

# Sport Informatics - Using Mobile IT to Amplify Event Audience Experience

Andreas Nilsson

The Mobile Informatics Group, Viktoria Institute

Box 620

S-405 30 Göteborg

Sweden

Phone: +46 31 773 55 53

Fax: +46 31 773 55 30

*ammis@viktoria.se*

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Leave author names(s) empty for now (fill out in final submission)

Leave the affiliation field empty for now

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**Abstract.** This paper introduces how mobile IT can be used to enhance audience experience and constitute an alternative information and media resource during sport events. The place of an event is a place of large amounts of information and impressions. Today the audiences refer to journalists and speakers to get the information about the happening parallel to the actual viewing. We now see the surfacing of potential wireless use of handheld computers. Among future applications we think of the possibility of retrieving event information on own initiative while standing in the crowd at the arena. Future networking through mobile devices renders many different appliances and services. Hence, we explore how handheld and alternative media and information channels provide the audience with information and news.

## 1 Introduction

During the recent years we have experienced an increase in use of mobile communication support [1]. On one hand a lot of research and work within this domain has been focused on the support and interaction among and between professionals and cooperative work [2]. We now see the surfacing of interaction and communication support in our leisure time. The future of wireless networking enables the possibility to remain connected not only during working hours, but also in our lives as social individuals. In this paper we report on a project which main objective is to find new and innovative ways of augmenting the audience experience during events with the aid of broadband connected mobile information technology. This research is being conducted jointly with the industry and case study partners. Our first scope of study has been a harness racing track. This context as the first in a series of studies all sharing the common topic of audience experiences at events.

The premises are illustrated in figure 1, a photo of the site.



Figure 1: Picture of the racing track taken in front of the grandstand versus the track.

Herein we address the questions on how to encounter this field and domain, to explore how IT can offer alternative and new ways to handle, present and channel event related information, to provide personalization. To pursue this research, we initiated ethnographic studies at an arena bound event. The question that we do this research upon is:

*“To explore how alternative media and information channels can provide the audience with information and news to augment the event experience”.*

We believe providing people with this type of information support in a personalized way, letting them decide what is important and in what pace it should be presented in and finally when, will constitute a fruitful contribution.

The remainder of the paper is organized as follows. In section 2 we will describe our concept of events and the role of informatics within this domain. Later in section 2.1 we present the empirical context and its characteristics. Section 2.5 covers field note excerpts to illustrate activities, information resources and movements among the visitors. We discuss and reflect upon the preliminary implications of these excerpts before the paper concludes and present future work.

## 2 Augmenting Audience Experience

When attending an arena event, the main media and information support available is the one provided by host. The event visitors cannot influence what or when information is transmitted to them at the arena. For additional support and coverage, spectators for example bring small, portable radio receivers but still, the low influence on the information flow remains. Radio is a broadcasting media and is intentionally aimed to

satisfy a broad audience of listeners, but where is the „rewind button“ and how do I add my own „bookmarks“ in this context? These are examples of features that most of us are used to trust in when we browse the Internet on our desktops through e.g. Microsoft Internet Explorer. Those features allow us to customize and control our own information consumption in a way not possible in traditional mass mediums. Although the convergence between traditional mass mediums and the Internet is clear [5]. An example of this is many TV-shows adding the notion of interactivity when the TV-audience is encouraged to participate through chatting on the show’s website.

Emerging technologies such as small handheld computers with great processing power, high contrast color screens and WLAN (Wireless LAN) connectivity enables new and interactive ways of handling information. One of the major differences between the traditional media consumption today among the audience is non-interactive. There is no technology support what so ever today to take individual preferences and interests into consideration. The immediate consequence on the audience behalf is to have no influence what so ever on when, what and how to receive information about event happenings, participants, incidents and statistics. Mobile media terminals e.g. small handheld computers as mentioned above, render new ways of customizing media and information flow of event reporting. However, even though technology to support people during these different activities has arrived, many design challenges remains to be resolved.

## 2.1 Research site

In this section we aim to give a brief description of the site and to explain how we have encountered different aspects and known obstacles. At the Åby harness track there are races held each day, varying in class and skill. Information is sold through all conceivable media forums, such as TV, magazines, and dedicated phone hotlines to expert hints on the local TV broadcast at the arena. These TV broadcasts are also distributed to the betting offices spread nationally. There are many different groups of visitors at the track. From spectators sitting at the major grandstand (please see figure 2) to horse owners, jockeys, sponsor clubs to mention a few.



