

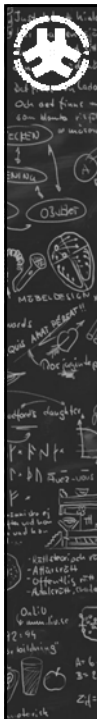


Pragmatic
Qualities of Information Systems
- Actability
Criteria for Design and Evaluation

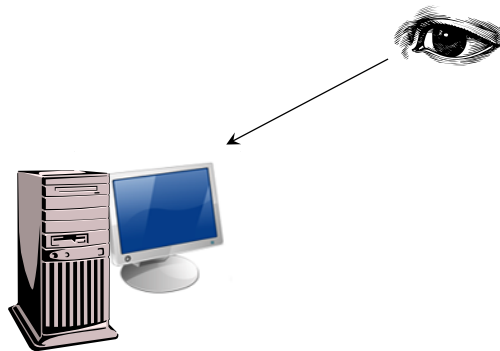
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Qualities depend on perspective taken

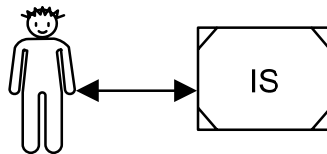


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Ways to conceive information systems (1)



A personal instrument?

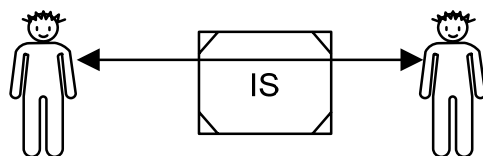
An artefact to interact with?

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Ways to conceive information systems (2)




A communicative instrument?

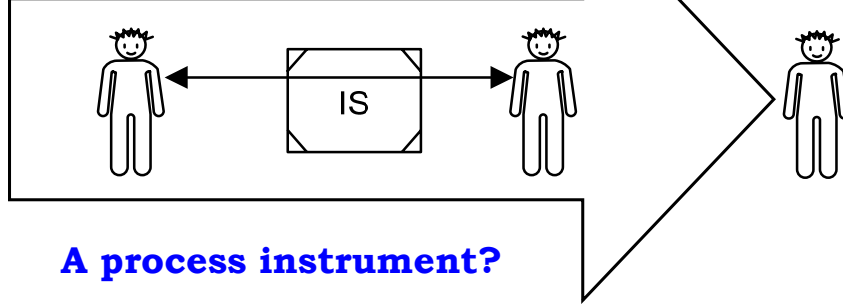
An artefact for mediating communication?

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Ways to conceive information systems (3)



A process instrument?

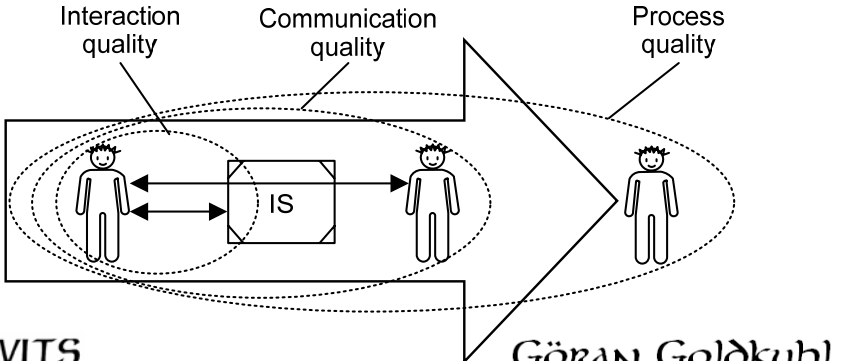
An artefact to improve business processes?

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Which one to chose?

- Interaction artefact?
- Communication artefact?
- Business process artefact?
- **"Informations systems actability" comprises all three perspectives**



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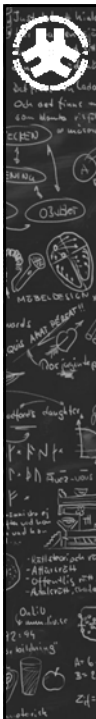


IS Actability

- A practical theory conceptualizing IT artefacts, users, actions, workpractices and business processes
- Operationalised into methods for
 - requirements engineering
 - user interface design
 - conceptual modelling and database design
 - IS evaluation
- Theoretically grounded in
 - Language Action Perspective & Speech act theory
 - Semiotic theories
 - Pragmatic philosophy
 - Social action theories
 - Activity theory
 - Affordance theory

