

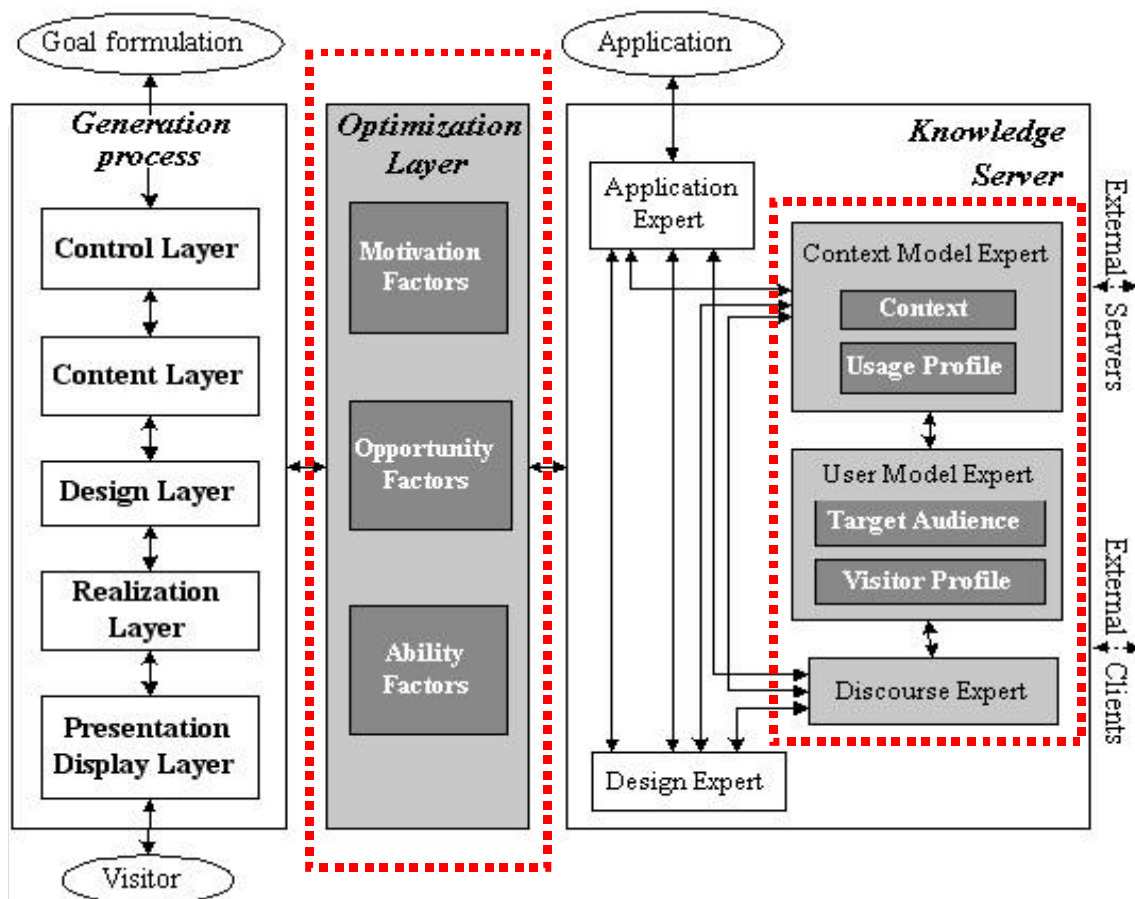
Title: Cuypers Meets Users
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Purpose: To establish the level of understanding of Susanne Loeber' s User Model [1] [2] and to stimulate further thought and discussion.

Structure:

- Description of the User Model
- High-level Implementation in Theory
- User Characteristics
- Knowledge Server
- The Cuypers Model
- Scenarios
- Future Plans/To Do
- References

Description of the User Model



User model from Susanne Loeber [1][2]

Within the Target Audience section of the User Model Expert there are two types of personas, the Author and the User. The User Model Expert also has a Visitor Profile which describes the knowledge available about the ' real world ' person who is visiting the site. This information is used

to select an appropriate User Persona based on the best balance of Motivation, Ability, Opportunity.

