CREATING LIGHT AND PERSONALISED RUNNING EXPERIENCES: AN APP DEVELOPMENT STUDY

Abstract ID: EASM-2015-192 - (714)

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Date submitted: 2015-03-20

Date accepted: 2015-04-10

Type: Scientific

Keywords: mobile phone application
development study
running

Category: C: Mobile Applications in Recreational Sports

Synopsis:

Abstract:
OBJECTIVE
In recent years, there has been an exponential increase in the availability and use of running related mobile phone applications. A systematic review by Middelweerd et al. (2014) of fitness and health related apps revealed that most of these apps provide feedback on performance, while tailored guidance is limited. However, the latter seems to be one of the key aspects for sensible and sustainable sport participation (and hence public health). This paper aims to establish that the use of quantitative, qualitative and design strategy methods are a suitable approach when developing running related mobile phone applications providing both feedback and coaching. Empirical evidence is provided.

BACKGROUND - LITERATURE REVIEW
During the last decades, there was a strong growth of individual, informal and unorganised sport activities with a health related focus, such as running (Scheerder, Breedveld & Borgers, 2015). As a result individualized guidance which can be considered a service of sports clubs is losing ground. Running attracts a heterogeneity of runners, of which a considerable number are ‘less experienced’ sport participants. Moreover, research reveals that typologies of sport participants (based on motives and psychographic variables) can be distinguished which can be related to differences in needs, (running) perceptions, usage of products and services, etc. (e.g. Vos et al, 2008; 2014). With regard to (starting) recreational runners substantial efforts, in terms of guidance, are necessary for sensible and sustainable sport participation. This

is crucial from different perspectives (sustainability, health improvement, motivation, etc.) and has an considerable impact on vitality and active living (Vos et al, 2014).
Mobile phone applications can be considered as interesting platforms for skill assessment and coaching (Kranz et al., 2013). Modern, health related, mobile technologies are likely to dramatically improve personal health outcomes, and have the ability to track behaviours over time, and across a large number of users. Moreover this technology can be designed to address (and monitor) large target groups (such as runners) giving them personalized feedback and guidance outside the ‘gates’ of a more traditional field lab in the daily urban environment (Vos et al, 2014).

METHODOLOGY
A three-step approach was used. First, based on detailed online survey data collected among over 10.000 runners in the Eindhoven area determinants of runners were distinguished via a heterodox approach. Cluster analyses on scale scores, which were derived from principal component analyses on opinions and views about running, were used to create typologies of runners. The relation between these typologies and the perception of health and the use of health-related products (such as apps) and services was analysed using bivariate and regression analyses.
In the second step, in several multidisciplinary iterations using qualitative methods (such as focus groups and mind mapping sessions), the essential features for the app development were distinguished. The running-application was co-created with different experts and tailored to the needs of runners. Finally the application was validated in context and qualitative feedback on the system was collected in a user study.

RESULTS
Results show that running-applications are popular among runners, but guidance and coaching is lacking. Four typologies of runners could be distinguished: ‘social competitive runners’, ‘fitness runners, individual competitive runner’, and ‘social runners’. As a result of the co-creation, an application was developed that helps runners to start or improve running in a safe, healthy and fun way by giving personalized training schedules that fits their own runners profile. Available sensors (in the smart devices) are used to constantly assess speed, location and were combined with a heart rate monitor. During running intuitive feedback on progress to the personalized schedule is given and automatic adjustments are made when the body reaches unhealthy levels. After the training session the runners also gives an indication about his/her perception of the intensity of the training. Based on this information combined with the body feedback (heart rate), environmental information (distance, location, route, time), and the profile, the selected training scheme for the next training session will be adjusted. Results concerning the validation (step three) will be presented at the conference.

CONCLUSION
The constructed typology emphasizes the need for more differentiated and effective approaches by both app-builders and marketeers. It is suggested that applications, in terms of monitoring sports performance and targeted guidance, can have an impact on sport participation, vitality and active living in urban

environments.

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