

Modules can be dragged and dropped to create individual study environments

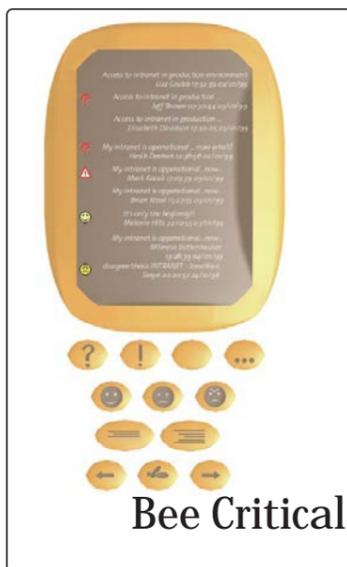


Teachers and students can drag and drop the workspace module to the personal working environment. There is a set of predefined modules like chat-boxes, library catalogues, web-pages editors, multi-user domains, bulletin boards etc. It is an open source catalogue to which everybody can add useful tool modules.



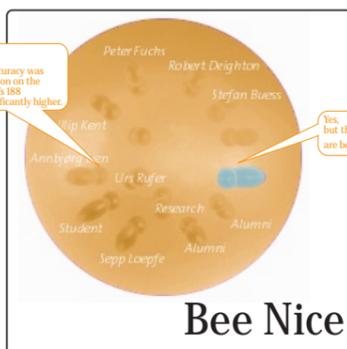
### Bees Agents that collect information

Bees accompany the user through the ETH World. They learn about the user's interests. They are sent out to collect information according to the user's profile. They could meet other bees and users and suggest information exchange.



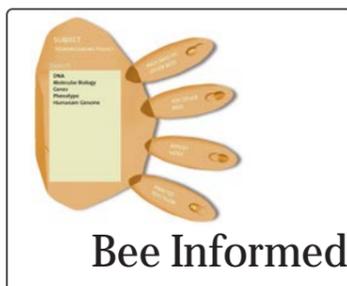
### Bee Critical Provides and collect comments about information

This is an additional interface that values information according to the rating of other users. The impact of these rating depends on the expertise of the users.



### Bee Nice Online Exchange

An online communication tool that connects all users working with a set of information at the same time and allows them to socialise and exchange further information and links.



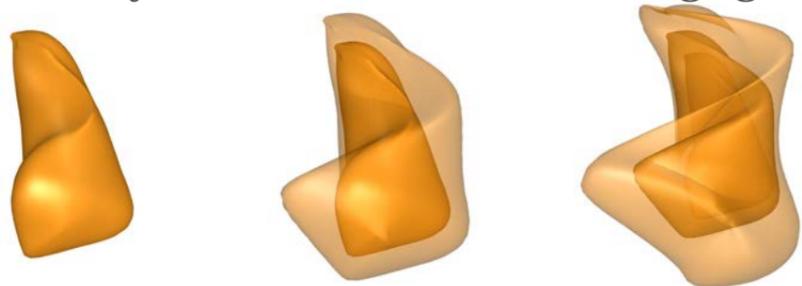
### Bee Informed Search Engine

An asynchronous smart search engine. It exchanges information with other bees and analyses the text flow of the user to augment the search process and update its knowledge about the users preferences.



