

Continuous Information Provisioning for the Conference Participation Process

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Abstract: Conference organization and participation becomes subject of process optimization to increase the efficiency of knowledge transfer and the scientific exploitation of emerging communities of interest. Process optimization starts with a process model to analyse the planning aspects, the information flow, the coordination efficiency, and finally the efficiency of the knowledge transfer. Considering the information flow and the coordination efficiency as prerequisite for the knowledge transfer efficiency analysis we state that a mobile interface to the conference management information system would improve the coordination process during the conference and fosters the emergence of communities of interest. This paper presents an approach for a mobile conference planner application, integrated into a conference management system. The proposed functionality focuses on the improvement concerning orientation during a conference, material access, and managing social contacts working conference comprehensively. Furthermore, the post-processing of the attended contributions in the context of a conference shall be facilitated retrospectively.

1 INTRODUCTION

In this position paper we introduce the concept of a conference planner application for mobile devices providing a seamless transition between the preparation for the conference and the working up of the attended contributions subsequently to a conference. The conference organizer's web platform and the conference planner mobile application staying synchronized supporting participants and speakers from the creation of the schedule and from the write up to the working up phase with keeping their data organized in one single place, respectively. Furthermore, the conference planner application will follow a conference comprehensive approach, i.e., there will be one application for a large set of conferences of different scientific fields enabling its users to integrate data from conferences visited in the past, e.g., contacts or a user profile, into current conferences in which the user is going to participate.

Features of already existing conference applications regarding orientation during the conference, material access, and managing social contacts which facilitate our goal were examined, selected, and will be integrated into the conference planner application.

This paper is structured as follows: Section 2 introduces the standard conference process without the

usage of a conference mobile application. By means of an use case scenario, provided with Section 3, we outline how the conference procedure is simplified through our conference planner. In section 4 we give a survey of existing work in the field of mobile conference applications and describe to what extent the conference planner distinguishes. Section 5 depicts our approach for developing the conference planner application and the provided features. We conclude this paper with an overview of projected steps concerning the application's development process.

2 CONFERENCE PROCESS DESCRIPTION

The selected activities of a conference participation for authors and visitors can be divided into three phases: the phase before the conference (*pre-conference*), the phase during the conference takes place, and the phase after the conference (*post-conference*). A complete overview of the three phases and the involved tasks is given by 2. Below we consider the conference process for authors whose tasks to perform are a superset of those of a visitor.

The pre-conference phase includes the paper

submission, the reviewing process and the individual preparation for the conference. The reviewing process can be divided into subtasks. First the author has to sign up for the conference organizer's web page. After the registration process the respective conference page has to be visited for uploading the paper. This process is called regular paper submission. After the paper has been reviewed, the author receives a notification concerning the acceptance of the submitted paper and possible information about required improvements. After revision, the camera-ready submission is ensued by the author which will be printed in the conference proceedings. After the camera-ready submission deadline has been reached, the registration for the conference will be activated and the respective web page will contain the appreciable information to enable participants to plan the conference attendance. The conference planning process involves tasks like travel booking, accommodation, and generating a conference schedule on the base of selected conference components like presentations, workshops, and entire sessions whose compositions are described below.

Phase 2 consists of the conference participation. Usually the printed conference schedule generated by each participant on the conferences web interface is the only document providing an overview of the individual conference processes. Several sessions can run in parallel during a conference. A single session is partitioned into contributions, e.g., presentations, workshops, and notes. 1 outlines four sessions running in parallel. The grey boxes represent the contributions which are divided into four parts (see 1):

(a) **Actual Contribution:** in this sub-phase a presentation, a workshop, or a note is given.

(b) **Room Search:** before a conference participant joins a presentation she has to find the respective room.

(c) **Discussion and Notes:** after (b) there is a short time span where question can be asked to the speakers and the answers and interesting remarks can be noted for further purposes in phase 3.