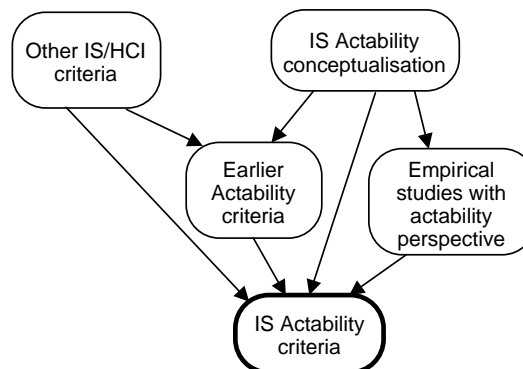
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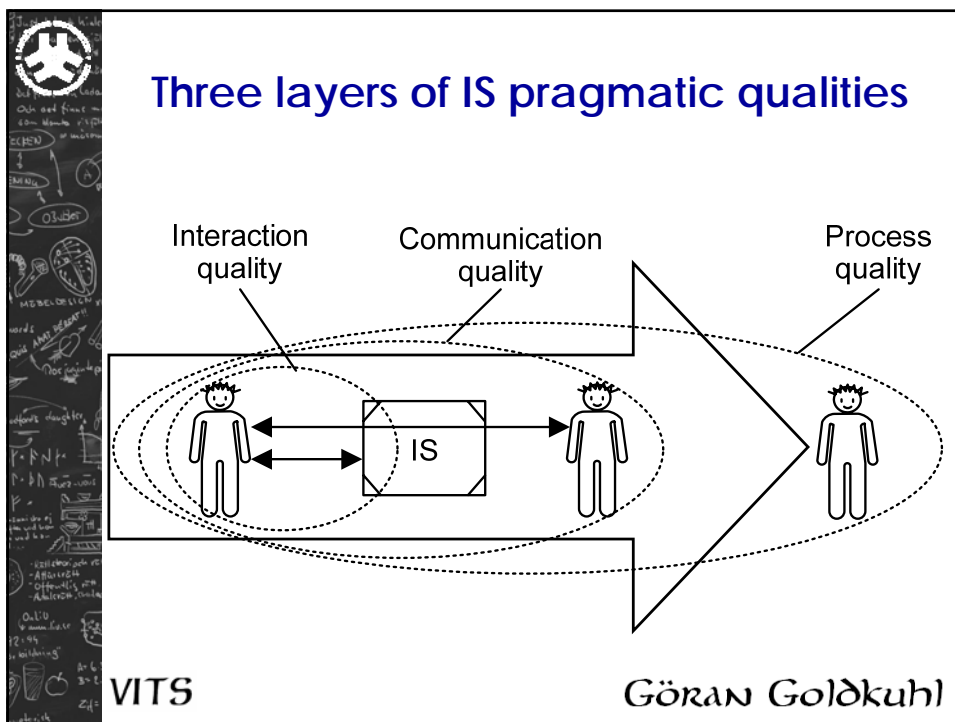
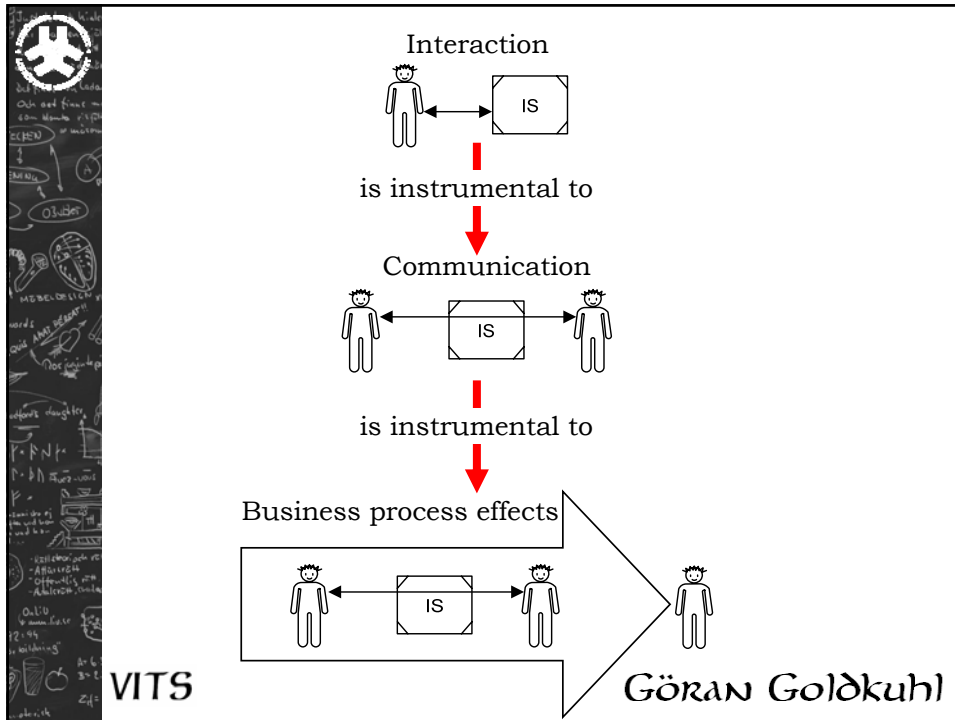
Purpose