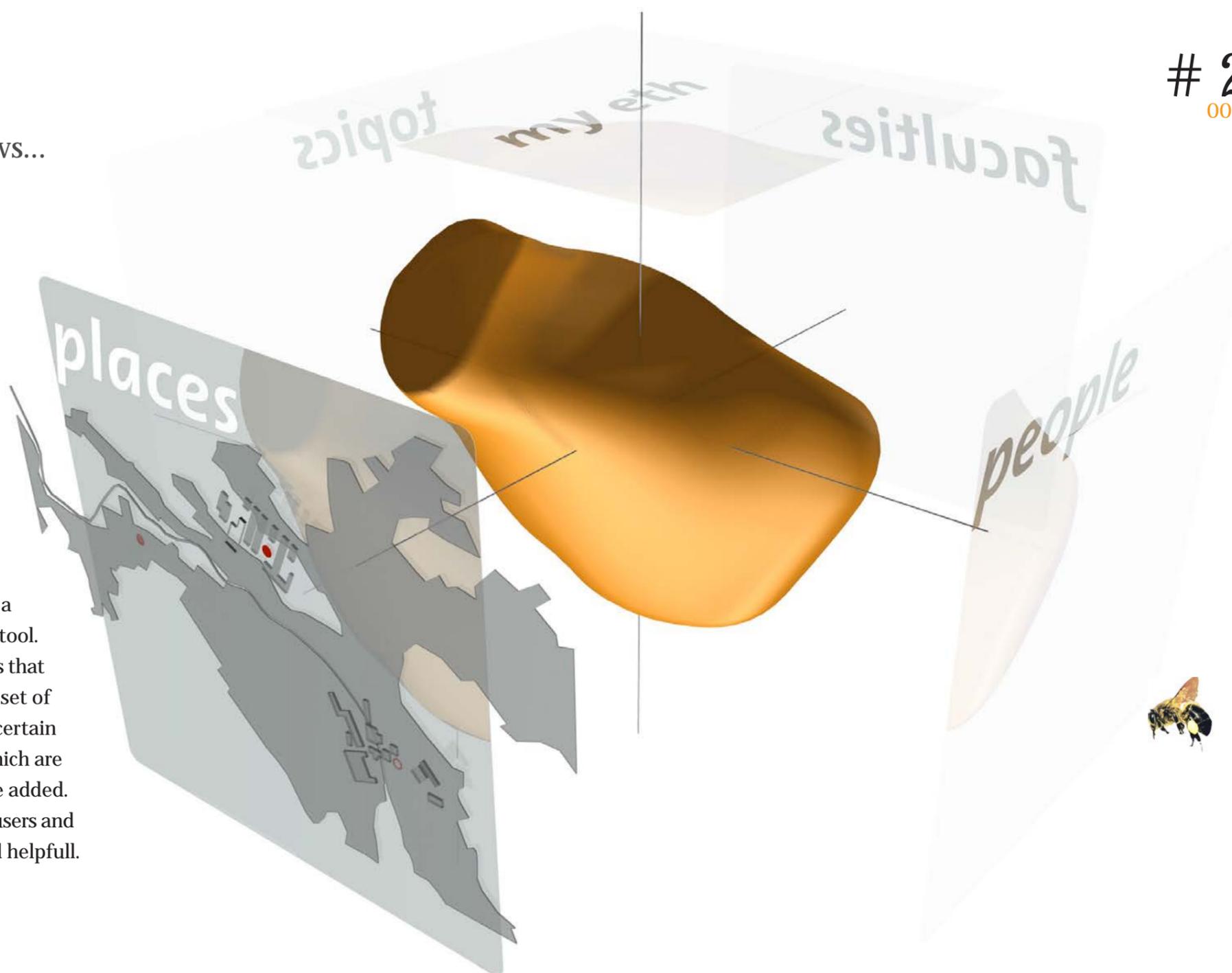
# Interface

the dynamic honeyblob evolves when knowledge grows...



The honey blob transforms according to the user's interests and habits. It develops a shape and thereby personal perspectives on the ETH World. My ETH arranges information personalised by ones working enviroment.

The honey blob is a multidirectional navigation tool. It offers different perspectives that arranges the same set of information according to certain aspects. Some of which are predefined. Other can be added. All perspectives adapt to the users and become more clever and helpfull.



Accessing information through the different contexts...



