until the event cancellation.
Potential delays during planning (1.3.1.1)	Holding a project starting meeting and one-day commitment to determine the content and schedule of the event, approval by the customer and development of complete project schedule based on what has been agreed. Establishing a clear work pattern based on organisational event management maturity. Implementation of good management practices within the organization for planning delay prevention. Training and monitoring of the project team members responsible for the event planning
Potential lack of special character in the event schedule (1.3.1.3)	Definition of project scope and event schedule through brainstorming and other relevant techniques during the project starting meeting. Addition of interactive activities to the event schedule, to facilitate higher attendee engagement Collaboration with prominent and renowned presenters Addition of short recreational activities in the event schedule (e.g., performance arts demonstrations, contests, lotteries, quiz games) Selection of special souvenirs and/or meals
Possible personnel non-compliance with assigned roles and responsibilities (1.3.2)	Developing a schedule easily understandable by all project team members, which includes clearly defined roles and responsibilities for each member for the dates of the event Assignment of roles to project team members depending on their specialization. Employment of additional staff, able to contribute to activities in case of resource deficiencies due to absenteeism. Creating a sense of responsibility in all project members Close monitoring and control of the activities during event implementation Staff training so that they can take initiatives, take on additional roles and perform additional tasks, in case of resource deficiencies due to absenteeism.

Table A1. Cont.

Risks	Treatment Methods and Response Strategies
Potential lack of specialized personnel required for performing technical tasks (1.3.3)	Recruitment of staff with proven experience and specialization for performing the technical tasks and with good recommendations. Establishing stable long-term cooperation with specialized technicians and technical companies.
Possible existence of another event addressing the same audience on the same date (1.3.4), Potential defamation for imitating competitors' events (1.7.5)	Research and monitoring of all available media, including the internet, for the existence of other events on desired event dates before event date finalization. Staying informed regarding other planned events by keeping good business relationships with other event management organisations. Keeping close relationships with reporters and staying informed about events that are planned to take place and/or whether they have received invitations for other events on the desired dates. Research and monitoring of all available media, including the internet, for the existence of other events on desired event dates after event date finalization. Check the availability of the event guests through direct communication (i.e., telephone calls) in order to ensure their attendance.
Potential changes in requirements late in the project schedule (1.3.5)	Definition of feasible, clearly stated, written requirements regarding event venue, scope, budget, quality, estimated dates, location, attendees and character of the event from the start of the project. Informing the project manager of all requirements to ensure her/his consent before decisions are made. Ensuring team flexibility and the existence of sufficient time for the implementation of potential changes. Requirement for the project manager to limit the number of changes to audiovisual materials, venue, scope, date and schedule
Potentially inadequate promotion activities (1.3.6)	Planning marketing promotion activities that communicate the event to an audience size larger than the desired. Selection of appropriate marketing strategy depending on the type and size of the event Promotion and dissemination of the event through a combination of ways (internet, media, press etc.) depending on the event type Sending invitations and promotional and/or informative emails to event guests
Potential errors in communication with venue managers (1.3.7.1)	Assignment of communication with site managers to experienced staff Requirement for written submission of event venue specifications, including services provided (security, fire safety, kitchen, cloakrooms, auxiliary spaces) Contract signing with clauses regarding financial compensation in cases the venue does not comply with the agreed upon specifications. Disclosure of communication (via e-mail) to the Business Director and the Project Manager to monitor and control the venue procurement process. Keeping good relations with venue provider organisations Keeping close communication with venue managers

Table A1. Cont.