- To formulate pragmatic qualities of IS
- To formulate IS actability criteria, to be used for
 - Design
 - Evaluation



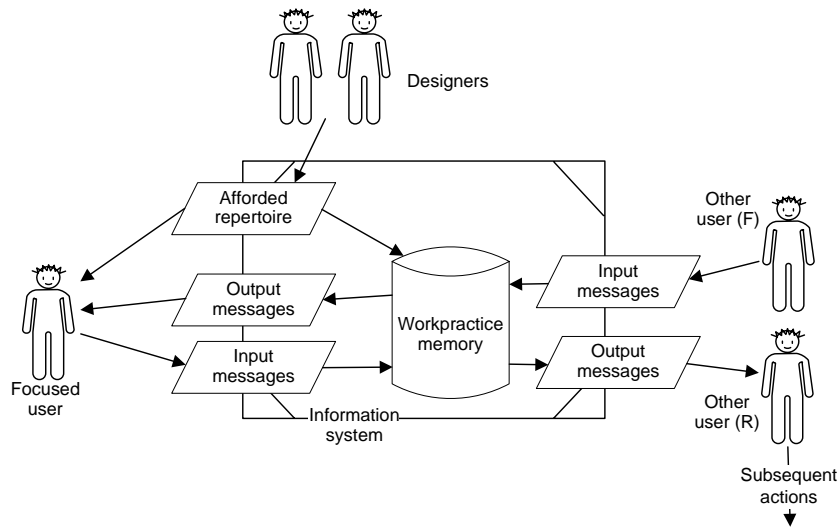
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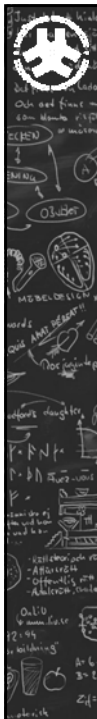


Actability conceptualisation of IS



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Three groups of actability criteria

- Interaction quality criteria (9)
 - Fundamental interaction criteria (5)
 - Navigation criteria (4)
- Communication quality (8)
 - Reading criteria (3)
 - Formulation criteria (5)
- Process quality (1)

18 criteria

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Interaction quality criteria

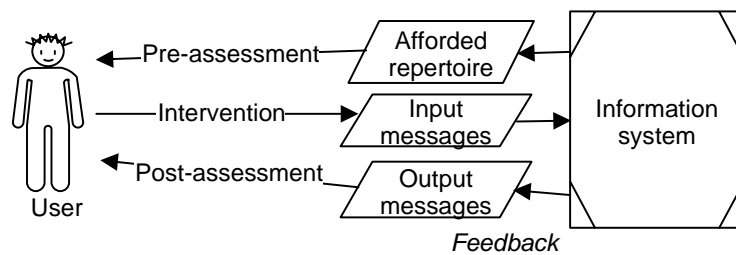
Fundamental interaction criteria

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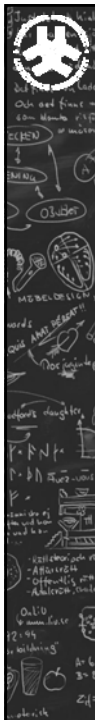