(d) **Micro Community of Interest:** after (c) usually the only occasion to exchange each other, e.g., to communicate contacts is on the way to the succeeding presentation.

In the post conference phase, beginning with the return to the work place, the visitor reviews the attended contributions using the notes made during the conference. The extracted information can be involved in ongoing or future work. In the follow-up phase, contacts made on the conference can be

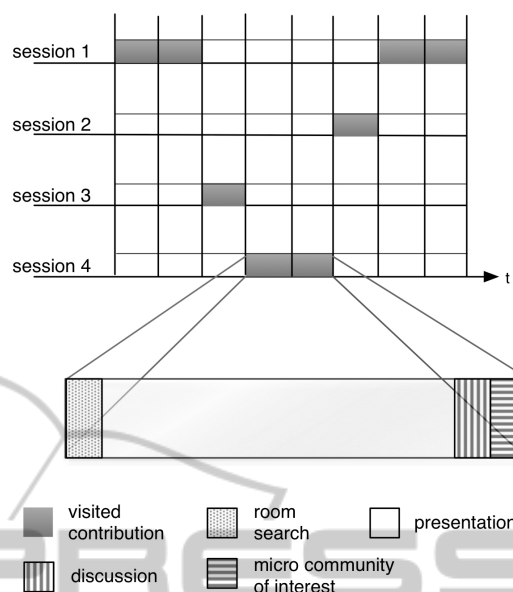


Figure 1: Detail View of a Conference Participation.

strengthened or new ones can be initiated on base of conference notes or exchanged material.

3 USE CASE SCENARIO

In this section we provide a use case scenario to give an overview of how the purposed conference planner application is embedded into the common conference process and how it can be used. We consider a conference visitor (Alex), in the role as speaker/author and attendee and using the conference planner in all of the three conference phases.

3.1 Pre-conference Usage

From write up to camera ready submission the actions are not influenced by applying the conference planner and they are accomplished as described in Section 2.

When the registration process is completed, Alex starts to plan the forthcoming conference. The backend automatically creates a profile for her contribution linked to her ensued paper. There she is able to provide additional materials (e.g., presentation slides) and include an abstract. Other participants can see her profile through the conference planner website and app. If Alex has no account from previous conferences, she has to create a new one including a short self-portrait and personal information (e.g., university/company, country). From a catalog, Alex selects contributions she likes to attend by marking them. With the help of the provided venue information Alex

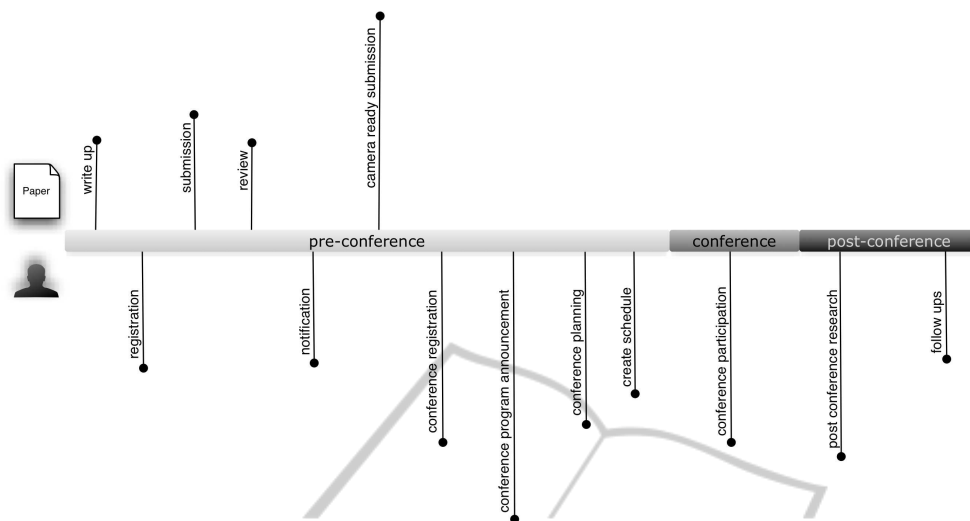


Figure 2: Standard Conference Procedure.

books hotel and flight. She can also plan touristic events beside the conference. A bidirectional synchronization between website and conference planner app takes place in certain timesteps or can be invoked manually.