Figure 2: The audience grandstand and restaurants.

It is crucial to understand the heavy amount of information that floods the spectators and there is no support to filter [3] the incoming data. Not only during the race at the track but also prior to the race in the media, in magazines sold in stores etc. On one hand the visitors we interviewed claimed the information gathering part prior to the races to be one of the major challenges. Further, the challenge that follows is to interpret and analyze the material in order to place bets. It is not easy to determine on whom to trust and what to grasp within this extensive amount of information available, hints and expert announcements. There are some distinguished drawbacks that we have encountered so far during our empirical work:

- ?? The enormous amount of information and redundancy distributed from several official reliable sources but no support for personalization.
- ?? The lack of controlling the information flows. People complain about the pace of the information broadcasted on TV. This is the resource of information with the latest update and a clear, believed accuracy.

However, mostly there are two types of information presented on the screens. On one hand the interviews with jockeys prior to the race live from the stable area, on the other hand odds, statistics, history are also information resources presented to the audience through TV screens located all over the arena area. The latter is the most extensive part. The main issue in this flow is the pace of odds slides and other types of content that passes in a way to fast manner without personalization.

With these problems known to us, can we make a contribution within this domain and context using mobile information technology? An indication of this stems from the fact that the staff at the Åby harness track recently placed a PC in the public space enabling people to individually retrieve, browse and print information concerning the

races. This “InfoMat” created a new way of checking up statistics, cancelled horses etc in a personalized way. Although the popularity of this machine created queues making it hard for the last persons to reach the PC before the race was about to begin. The staff at Åby placed the computer as a test, to examine if people would find it interesting to use it. The interest went over expectations and after a short while of use, someone stole the machine and brought it home. Although this test was told to us almost as an anecdote, our ideas of supporting these people with mobile IT started to evolve.

## 2.2 Method

The field study has been inspired by “Quick-and-Dirty-Ethnography” [4]. The use of this method has been widely applied within the field of CSCW. We spent approximately 50 hours doing close observations, participation and face-to-face interviews. Prior to the survey we had announced our presence in the local magazine that covers the events of Åby and which reaches most of the visitors. Over the hours we took notes, pictures, captured some events on video and recorded audio.

We decided to initiate our studies in a background and observational manner. We placed ourselves among the audience and tried to record behaviors, information retrievals and the social interactions. This was done to get an overview on what kind of information resources mainly used and the relevancy to different media. It was also a way of capturing what kind of information that was interesting.

## 2.3 Mobile Multimedia Terminals

One of the key concepts concerning current handheld PCs is the emergence of wireless, broadband connectivity. This feature enables us to create various sorts of interactive support. Among these there is a possibility to interact with information resources and to add customisation of information flows applicable on the Åby context [6]. The visitors claim to be overwhelmed with information and it leaves much left to wish for determining which data to interpret. We collected test data and did preliminary simulations of mobile use with these handheld computers. The first version of our GUI (please see figure 3 on the next page) was created and we had some colleagues strolling in the building retrieving and interacting with the information wirelessly that we had provided. One of the major reasons to perform this early beta test was to explore the possibility for the users to determine the pace of information slides and its character themselves.



Figure 3: A screenshot from the mock-up GUI interface.

## 2.4 Empirically inspired design

Regardless of technical platform solution, it is important to have a good and thorough understanding of the current use of information resources at the site. To achieve this, we have spent time at the track just observing people and what resources that came to interest them during a session. We also participated a couple of evenings in one of the horse owner associations' premises. This room is sort of a space for members only and a place where everybody know each other, having dinner and bets on the races. The members sat in small groups discussing the information that flowed in on the monitors and how their friends had interpreted it. When the start time of the first race approached something interesting happened. Members started to walk between the different groups and tables to verify different sources of information and to get even more hints. Once in a while they went out on the balcony to get a really good view over the races. Below we illustrate some of the characteristics of the activities that the visitors spend their time on. We do this by showing excerpts from interviews, observations and field notes.

## 2.5 Field note Excerpts

The excerpts below illustrate Steve. He has been interested in the sport of harness racing for decades and represents one of the real oldschools. He claims to not have missed a single race in 10 years.

Time: 4.45 p.m

Before he departs from his home heading for the Åby harness track, he logs into his computer and accesses the Internet to get hold of the latest information concerning how people have placed their bets during the day on tonight's races. He grabs the copies from the printer and leaves by car.