The Author persona describes the wishes/personality of the creator of the presentation. These may include the use of corporate colours or logos for example. This persona also contains constraints which describe the creation of a sensible presentation. For example, the text colour must be sufficiently different from the background for the text to be legible.

There are multiple User personas in the User Model expert. The User personas describe predicted user profiles such as ‘ young beginner student’ , ‘ educated researcher’ etc.

The Visitor Profile is the information available about the ‘ real world’ person using the system.

High-level Implementation in Theory

The Author persona is mostly encapsulated in the system constraints. Some factors such as company colour preferences, addition of logo or other stylistic preferences should be captured within a profile in the User Model Expert – this would allow further flexibility in the system. (Q: How is this factored into the User Profiles or into the final generation?)

The User personas are a collection of profiles in the User Model Expert. Each profile contains a collection of user characteristics and their values that are common to this User persona. (Q: What characteristics exactly?)

The Visitor Profile is a collection of user characteristics and their values gathered from the current user of the system.

Using the list of user characteristics provided by the Visitor Profile, a User persona needs to be selected. The idea is that the User profile chosen is the one which most closely matches the Visitor Profile and supports their Motivation, Ability and Opportunity levels. So the balance of MAO is used in the selection process. [This is fuzzy. Clarification – I meant that how the balance of MAO is used is unclear.]

Once the most appropriate User profile has been chosen, it is mapped to the best design, discourse and content solution. [This is really fuzzy! Clarification – I meant how the mapping is created and implemented is unclear.]

Susanne’ s response to above 2 sections on 2002-09-06

“The fuzzy stuff is not so fuzzy ;). When the visitor follows a certain route, she becomes mapped to a user persona who would have choosen (more or less) the same route. The more precise the mapping, the more likely the visitor has the same characteristics as the user persona or at least feels at ease.

The really fuzzy part does not exist, because the user persona contains all the rules how the presentation should look and feel. In other words, as long as the systems is not 100% sure who it is dealing with it will first use the author persona as a starting point or base of the presentation and 'change' the pages of the presentation little by little following the preferences of the user persona closes related to the behavior of the visitor and to the information already inside the visitor profile.”

Thoughts after reading Susanne’ s comments

1. Every visitor to Cuypers (as it stands) will follow the same route. This may not be the case in the future but for the prototype this is how it is.
2. Even in the future the route to get to the point of presentation generation (when the user persona has to be chosen) may not be long enough (or interesting enough) to be useful.
3. The system can never be 100% sure (probably not even 70%) who it is dealing with since there is only so much that can be gathered from the user's interaction with the system and it is always an assumption.
4. Therefore (by point 3) the author persona will always be the base of the presentation.
5. The presentations don't have pages. Perhaps you could say that each different screen is a new page but there is no regeneration between each screen.
6. There is only one chance to generate a presentation for the user, after this point it cannot be changed. A User Persona will need to be chosen at the point of generation and adaptation after this can't happen. Change would be due to user feedback which doesn't happen.

Expansion on points 5 and 6

It's really generation of a multimedia presentation not a hypermedia presentation so the concept of pages and adapting the style progressively from user input won't work. If it were a hypermedia presentation then it could perhaps make sense to change the 'presentation page' returned to the user after they click on a particular link. Doing this could have some interesting consequences for the presentation as a whole. How would the presentation end? What would the impact be on the structure of the narrative? A presentation (in this case at least) is a contiguous structure with a defined start and finish and is not open to alteration while in progress.

User Characteristics

This list of user characteristics is extracted from [1]. The quality (motivation, ability, opportunity) is given first along with a definition then a list of characteristics that affect that quality.

Motivation - desire to complete their plan

- *personal relevance (should be high)
- *values/cultural beliefs (should be consistent with)
- *plan (need, goal and tasks/strategies) (should fit the plan made) [based on need (social, non-social, functional, symbolic, hedonistic) from which goal is formed]
- *perceived risk (should be low)
- *attitudes (should have moderate inconsistency with)

Ability - resources available to the user to assist in completing their plan

- *knowledge
- *experience level
- *cognitive style
- *resources (eg: monetary)
- *age
- *gender
- *education

Opportunity - elements which could hinder the user from completing their plan

- *time available
- *distractive elements (reaction towards)
- *presentation format (layout, discourse style, level of interaction)
- *complexity of content structure

Knowledge Server

The User Model has the Application Expert, Context Model Expert, User Model Expert, Discourse Expert and Design Expert.