3.2 Usage During Conference

During the conference, Alex can use the conference planner on her mobile device in online and offline mode. In contrast to the online mode, there exist the constraints that app-specific changes (e.g., adding a speech or marking it as a favorite) cannot be synchronized with the web-profile and that changes w.r.t. conference organization (e.g., the annulation of a talk) cannot be requested in the offline mode. However, changes are stored and will be pushed to the server when Alex's mobile device regains an internet connection. For the following events it is assumed that Alex uses the app in online mode. The first session starts and Alex takes a look at her conference schedule in the conference planning app to get the room number and an overview of the topic, so that she is prepared. She comes into contact with the man sitting next to her. He mentions an interesting presentation in the next session, but the next contribution overlaps with Alex's selection of talks. She unmarks her choice and marks the recommended presentation. While she accompanies her new acquaintance to the next presentation, she scans the QR-code from his name plate with the conference planner application to add his contact to her friend list, so she is able to stay in touch with him. While she attends her second presentation, Alex makes some notes with the conference planner app directly into the presentation view. Some

time later after finishing her note, a popup opens in the app and provides a hint, that the place for an ongoing presentation changed and that it is changed in her schedule, too. In a break between two presentations Alex takes a look at the newsfeed of the conference planner. There, she discovers an announcement of a meet and greet in the lobby.

3.3 Post-conference Usage

Two month later Alex wants to recondition one of the attended contributions because she can use its content for her ongoing work. She accesses her personal data including additives like notes or changes of the schedule made during the conference through the conference online platform. She navigates to the respective contribution profile and has access to the contribution related data. First she downloads the associated paper and reads her notes which are displayed in a provided view. She realizes that she had some questions she was not able to ask after the speech. From the contribution view, she picks the mail address of the speaker and send him a message with the remaining questions.

4 SURVEY OF EXISTING SYSTEMS

In this chapter the features of a wide range of *conference guide* apps considering those discussed in Section 3 are outlined.

We picked out three conference guide apps from areas of computer science, information visualization,

and wind energy, providing different sets of features to the conference attendees and reflecting the current market conditions (see 1):

- **CM, 2011** (IVDA, 2011) (Conference Manager): This app realizes a constrained conference comprehensive approach, meaning users have the possibility to access completely different conferences concerning the area of visualization information within one app. Social components were hardly considered.
- **GDC, 2013** (UBM Tech, 2013) (Game Developers Conference): A conference guide with extensive additional features concerning social networking: user profiles and user states, newsfeeds, connections to social networks and friend lists. Furthermore, past GDC events can be accessed from the app.
- **EWEA, 2013** (Sherpa Solutions, 2013) (European Wind Energy Association): An app related only to the EWEA in 2013, a conference on wind energy. It provides different criteria to visualize upcoming sessions and connections to social networks but no simple possibility to contact other conference attendees.

In the following, we depict the analyzed features segmented in two groups: orientation features and social networking features.

4.1 Orientation Features

The possibility to list the conference's agenda to enable the users to assemble their own schedule for the conference, to search for persons and sessions, to give information about each session, authors, and speakers, and the integration of a newsfeed are the basic elements which are available for almost all conference guide apps. The considered apps can be used in offline mode and are able to update themselves automatically during launching if a connection to the internet is available.

Venue information help users to orientate themselves within the conference territory by providing maps of the conference building. Additionally, information about nearby hotels, public transport, as well as event FAQs are represented.