Risks	Treatment Methods and Response Strategies
Potential errors in communication with graphic design and advertising organisations (1.3.7.2), construction companies (1.3.7.5), logistics companies (1.3.7.7) and technical equipment and services companies (1.3.7.8)	<p>Assigning communications with subcontractors to experienced staff</p> <p>Written communication for sending the specifications of the required materials</p> <p>Requirement for a submission of a written report on the cost, time and date of receipt and transport of materials</p> <p>Request for information in advance regarding surcharges for services (e.g., shipping costs)</p> <p>Disclosure of communication (via e-mail) to the Business Director and the Project Manager to monitor and control the venue procurement process.</p> <p>Keeping good, stable, long-term collaborations with suppliers</p>
Potential errors in the submission of specifications regarding dimensions and requirements for the decorations and audiovisual material (1.3.7.3)	<p>Taking site measurements by designated project staff during the inspection of the event premises, issuing a report of these measurements and communicating it to all relevant stakeholders.</p> <p>Involvement of more than one project staff in the measurement process.</p> <p>Involvement of at least one project team member in the process of taking measurements when this task is performed by the suppliers.</p> <p>Requiring the suppliers performing these measurements to disclose them to the event organisation for approval before proceeding with the creation of the audiovisual material.</p> <p>Monitoring and control of the required specifications of the audiovisual material, based on the site measurements, before sending them to the suppliers.</p>
Potential receipt of decoration and audiovisual material outside required specifications (1.3.7.4), of construction components outside required specifications (1.3.7.6) or insufficient quantity of flyers and printed material (1.4.2.2)	<p>Ordering larger quantities of material (e.g., printed material) than required.</p> <p>Scheduling receipt at least one to two weeks before the event, in order to perform quality control of the material.</p> <p>Written communication with suppliers several days before their scheduled material submission in order to ensure the receipt of the total required quantities.</p> <p>Contract signing with suppliers, where they agree to charge only the cost of transport in case the material or construction components do not meet the agreed specifications</p> <p>Transference of risk to suppliers and requirement for immediate correction of audiovisual material and construction components</p> <p>Keeping good, stable, long-term collaborations with suppliers</p>
Potential errors in communication with catering companies (1.3.7.9)	<p>Requirement for written report of the scope of catering services provided by the catering company</p> <p>Requirement for a written report containing the cost and the description of all the items of the offered menu</p> <p>Request for information on surcharges for services (e.g., refrigeration, extra equipment, tablecloths)</p> <p>Disclosure of communication (via e-mail) to the Business Director and the Project Manager to monitor and control the venue procurement process.</p> <p>Keeping good, stable, long-term collaborations with catering subcontractors.</p>
Potential errors in communication with artists, performers, presenters, speakers and photographers/videographers (1.3.7.10)	<p>Assigning communication with artists, performers, presenters, speakers and photographers/videographers to experienced staff</p> <p>Sending detailed information messages to the speakers, artists, and so forth stating the event itinerary, the required arrival time for soundcheck and rehearsals, the content of the speeches and/or the type of music and the desired repertoire.</p>

Table A1. Cont.

Risks	Treatment Methods and Response Strategies
Potential lack of availability of desired music bands for the event dates (1.3.7.11)	Communicating and ensuring availability of at least three different music bands.
Potential lack of availability of souvenir suppliers (1.3.7.14)	Developing feasible proposals for the event souvenirs. Communicating and ensuring availability of at least three different souvenir suppliers.
Potential errors in the estimation of the number of guests (1.3.8)	Communication with guests and ensuring their attendance prior to the event, in order to estimate the number of attendees as accurately as possible. Adding a safety margin to the estimated number of attendees, in the form of a designated percentage increase of the estimation.
Potential invitations delivery at wrong addresses (1.4.1.1) or omission of invitations delivery at the required time (1.4.1.2)	Telephone/verbal communication with guests and assurance that they received their invitations (e.g., through follow up communication). For this it is necessary to have a list that includes the telephone numbers of the guests. Sending invitations via e-mail and not by courier services. For this it is necessary to have a list that includes the e-mail addresses of the guests. Written notification to the guests as soon as the day of sending the invitations is determined. Informing the guests if it is not possible to send their invitation on a specific date or time. Informing the guests of sending the invitation within a wider time frame.
Potential omission of inviting necessary project stakeholders (1.4.1.3)	Controlling and checking the guest list when sending invitations (preferably through the form of a checklist).
Potential delays in the receipt of decoration and audiovisual material (1.4.2.1) and technical equipment (1.4.2.7)	Scheduling the material and equipment receipt at least one to two weeks before the event. Written communication with suppliers a few days prior to scheduled receipt to confirm shipment on the agreed date. Arranging the allocation of company vehicles for receiving deliveries from the suppliers' companies.
Potentially unsafe construction components and installations (1.4.2.4)	Contract signing with construction suppliers to ensure integrity and safety of all required installations. Transference of risk to the construction suppliers.
Potential delays in the arrival of the catering at the site (1.4.2.11)	Written requirement to catering suppliers for catering receipt at the specified day and time. Written communication with catering subcontractors a few days before the event in order to confirm the scheduled delivery time. Preparation and design of an alternative plan for rearranging the schedule of the event in case of catering delays (e.g., rescheduling of music, presentations, networking activities etc.).
Potential receipt of food and beverages of insufficient quantity (1.4.2.12)	Communicating with guests and ensuring their presence before the event to estimate the number of guests and hence estimate the number of meals. Order a larger quantity of meals than the estimated number. Written communication with the catering suppliers regarding the necessary quantities. Selecting catering suppliers offering both kitchen equipment and full range catering services. Selection of hotel spaces that offer kitchen facilities where extra meals can be prepared for the event.