Application Expert provides the application specific information [3], retrieves content [2].

Context Model Expert contains information about the way and the product the user uses to view the presentation. [2]

User Model Expert is described in the previous section.

Discourse Expert guides the generation of the presentation structure using discourse models (eg: RST). [2]

Design Expert provides a container for all other knowledge (eg: Media/Modality Model, Design Constraints, Device Model) [3]

The Cuypers Model

The Cuypers Model [4] has different participants in the knowledge server namely the Domain Model, Design Model, Discourse Model, Platform Profile and User Profile. These equate approximately as follows.

Domain Ontology = Application Expert
Design Model = part of Design Expert
Discourse Model = Discourse Expert
Platform Profile = part of Context Expert [3]
User Profile = User Model Expert

The Context Model Expert is not included specifically in the Cuypers model but could be considered to feed into the User Profile as information provided by the system prior to presentation generation. It is partially contained in the Platform profile where device information is included.

The Cuypers model views these as knowledge sources, capable of providing information but not of reasoning and with no inter communication. The User Model views them as experts, capable of reasoning and with communication between them all.

Scenarios

User 1: Jack

Goal: Research, in depth information about a topic

Age: 28

Education: University degree in History

Knowledge Level: good research skills, high background knowledge of topic

Experience Level: high computer experience

Situation/Place: at home with good technology

Cognitive Style: Visual Learner

Physical Disabilities: None

Time Available: No time limit

Effect on presentation

Content:

- Detailed explanations, in-depth critiques and commentaries (opinion)
- Factual descriptions as text
- No (or limited) background, definitions, introductory material
- Examples as images
- Support of claims by images

Structure:

- Highly structured with logical and obvious narrative
- Eg: context, facts, commentary (opinion), contrasts, summary (visual/video)

Style:

- Serious, factual
- Speed should be slow
- Minimal amount of information presented per screen
- Length is unimportant
- High level of user control
- Minimise modal conflict (eg: no unrelated backing music)
- Minimise colour distraction

User 2: Sarah

Goal: Entertainment, intro. to subject before museum visit

Age: 8

Education: at primary school

Knowledge Level: very low knowledge of subject

Experience Level: low computer experience/skills

Situation/Place: at school, in classroom, adequate technology, high distractions

Cognitive Style: Audial learner

Physical Disabilities: None

Time Available: limited (<20 minutes)

Effect on presentation

Content:

- simpler, introductory pieces
- no need for commentaries or critiques
- very limited text
- lots of images, audio and video

Structure:

- Very simple narrative
- Eg: introduction, item1 ... itemN, conclusion

Style:

- Bright and entertaining (MTV style? :))
- Should keep it moving but allow enough time to take in each screen
- Use spoken, short explanations of single facts per screen of media

Minimise amount of reading
Keep length short (< 8 mins?)
Modal conflict is less important (doesn't matter if they miss something)
Bright colours, music etc.

Future Plans/To Do

Short term

1. Formulate a concrete list of user characteristics for implementation
2. Build an explicit and complete Owner profile for Cuypers
3. Create User personas for Cuypers

Long term

The long term goal is to introduce user modelling into Cuypers. The extent to which this markedly affects the style of presentation generated will depend heavily on the number of variables that can be influenced in the generation process. While theoretically user characteristics should affect all aspects of the presentation (content, style, structure), some of these presentation characteristics have only one or two available options implemented at present. Therefore the most important aspect of this goal is to implement a flexible and extensible method of user modelling that can adapt as new presentation structures are introduced and implemented and to demonstrate that the User Model can be fitted to the Cuypers generation engine.

References

- [1] Loeber, S. G., "Modelling the audience of a web-based presentation: context-driven, rhetorical approach"
- [2] Loeber, S. G., Aroyo, L. M., Hardman, L., "An explicit model for tailor-made eCommerce web presentations"
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- [4] Van Ossenbruggen, J. R., Hardman, H. L., Rutledge, L. W., "Hypermedia and the Semantic Web: A research agenda"
- [5] Stefano,
http://media.cwi.nl:8080/scratchpad/mail/Cuypers_Scenario.html