Companion Systems

- Companion Systems are continually available cognitive technical systems that provide their functionality in a completely individualized way.
- They try to adapt their behavior to the user's:

  - Preferences
  - Needs
  - Emotional state
  - Capabilities
  - Requirements
Occurring problems in human-companion interaction

- Interference with the autonomy of humans in general, by:
  - Sensory autonomous changes by the intelligent environment
  - Autonomous decisions or actions by the companion
  - Unexpected reactions by the companion

  > Decreasing trust in the system (e.g. because transparency is lacking)

  > Frequency of use might be decreased, the way of interacting with the companion might be changed or in the worst case scenario the companion won't be used anymore

Most modern dialogue systems don't consider these problems!

> Need for adaptive dialogue management
How to remedy these problem

• Lacking transparency:
  – Explain unknown concepts (e.g., by providing definitions)
  – Explain why / why not the system did something
  – Describe the process that lead to a system answer/action

In order to treat explanation issues accordingly they need to be incorporated in a dialogue model.
e.g., Explain unknown concepts

- Every user has different knowledge
- Knowledge is very domain dependent
- Common sense knowledge doesn’t have to be imparted
- Different situations require different explanations

Explanations should be user- and situation adaptive