**People.**  
This perspective connects the information in a context of the persons behind it.

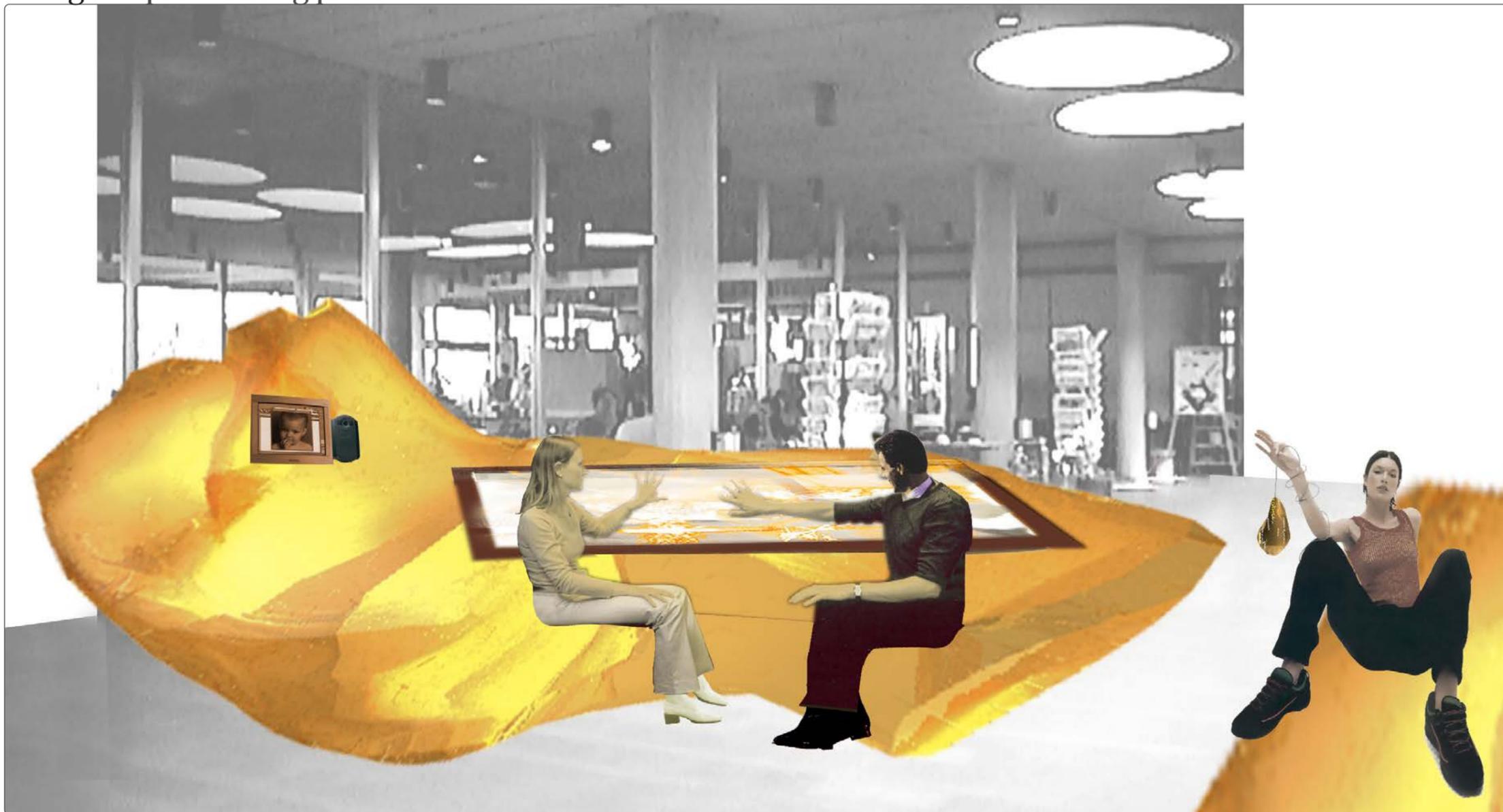
**Places**  
displays the information according to the location of its physical equivalent and context.

**Topics**  
Structures the ETH World in the context of its topic.

**Faculties**  
Displays informations according to its institutional surrounding.

# Learning Landscape

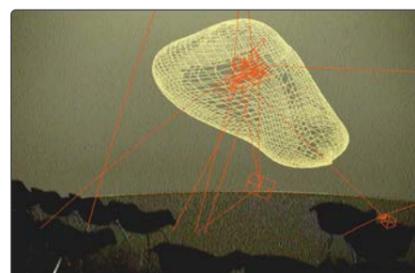
Lounges: Open meeting places that are connected to virtual ETH World



Physical Spaces are equipped with interfaces to the virtual ETH World in order to provide access to the information where it is needed.



Lounges provide access to information systems. Team work and communication are encouraged by common workspaces. Collaborative interfaces can be used by several users at the same time.



**Presentation Spaces**  
for virtual presentation



**Lecture Hall**  
integrate the personalised modules from the learning environment in the existing spaces.



**Bee There Terminals**  
display the activities inside the rooms and links them to the associated information.

**Main Hall**  
has an information and exhibition blob that presents the ETH World to visitors

# Physical Spaces

ETH World: The Learning Landscape (panel #3)

## My ETH

Open *ETH World* and enter your personal information structure. Find your schedule, your highlights of topics, people, faculties and places, your e-mail and other personal information on your 'computer'screen. Need to know more? Walk into the learning landscape...

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### Looking at the landscape through the

**Honeyblob.** A knowledge navigator is not just about structuring information. It's about creating links between different contexts, that surround information on the net. Usually there is no authorship, no sources or physical appearance of a person or a publication. That makes information difficult to value.



The Honeyblob adds different contexts to the information on the web. It has four basic elements: topics, people, faculties and places. Moreover the Honeyblob is dynamic. It evolves when knowledge grows. It creates room for more valuable context.

**Topics.** This context relates the ETH to the rest of the world. By structuring the ETH's knowledge in a worldwide used manner, information between ETH and the rest of the world can easily be exchanged. ETH's knowledge will be accessible to the whole world, a basic need for a leading university. The members of ETH also benefit from this worldwide used information structure because it makes information seeking and international cooperation easier.