Human-system interaction



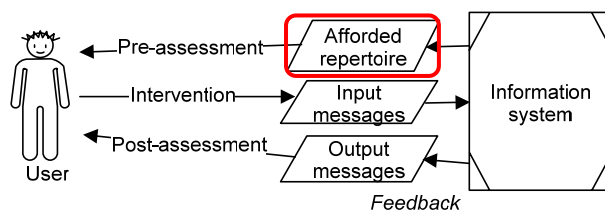
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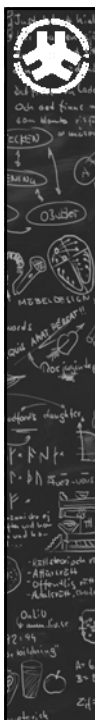
Clear action repertoire

- The system should **expose** its **action repertoire** in a clear way to the user.
- A clear action repertoire enables the user to be well-informed what do with the system and that he can perform subsequent actions with confidence
- An actable system should have a clear action repertoire



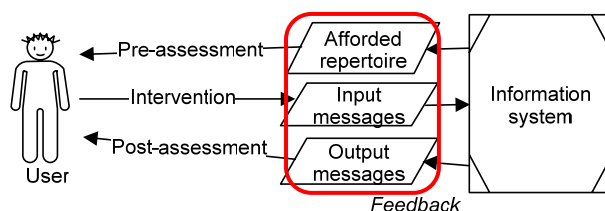
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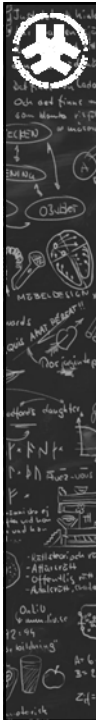
Intelligible vocabulary

- The used vocabulary should be intelligible and correspond with the users' **workpractice language**
- This enables the user to act with confidence in many interactive situations and to interpret information from the system accurately
- An actable system should have an intelligible vocabulary



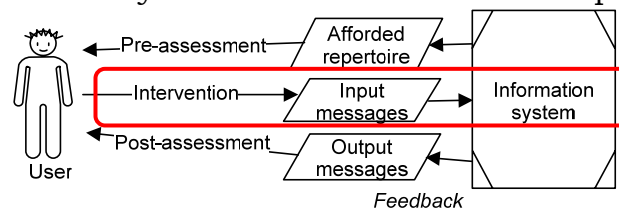
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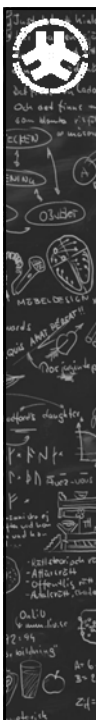
Action transparency

- The user should **understand in advance** what will happen when he performs different IT-mediated tasks
- This enables the user to act in confidence when interacting with the system
- The user becomes well-informed about the action repertoire and can anticipate the consequences of different actions
- An actable system should be action transparent



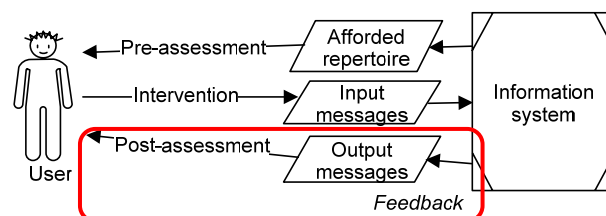
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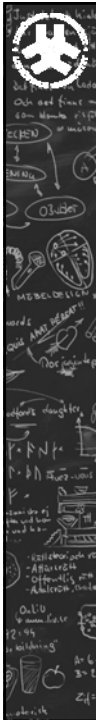
Clear feedback

- The user should receive a **clear response** (a feedback) to his intervention to the system
- This feedback enables the user to post-asses his intervention properly and thus to be sure about the results of his earlier action
- An actable system should produce clear feedback to the user



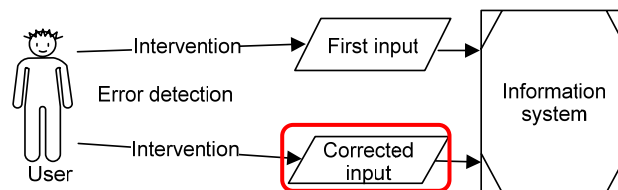
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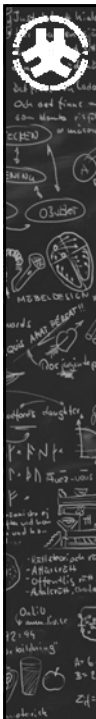
Amendability

- The user should be able to **correct** an earlier erroneous action
- This enables the system to be more accurate and permit the user to make certain errors without severe consequences (a “forgiving” system)
- An actable system should have amendability; i.e. to be possible to recover from identified erroneous actions



