From Analysis to Interface Design - the Example of Cuparla
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Just like in other towns, members of the Stuttgart city council have a large workload: In addition to their primary profession (e.g. as an engineer at Daimler Benz) they devote more than 40 hours a week to local politics. This extra work has to be done under fairly unfavorable conditions. Only council sessions and party meetings take place the city hall; the deputies of the local council do not have an office in the city hall to prepare or coordinate their work. This means, for example, that they have to read and file all official documents at home. In a city with more than 500,000 inhabitants they receive a very large number of documents. Furthermore, council members feel that they could be better informed by the administration and better use could be made of their time. Therefore Hohenheim University and partners` launched the Cuparla project to improve the information access and collaboration of council members.

A detailed analysis of their work revealed the following characteristics of council work:
• Since council members are very mobile support has to be available to them any time and in any place.
• Council members collaborate and behave differently in different contexts: While they act informally and rather open in the context of their own party, the behave more controlled and formal in official council sessions.
• A closer investigation of council work reveals a low degree of process structure. Every council member has the right of initiative and can inform and involve other members and members of the administration in any order.
• Council members rarely are power computer users. Computer support for them has to be very straight forward and intuitive to use.

When designing computer support we initially had to decide on the basic orientation of our software. We soon abandoned a workflow model as there are merely a few steps and there is little order in the collaboration of local politicians. Imposing a new structure into this situation would have been too restrictive for the council members. We then turned to pure document-orientation, imposing no structure at all on the council members work. We created a single large database with all the documents any member of the city council ever needs. However, working with this database turned out to be too complex for the council members. In addition, they need to control the access to certain documents at all stages of the decision-making process. For example, a party may not want to reveal its proposals to other parties before it has officially been brought up in the city council. Controlling access to each document individually and changing the access control list was not feasible.

Therefore, the working context was chosen as a basis of our design. Each working context of a council member can be symbolized by a „room“ . A private office corresponds to the council member working at home; there is a party room, where he collaborates with his party colleagues, and a committee room symbolises the place for committee meetings. In addition, there is a room for working groups, a private post office and a library for filed information. All rooms hence have an

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electronic equivalent in the Cuparla software. When a council member opens the Cuparla software, he sees all the rooms from the entrance hall (figure 1).

Figure 1: Entrance Hall

The council member creates a document in one room (e.g. his private office) and then shares it with other council members in other rooms. If he moves a document into the room of his party, he shares it with his party colleagues, if he hands it on to the administration, he shares it with the mayors, administration officials and all council members etc.

The interface of the electronic rooms resembles the setup of the original rooms. Figure 2 shows the example of the room for a parliamentary party. On the left hand side of the screen there are document locations, whereas, on the right hand side, the documents of the selected location are presented. Documents that are currently worked on are displayed on the ‘desk’. These documents have the connotation that they need to be worked on without an additional outside trigger. If a document is in the files, it is belongs to a topic that is still on the political agenda. However, a trigger is necessary to move it out of the shelf. If a topic is not on the political agenda any more, all documents belonging to it are moved to the archive.

The other locations support the collaboration within the party. The conference desk contains all documents for the next (weekly) party meeting. Any council member of the party can put documents there. When a council member gets prepared for the meeting, he or she merely has to check the conference desk for relevant information. The mailbox for the chairman contains all documents that the chairman needs to decide on. In contrast to his Email account all members have access to the
mailbox. Double work is avoided as every council member is aware of the chairman’s agenda. The mailbox of the assistant contains tasks for the party assistants, the mailbox for the secretary assignments for the secretary (e.g. a draft for a letter). The inbox contains documents that have been moved from other rooms into this room.

Figure 2: Parliamentary Party Room

Thus, in the electronic room all locations correspond to the current manual situation. Council members do not have to relearn their work. Instead, they collaborate in the shared environment they are accustomed to with shared expectations on the other peoples’ behaviour. Feedback from the pilot users indicates that this approach is appropriate.

Some specific design features make the software easy to use. The software on purpose does not have a fancy 3D-interface that has the same look as a real room. Buttons (in the entrance hall) and lists (in the rooms) are much easier to use and do not distract the user from the essential parts. Each location (e.g. the desk) has a little arrow. If a user clicks on this arrow, a document is moved to the location. This operation is much easier for a beginner than proceeding by ‘drag and drop’.

Furthermore, software design does is not restricted to building an electronic equivalent of a manual situation. If one wants to truly benefit from the opportunities of electronic collaboration support systems, one has to include new tools, that are not possible in the manual setting. For example, additional cross location and room search features are needed to make it easy for the council member to retrieve information. The challenge of interface design is to give the user a starting point
that is close to the situation he is used to. A next step is to provide the user with options to improve and adjust his working behavior to the opportunities offered by the use of a computer.