Comparing Multi-Media Concepts by Using Socio-oriented Modeling Methods

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Introduction

Expecting an enormous variety of multi-media applications the question arises how to compare different multi-media concepts and to select the promising approaches.

Multi-media comprises every kind of system which is used to generate, manipulate, distribute and receive documents or transient data which include pictures (fixed as well as animated), graphics, sound, speech, text, applets, etc. Furthermore these systems can be used to support cooperation and communication; therefore groupware and multi-media will be increasingly integrated.

Most important, these systems have to be embedded into an appropriate organizational structure as this is the decisive factor of success. It includes mostly formal as well as informal social aspects.

To anticipate the acceptance of multi-media applications, besides costs, their usability and usefulness related to human needs have to be considered. Therefore a modeling and evaluation method is required which is oriented towards socio-technical aspects.

The modeling method

We provide a modeling method based on a system of "buildingblocks" such as *fetching data, distributing data, checking for access rights and establishing synchronous communication channels* . These "blocks" can repeatedly be used to "build" different multimedia applications by employing a specific graphical notification method consisting of elementary symbols for roles, activities, objects, transitions and logical connections [e.g. Dix et.al. 95; Raasch, 91; Scheer,91]. With this method, the set of buildingblocks can be enlarged if necessary. For example, a multi-media Group Decision Support System is "built" by "blocks" such as *moderation, evaluation, whiteboard, e-mail* and *merging of data*.

To deal with social aspects we identified:

- those "buildingblocks" which have social relevance such as *making data anonymous* and *introducing pseudonyms*

- specific attributes such as *confidentiality or quality of information*

- certain structures having social relevance such as *free choice of communication means* [Roßnagel, 91]

- possibilities to represent incomplete or uncertain information and processes, e.g. objects which cannot be definitely described by listing their sub-objects or attributes

Comparative Evaluation

We derive a set of if-then-rules by referring to the literature in the field of ergonomics and technology assessment [e.g. Herrmann,94; VDI, 91]. These rules exploit the social aspects as listed above to make comparative evaluations between different multi-media concepts and to specify which concepts are more advantageous depending on which social values. For example, if confidentiality is required, the availability of encryption methods must be considered for the comparisons. Furthermore, requirements for developing multi-media competence and for user participation can be identified.

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