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Interaction quality criteria

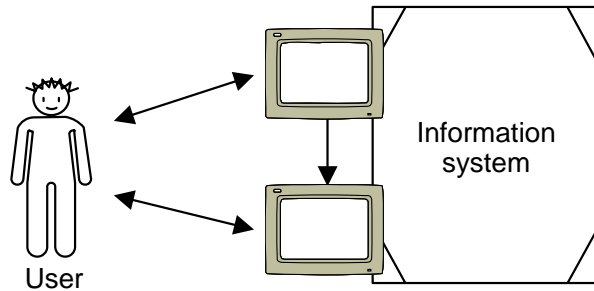
Navigation criteria

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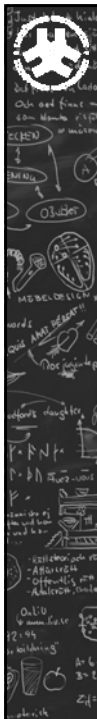


Navigation



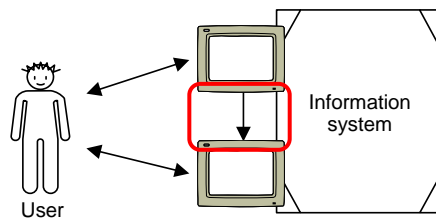
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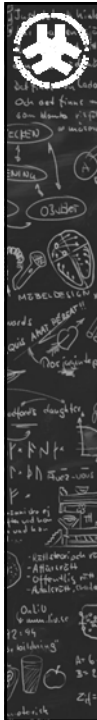
Easy navigation

- The user can **move around** in the system in a controlled manner.
- This enables the user to get to the desired spot in a system easily
- An actable system should be easy to navigate



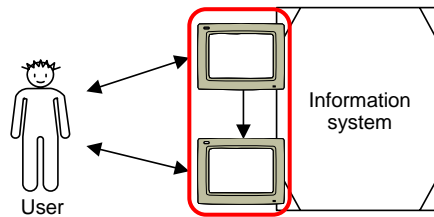
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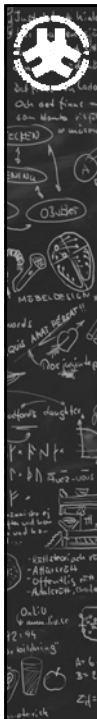
Action stage overview

- The user should get an **overview** of the IT-mediated **work process** and where he is in this process at the moment
- This makes the user aware of the subsequent stages of a work process and thus what is expected from him
- An actable system should give action stage overviews



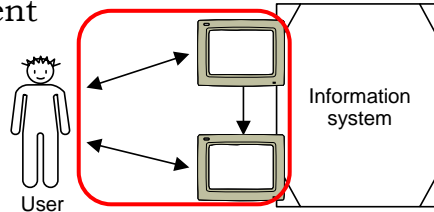
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Conceptual consistency

- The user should meet a **consistent terminology** and other symbology in the system
- This prevents the user to be confused when using the system - the user can act with more ease and comfort
- An actable system should be conceptually consistent



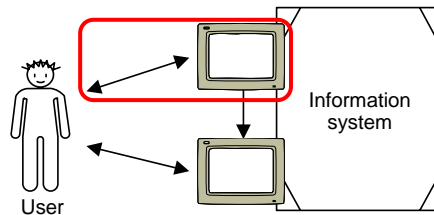
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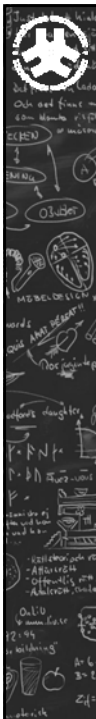
Action accessibility

- The user should have **easy access** to action affordances when needed
- This enables the user to perform his tasks fluently and avoid unnecessary movements within a system
- An actable system should have proper action accessibility



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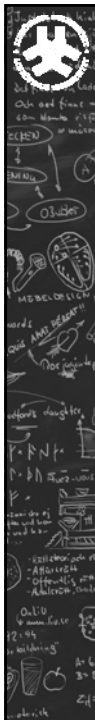


