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Smart dissemination and exploitation mobile services for carnival events

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Abstract

The use of smartphone applications offering services to spectators of outdoor cultural events like carnival parades, prior, during and after the event could be a powerful tool to the hands of event organizers. A carefully designed mobile application that offers various services facilitating user participation in outdoor events and enhancing personal experience could make an event stand out from the rough competition and attract more spectators. In this work we propose a prototype system that tries to implement dissemination and exploitation activities for carnival events in a trustworthy and efficient way. The system offers carnival event organizers and local businesses the opportunity to increase sources of revenue by implementing various exploitation services. Moreover, the system attempts to create a vivid online community of individuals that communicate, exchange opinions and create personal experiences that share with the rest of the community, enriching carnival-related system content. An authorization mechanism is applied to all user content requests to prevent content misuse. The proposed system is compared to other applications concerning spectators of outdoor events based on offered services. Evaluation results suggest that the presented system is a first attempt towards a mobile system that supports carnival organizers to accomplish efficient event management, monitoring and administration, spectators to live an enhanced event experience and local markets to gain additional revenue.

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1. Introduction

Nowadays, mobile applications are becoming more and more important for our daily activities. Mobile devices, smartphones and tablets give us the opportunity to connect to a global network of services, information and things at any time regardless of our current location. An individual does not only have the opportunity to search for information or use a service but she/he is also able to generate and contribute self-generated information and disseminate it to the broad public, thus becoming a vivid member of a global community. Since the first smartphones appeared on the market, around fifteen years ago[6], people have become extremely familiar with their use and integrated them in their everyday life. Now, after a decade of extensive usage, people are becoming more and more demanding about the services they expect from a smartphone application. The need for mobile applications that cover a wide range of services from simple information viewing, to real-time on-demand services arises[17]. In order to exploit the growing need for modern services and establish new sources of revenue, public authorities and commercial organizations around the world aim in constantly developing and offering new mobile applications to their citizens or clients[8,9,14,15]. The personal nature of mobile device usage provides institutions and companies the opportunity for promoting their services directly to any individual maximizing the efficiency of dissemination and exploitation activities.

Cultural events and activities have always been an excellent source of revenue for cities around the world. Many public authorities try to organize and establish periodical cultural events in order to attract more and more visitors to their areas and stimulate commercial activity for local markets[3]. Carnival parades are annual outdoor cultural events that usually take place in the streets of a city and motivate large crowds of people to participate as paraders or spectators[18]. Since many cities organize similar events, the competition becomes brutal. How can city authorities highlight their event and stand out from the competition? How can public authorities reach larger audiences of potential visitors and urge them to visit their carnival parade? The implementation of smartphone applications that disseminate the event to the broad public and provide services to carnival spectators could be a solution. Moreover, public authorities could design and follow a smart exploitation plan to generate additional revenue from the use of on-demand mobile services that users request in real-time.

In this work we present a prototype system that aims in the dissemination of carnival parades to the broad public in order to attract more individuals to such an event and the exploitation of carnival parades by public authorities and commercial organizations to produce additional revenue. The system uses a dedicated smartphone application and an online interface to provide services to parade spectators, local people or tourists, and local businesses, prior or during and after the event. Spectators can be informed about practical information like the time and location of the event or which is the best way to access the parade area. Furthermore, spectators can enjoy attractive visual experiences, via their smartphones, with the use of augmented reality technology. Spectators or paraders can generate personal digital content related to their carnival experiences (primitive social content or intangible cultural heritage content) and disseminate it to the broad public. The safety is a critical issue that should be addressed by a participatory system. The most urgent safety need is to guard the contributing user content by any intruder misuse. This is the main fear of users in such a system. The proposed system tries to relieve the fear of users that their content contribution will be accessed and manipulated without their permission applying suitable authorization mechanisms. In particular, we extend the role-based access control model to impose limitations to the access of personal content. Additionally, local businesses can become affiliate with the carnival event organization and promote their products and services to spectators via the smartphone application or the online interface. Spectators can perform transactions and purchases of carnival related products or book a hotel room or a dinner table in a local restaurant.

Discovering the usefulness of building an intelligent outdoor cultural event environment was not an easy task since such events present a profound lack in benchmarks. In order to guide the proposed system's design we followed two directions. First, we noticed that there are many similarities between carnival parades and outdoor music festivals. Thus we addressed some of the basic parameters that characterize the usefulness of an outdoor event-related mobile system as determined in[13] for outdoor music festivals: preevent experience, updates, usability, location services, personalization, interactivity, deals and discounts, news, attractiveness, social media, postevent information, sponsors and usage tutorial. Moreover, we came in contact with public authority officials and simple people that have been involved in the carnival of Patras, one of the most famous outdoor cultural events in the Eastern Mediterranean region, serving in various roles from event organizers and carnival group leaders to carnival