4.2 Community of Interest

To facilitate communities of interest social network accessibility to Twitter, Facebook, and LinkedIn is included (GDC, EWEA). On the one hand, Twitter is used as a newsfeed to spread updates concerning the conference (e.g., a postponement of an presentation)

(GDC, EWEA), on the other hand it can be used by users to post messages which can either be read by every conference attendee or only by friends (specified in a friend list) of the poster using the guide app (GDC). The Facebook connection links to the conference's Facebook page, where additional conference comprehensive information can be propagated, photo and video material be accessed, and contacts be established. Furthermore, the social network LinkedIn can be used to establish business contacts. In addition, the GDC app enables a user to enter a state concerning the session he joins or the place he is located and to take a photo which both can be posted in each of the mentioned social networks.

An individually composed friend list as an optional feature of the GDC app enables a user to keep updated about her friends' activities and a possibility to restrict communication, e.g., for Twitter as mentioned above.

The possible entries of a user profile as it is used in the GDC app, are only restricted to basic information, e.g., name, company, activities and some private settings. Profiles aren't used to establish a link between users of the same interest group.

In spite of the lack of common social features of conference guide apps the conference manager provides a meet-me feature, i.e., a user can mark her position on the conference map and communicate it to other participants.

5 CONTINUOUS CONFERENCE PROCESS SUPPORT BY MOBILE APPLICATION

Although the evaluated apps, as described in the previous section, fulfill numerous requested features, each single app lacks some important functionality to overcome the support during a conference and the assistance to process the attended contribution in the post-conference phase. The issue of accessing material related to the attended contributions in most cases is completely neglected. At best the respected paper could be accessed. No single app has been discovered providing functionality to access audio and video material or speaker's slides. Alike the possibility to make notes at the appropriate contributions view was recognized to be absent. For each contribution the attendee has to involve additional applications and to fall back to pen and paper to perform an adequate documentation of each contribution which aggravates the process of workup in the post-conference phase.

Furthermore, no conference application was able

Table 1: Feature Overview of considered Conference Guide Applications (* the purposed conference planner).

orientation	CP*	CM	GDC	EWEA
agenda	yes	yes	yes	yes
individual schedule	yes	yes	yes	yes
management	yes	yes	yes	yes
contribution details	yes	yes	partially	yes
venue information	yes	no	partially	partially
conference comprehensive	yes	partially	partially	no
history	yes	yes	yes	no
synchronization	yes	no	no	no
offline mode	yes	yes	yes	yes
contribution search	yes	yes	yes	yes

material	CP	CM	GDC	EWEA
paper	yes	yes	no	no
slides	yes	no	no	no
audio/video	yes	no	no	no
make notes	yes	no	no	no

social contacts	CP	CM	GDC	EWEA
Twitter	yes	no	yes	yes
Facebook	yes	no	yes	yes
LinkedIn	yes	no	yes	yes
newsfeed	yes	no	yes	no
friendlist	yes	no	yes	no
user status	yes	no	yes	no
user photos	yes	no	yes	no
people search	yes	no	yes	yes

to synchronize to the conference organizer's backend which plays an important role in using the individual preparation data created in the pre-conference phase during the conference and especially accessing the data logged into the mobile device of each participant in the post-conference phase from a desktop computer.

The approach of developing one app which could be applied to a large spectrum of different conferences has not been realized yet. Either data of the same conference of the past or a very restricted amount of different conferences of the same field could be accessed.

Our aim is to develop a mobile application which supports the conference participant especially in phase 2, that is during the conference. The application should facilitate the aspects of orientation during a conference, material access, and managing social contacts. Furthermore, all data concerning the previously visited conferences should be kept and organized in one single place for the respective user. Especially, the working up of each contribution visited during the conference in the post-conference phase shall be supported. In the following we take a closer look at those aspects.