Table A1. Cont.

Risks	Treatment Methods and Response Strategies
Potential receipt of food and beverages of unacceptable quality (1.4.2.13)	Selection of catering suppliers for which good recommendations have been received. Collaboration with reliable catering suppliers. Stable, long-term collaborations with catering suppliers.
Potential delays in the receipt of souvenirs (1.4.2.15)	Scheduling the receipt of gifts at least one to two weeks before the event. Written communication with gift suppliers several days prior to scheduled receipt to confirm shipment on the scheduled date. Planning for delivering of souvenirs to the guests' offices and work spaces. Planning for the creation and distribution of formal printed material to the guests during the event and delivery of souvenirs through post office after the event.
Possible delays of materials transport to the venue (1.4.3.1)	Written request to the logistics subcontractors for transportation of materials to the event premises one day before the event. Arranging the allocation of company vehicles for the transportation of materials
Potentially insufficient number of entrances for materials transport and allocation in the venue (1.4.3.2), potentially small corridors and bottlenecks in materials allocation in the venue (1.4.3.3)	Carefully monitoring and checking the layout of the venue areas before the event. Checking suppliers' accessibility and ease of access of the event premises. Checking the venue entrances so that they are sufficient for the required materials allocations. Checking the corridors when checking the venue areas. Planning for the locations of placement of the materials, depending on the venue areas layout.
Potential long waiting queues of trucks (1.4.3.4)	Scheduling the arrival of suppliers so that time intervals exist between each arrival, minimizing the potential queues and subsequent waiting times.
Potential non-compliance with the pre-event schedule (1.5.1.1)	Booking of the venue from the day before the event for the timely organisation and decoration of the event premises. Supervision of the activities during the pre-event schedule implementation Assigning a designated project team member to coordinate the activities during the implementation of the pre-event schedule.
Potential accident occurrence during space organization and decoration (1.5.1.2), during infrastructures installation (1.5.1.3.1) or during their dismantlement (1.5.3.3)	Contract issuing from the legal department and signing from the venue provider, to cover for potential accidents before booking the venue. Task control and monitoring to mitigate accident occurrence. Transference of risk through obtaining coverage in case of accident occurrence from insurance institutions.
Possible errors in the placement of audiovisual material (1.5.1.4)	Supervision of the placement of the audiovisual material by the artistic director of the event. Placement of audiovisual material in the event areas from the day before the event. Collection of opinions from the project team, regarding the placement of the audiovisual material.
Potential lack of auxiliary spaces and areas for temporary storage of materials (1.5.1.5.1) or potentially overloaded corridors (1.5.1.5.2)	Checking for the existence of sufficient auxiliary spaces before booking the venue. Locating and planning for the places of material storage.

Table A1. Cont.

Risks	Treatment Methods and Response Strategies
Potential equipment damage during allocation (1.5.1.5.3)	Provision of equipment backup and spare parts. Contract signing with the suppliers for replacement of materials and equipment in case of damage. Monitoring and control of equipment allocation.
Potential equipment thievery during allocation (1.5.1.5.4)	Ensuring the existence of storage space inside the venue where public access is not allowed. Monitoring and control of the event premises through the use of security systems (CCTV etc.). Transference of risk through obtaining coverage in case of theft from insurance institutions.
Potential delays in event schedule (1.5.2.1)	Meeting and participation of the entire project team in the development of the schedule for the event implementation. Designing a schedule with activities that it is known from previous experience to generally be performed smoothly. Flexibility in the duration of activities for the smooth implementation of the event schedule, even in case of delay occurrences. Creating a clear and understandable event schedule with defined and distinct activities and distribution of the schedule to all relevant stakeholders. Designation of a project team member who coordinates the tasks, informs and controls the timely and correct execution of the schedule. Appoint a presenter (e.g., a famous actor) for the corporate event who will be in charge of the event schedule and will coordinate schedule flow. Close communication with and information of speakers, musicians and artists about the required durations of their performances and controlling these durations during event implementation. Announcements to the public about the flow of the event. Preparation of audiovisual material that can be presented in potential gaps in the schedule of the event or preparation of food and beverages that can be offered in a gap in the schedule or public relations with the guests in these gaps. Rehearsal of the corporate event to familiarize all relevant stakeholders with the schedule and the flow of the event. Control and monitoring of the tasks during the implementation of the event schedule.
Potential long guests' queues at event opening (1.5.2.2)	Ensuring guest attendance before the event, estimating the number of attendees, dividing guests into groups (queues) and assigning a corresponding number of staff responsible for the reception of each group. Planning for splitting the reception into separate groups and using colored badges (e.g., bracelets, cards to be dealt before entrance) to distinguish groups (queues). Provision for staff reallocation to the reception to split the entrance into as many queues as possible (it is necessary to print the guest list in enough copies so that other team members can participate in the guest reception activity) Allocation of a sufficient number of staff for the guests' reception depending on the estimated number of guests.
Potential inappropriate behaviour during communication with the audience (1.5.2.3)	Maintenance of a calm and positive behavior by all personnel. Close monitoring to prevent tension emergence. Designation of staff responsible for preventing and managing emerging tensions.

