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## Adaptive Interfaces

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### Synonyms

[Context-aware interfaces](#); [Personalized interfaces](#)

### Definition

A specific class of user interfaces that are able to change in some way in response to different characteristics of the user, of the usage environment, or of the task the user is supposed to accomplish. The aim is to improve the user's experience, by providing both interaction mechanisms and contents that best suit the specific situation of use.

### Key Points

There are a number of ways in which interface adaptivity can be exploited to support user interaction. The interaction dimensions that are adapted vary among functionality (e.g., error correction or active help), presentation (user presentation of input to the system, system presentation of information to the user), and user tasks (e.g., task simplification based on the user's

capabilities). Adaptivity along such dimensions is achieved by capturing and representing into some models a number of characteristics: the user's characteristics (preferences, experience, etc.), the tasks that the user accomplishes through the system, and the characteristics of the information with which the user must be provided.

Due to current advances in communication and network technologies, adaptivity is now gaining momentum. Different types of mobile devices indeed offer support to access – at any time, from anywhere, and with any media – services and contents customized to the users' preferences and usage environments. In this new context, *content personalization*, based on user profile, has demonstrated its benefits for both users and content providers and has been commonly recognized as fundamental factor for augmenting the overall effectiveness of applications. Going one step further, the new challenge in adaptive interfaces is now *context awareness*. It can be interpreted as a natural evolution of personalization, addressing not only the user's identity and preferences but also the environment that hosts users, applications, and their interaction, i.e., the *context*. Context awareness, hence, aims at enhancing the application usefulness by taking into account a wide range of properties of the context of use.

### Cross-References

► [Visual Interaction](#)