Orientation During Conference: One feature

is the synchronization of all data with the backend of the conference organizer. All user specific data are stored in a database connected to the backend, this allows managing content on different platforms (web and mobile). The user has access to all presentations and workshops with detailed information about authors, speakers, and spectators. She can mark presentations to add them to her own schedule or to add them to a read-later list. A 'remember me'-function for marked activities and a highlighting of presentations which are currently taking place are integrated into the application. Additionally, notes can be made for each presentation. An important feature for the post-conference phase is the ability to review conferences of the past accessible through a history. Other features are the access to venue information and a search functionality for people and activities. The application supports an offline and online mode to guarantee perpetual data access.

Material Access: During and after each conference the detail view of each contribution can be used to access the material of the selected contribution. For each contribution the authors respectively the speakers determine what kind of material will be presented: papers, slides, audio or video records. Those can only be accessed when the application is

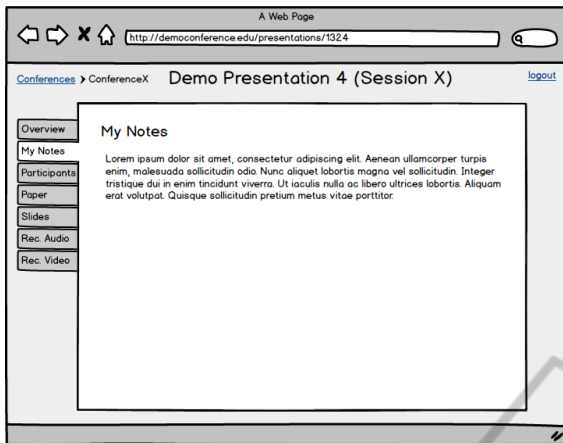


Figure 3: Web Front End: Post-Processing Material Access.

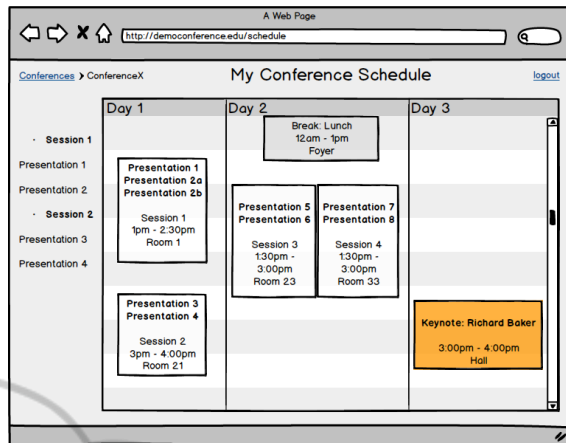


Figure 4: Web Front End: Schedule View.



Figure 5: Mobile Application: from conference selection to presentation detail view.

used in online mode.

Managing Communities of Interest: Another aspect is the social component of the application to facilitate communities of interest. While features like friend lists and friend status are common in social networks, most of the conference applications are missing this social function set. We integrate the functionality to add friends, visitors, speakers, and authors to a friend list. The user has access to contact information of participants if they agree to share these and the ability to send messages to each person who is attending the conference. The user gets current news about public actions via a newsfeed. The integration of Facebook, LinkedIn, and the external conference site gives a point of intersection to the public audience.

6 CONCLUSIONS AND FUTURE WORK

By means of the issued challenges and goals to be fulfilled by the comprehensive conference planner we are in the process of developing a prototype for the mobile application working with real data of preceding conferences. Several views of our paper prototype concerning the conference platform front end and the conference planner application can be found in Figure 3, 4 and 5. Hereafter the prototype will be introduced during an appropriate upcoming conference, associated with an evaluation phase concerning user tests and usability tests. A successfully emerging application would cause a second developing phase consisting of the integration of evaluation results and the extension of the conference planner for a wide range of

conferences with respect to different scientific fields.

Further steps would be to integrate the conference planner into emerging academic social networks. Academic social networks collect data from researcher profiles including, e.g., fields of research and from recorded search keywords of certain scientific software (e.g. Mendeley (Henning and Reichelt, 2008)) or webpages (de Oliveira et al., 2011), (Lopes et al., 2010).

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