Time: 5.15 p.m

He arrives with still plenty of time before the races start and head for the information counters near the entrance. He buys the program for the evening (it's in the shape of a small brochure). Instead of walking to the public grandstand like most people do, he heads up one floor to the Horse Owners Association lounge. He greets everyone and sits down on his chair at one of the tables. He brings out the program and the printouts from the Internet he collected earlier. The next five minutes he browses through the participators in the first race and compares his impression of these to what the betting printouts look like.

Time: 5.20 p.m

Nearby in the lounge area there is an exit to a balcony that allows the presence of many guests at the same time. This is a good point to stand if one wants a closer look on the passing horses. It is time for the warm ups and he stares and analyzes the passing horses and jockeys through the windows. He makes small notes and he also has his own symbols and codes when taking notes that only he understands.

Time: 5.40 p.m

Since Steve has been active on the scene for so many years he knows most of the officials and coachmen. He heads down to one of the guys who is working as a guard on the premises and asks what the latest is on shape and state of the competitors. In most cases he arrives hours prior to the race and begins to interact with the people out on the field to get an overview on the current state of the track surface, shape of the horses etc. Steve claims to in advance have decided on how to place his bets for the evening. Even before he leaves home. But the discussions and last information he receives at the track often influences his chosen systems.

Time: 6.10 p.m

Steve heads up back to the lounge and sits down again in his chair, chatting a bit with his friends about what occurred during the races the week before. It is now only ten minutes left before the race starts. We notice in general an increase in intensity of the discussions now when the race is approaching. They interact and move from table to table. Steve points in the program and discusses the different horses in the races. After a couple of minutes of discussion, Steve is now satisfied with what he has learned from the program, printouts and his acquaintances. He walks over to the counter and states his bets for the first races. He collects the receipt and heads back to the table awaiting the start.

Time: 6.20 p.m

Soon enough the buzz in the room becomes more and more silent as the race begins. The only voice heard is the one coming out of the TV in the corner. We can hear the speaker reporting how the participants are doing starting off, who takes the lead and so on. The members in the room are busy on one hand looking at the race and the other to compare the occurrences with their placed bets.

### 3 Field work summary

To clarify the picture of our impressions from the fieldwork, we comment on some questions and reflections mentioned by the visitors that we have observed and interviewed.

The track is not only the place of betting and viewing of sport performances. It is also the place for social interaction. From spontaneous, opportunistic to well established social groups within clubs and associations. Further, it is also common that groups are often formed between spectators that never have met before since they all share the same interest and topics of discussion. This notion of social interaction was widely mentioned to us from the visitors that we interviewed. The social activities are one of the major reasons for attending according to some of the interviewees. The current state of information resources at the track is a true overload of incoming data. Since the nature of mass mediums always has been to reach simultaneously a large audience with updates it cannot support interactivity, information on demand and personalization. This is where mobile IT enters the scenario, providing the audience with the possibility to browse information with content and character of their interest in comparison to traditional information resources.

Even though we performed these studies on different occasions and within different social groups, the visitors generally shared a common topic of discussion - the content of information accessible prior to the race. A frequent question between the visitors was: "What's your latest on the top horses in race one?" Two old friends stood together watching a horse warming up. Even though they were both witnessing how the horse performed during this warm-up, a heavy discussion started about what they actually saw out there, a couple of hundred yards away. "Does he got a limb or what?" "He did very nicely in the last race though, but maybe this on the other hand isn't his day".

## 4 Conclusion

We have learned in an early stage that lots of betting decisions were made based on the social interaction and discussions among the spectators. We know for a fact that the harness racing arena is a place of heavy amounts of data and that people are having a hard time handling it. Another indication on the need for IT support stems from the experience of the so called InfoMat mentioned earlier in this paper. The lesson learned here is that visitors appreciated the presence of technology supporting information retrieval in a personalized way. Since it was only one PC available it was hard for all spectators to get the time to access it due to queues. In the next section we will outline the upcoming steps in our research on providing this group with mobile IT support.

## 5 Future work

Design implications from our fieldwork together with the knowledge and history of the InfoMat will be used in our current work on developing our prototype system. We aim to evaluate this in a sharp manner at the arena to closer explore the use and contribution possible to this group of event attendants. This final stage of the first case study in our project will end in May 2001.

## 6 Acknowledgements

*Acknowledgements to be added*

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