Table A1. Cont.

Risks	Treatment Methods and Response Strategies
Possible complaints and dissatisfaction from attendees regarding reception service/entrance (1.5.2.4)	Assignment of experienced staff or staff with good recommendations to service event guests. Stable, long-term collaborations with service staff.
Potential overcrowding at reception area/entrance (1.5.2.5)	Appropriate placement and spacing of event posts that may get crowded (buffet, service, reception) in spacious areas. Communicating with guests and ensuring their attendance before the event to estimate the number of guests and hence the number of staff required for their smooth service Allocation of a sufficient number of resources for the guests' service depending on the guests' estimated number.
Potential inability to explain to guests how applications and products work due to lack of promoters' technical training. (1.5.2.6)	Preparing answers to all possible questions (Q&As) that product promoters may receive. Search in the media for comments/rumors circulating about the product or application to be promoted in the event, compilation of all possible questions of the guests and recording of all answers regarding which the promoters will be trained. Training of product promoters by specialized training staff. Collaboration with product promoters after evaluation and casting of their communication skills and technical knowledge they possess regarding the products.
Potential lightning, sound or other technical equipment malfunction during artistic performances, music shows, speeches, presentations or announcements. (1.5.2.7)	Rehearsal and light and sound check of the event performances, shows, speeches, presentations or announcements and control of lighting and sound. Ensuring the presence of technicians on site during the event implementation. Possession of backup equipment, such as microphones, computers and projectors and possession of copies of all presentations or other audiovisual material on additional backup devices. Planning of activities to be performed in case gaps are created in the schedule due to technical problems (e.g., networking, public relations)
Potential issues during the use of complex technological applications for presentations (1.5.2.9)	Avoid using complex technological applications without prior familiarization of all promoters, presenters and other relevant stakeholders. Rehearsal of the event to get all relevant stakeholders familiarized with the applications to be used.
Potential speakers' delays (1.5.2.10)	Preparation of audiovisual material that can be presented in the potential gaps in the schedule of the event, preparation of food and beverages that can be offered in a gap of the event flow and public relations with the guests in the potential schedule gaps. Rehearsal of the event and planning for the arrival of the event speakers before the event implementation begins. Agreements with the speakers to arrive at the venue before the event implementation begins.
Potentially ill-prepared speakers (1.5.2.11)	Preparing and sending scripts, texts or presentations to the speakers before the event. Rehearsal of the event during pre-event implementation and allocation of project staff to assist in the preparation of the speakers.

Table A1. Cont.

Risks	Treatment Methods and Response Strategies
Potential unscheduled termination of the event (1.5.2.12), Potential extreme weather conditions (storms, heatwaves etc.) (1.7.1)	Planning events indoors during the winter season. Ensuring additional interior spaces inside the venue. Existence of evacuation plan and safety procedures to deal with a potential emergency, after consultation with the venue manager. Good communication with authorities and utilization of security personnel. Close communication with the security staff responsible for guarding the event.
Potential employees' fatigue (1.5.3.2)	Equal distribution of workload. Distribution of staff per shift.
Potential omissions or errors in the publishing of promotional communication documents and reports of the event (1.6.2)	Compilation of communication material by communication professionals who are familiar with the customer company's identity and the messages to be communicated. Prior to shipping, approval of communication materials by the staff member in charge of communication monitoring and control. Maintaining positive relationships with the media and ensuring the ability to intervene for marking corrections on online posts.
Potential distortion of statistical data about the event (1.6.3)	Export numerical data for consumption and gifts distributed from the guest list. It is necessary to have a guest list and provide it to the project staff responsible for distributing the souvenirs in order to give one to each guest. Assignment of a designated project team member to record the attendance, the number of gifts distributed, food and beverage consumption and other data.

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