**People.** This context gives you information about the author of a website, or about the references that are made. It helps you identify the persons behind the information. Who wrote the website, who is the reference and what relationship do they have with the ETH?

**Faculties.** This context is especially valuable for members of the ETH. Since the faculties are the backbone of the ETH they form a vital information structure which lets members of the ETH find their way around the ETH virtual community.

**Places.** This context helps you link the virtual and physical world. It is especially useful for online learning. You can not only see a virtual study environment, but also know where the actual happening takes place. Maybe you want to join. Maybe you just want to ask a question to somebody who is attending a specific meeting.

## Study environment

To encourage multidisciplinary research and collaboration there will be self-organising rooms on the internet for all types of study processes. Classes, conferences, research and other more traditional study environments increasingly integrate the net. They exist next to the non-hierarchical open source research projects.

The *learning landscape* gives any member of the ETH world the opportunity to create easy built study environments. Virtual and physical elements are dragged and dropped into your own virtual room. XML (a sophisticated extended web language) will be used to provide pre-designed spaces, that can be filled with e-mail and discussion list, bulletin boards, forums, chat, cartoon chat or multi user environments (MUD's). Other useful elements are added to the virtual elements. Physical elements like the usage of a booked of a classroom, arranging beamer and videoscreens will also be online actions.

The research rooms are also used to constantly develop new features for the information technology. Web Warehousing, data-mining and other techniques will be developed and used in the study environment.

Members of the ETH are on a operating system that makes it possible to distribute process intensive tasks over the net. This way time consuming tasks are done by as many computers as possible. Of course only computers, that are sitting idle will be used.

## Link the worlds

Experience, touch, hear and feel the virtual world around you. You will find LCD-screens outside classrooms to show what information is being discussed inside the room. Lounges, offices, labs and other physical surroundings of members of the ETH are linked with the virtual world. ETH's core business, the evolution of knowledge, becomes visible. Virtual places will no longer be abstract, immaterial worlds. They are extensions of the physical world and help organise the infrastructure and facilities of the ETH.

Information on the internet is connected to the physical world. You can see where the faculty is located. You can see where people work. You can organize the rooms and facilities you need.

WLAN. This wireless area network plays an essential role in connecting both worlds. Switching worlds will become place-independent. You can go into the virtual classroom anywhere and anytime you want. To stimulate this link the ETH can give all members a free network computer that is linked with the ETH world and with their personal computers. You use applications that run on remote computers and save data to the virtual hard disk. The net is the computer.



### Bee present

Being present on the internet means seeing and being seen. You see other members of the ETH on the net. They see you. You can contact them, have discussions and get personal help finding the right information for you. For that purpose we will develop three bees: Bee nice, Bee critical and Bee informed.

Other bees can be added by the users.



**Bee Nice.** This personal assistant makes you visible in the ETH World. Bee nice will represent you when you visit a website. You meet other visitor's in real time and real place. You can talk to them, like you talk to your neighbours. Bee Nice is a subtract from chat environments. A plug-in activates the bee that accompanies you on the web. You can contact bees that are present at the same website. Every Bee Nice carries the name of the person he represents or tells if it's a student, teacher, researcher, etc. If you want to make a personal remark to a specific bee you can whisper.



**Bee Critical.** This historical assistant leaves traces on websites with personal statistics (hits and times), critics and comments. You can view other user's comments and see which Bee Criticals visited the website in the past. Bee Critical is an usefull tool for an online study environment. It is a database driven application, that keeps track of the Bee's actions. If a Bee enters a page it sends that information to the database at the ETH World, who sends the historical traces of that specific website back to the Bee.



**Bee Informed.** This highly sophisticated assistant that helps you find information on the internet. You can send out Bee Informed to search for information about personalised topics, pictures or to gather and analyse statistics. The Bee will scan the web and other data bases for information. He can exchange information with other Bees. Bee Informed can be invisible for days until he finds interesting URL's or other information. You can accept or reject his suggestions and the Bee will get to know your interests even better. Bee Informed is a combination of different software packages, such as Eurospider and multi-agent systems. He uses data-mining techniques for analyzing information. Narrow network makes this bee more and more intelligent. This Bee is an experimental part of a work in progress.

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Privacy and Data Protection  
All Information about users will be only accessible through personal passwords. By encrypting all personal data the information is not available for unauthorised access but merely inexistent. Only a user that holds the password can encrypt an access his/her information.