Communication quality criteria

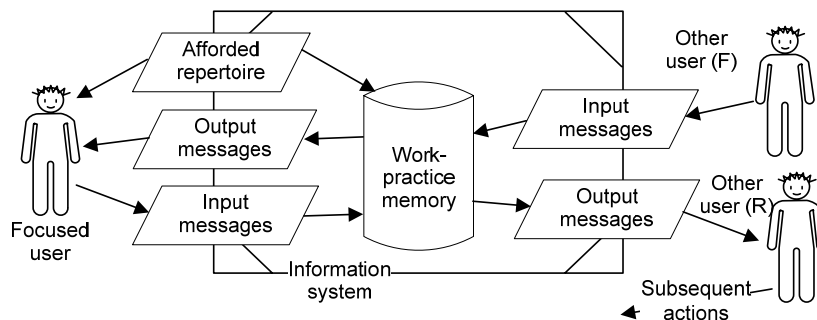
Reading criteria

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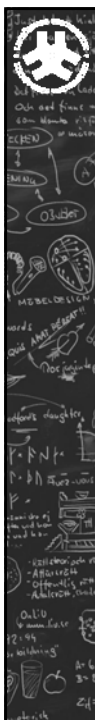


Human-through-IS-to-human communication



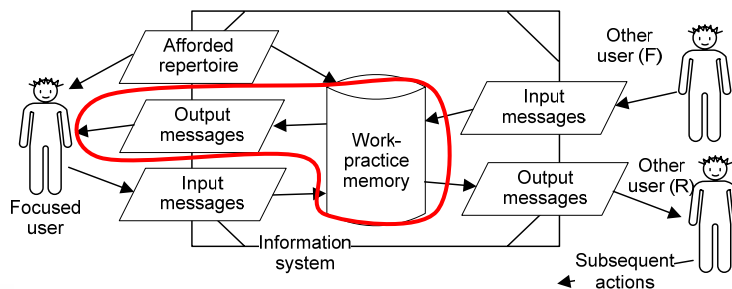
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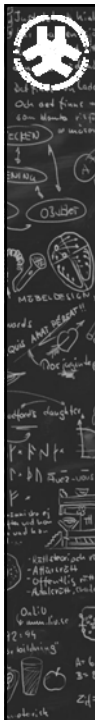
Clear and accessible workpractice memory

- The user should have **easy access** to the **workpractice memory** of the system (= messages from other users)
- This enables the user to get informed about different relevant issues in the workpractice
- An actable system should have a clear and accessible workpractice memory



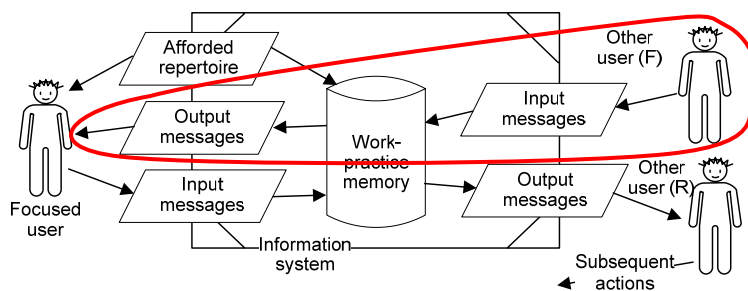
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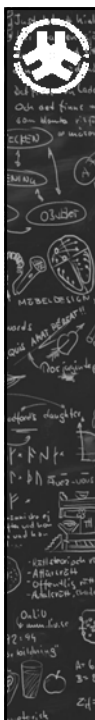
Actor clarity

- The user should as far as possible be aware of **who has said what** through the system
- This may enable the user to reach contact with originators of messages
- An actable system should have actor clarity (i.e. visible senders of messages)



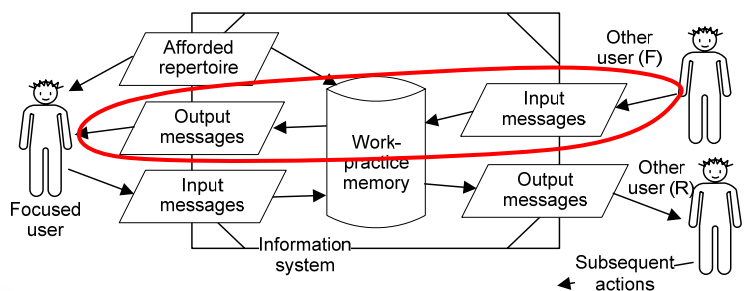
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Intention clarity

- The user should be aware of **intentions** of the conveyed messages
- This enables the user to properly understand the full meanings of read messages
- An actable system should have intention clarity



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Communication quality criteria

Formulation criteria

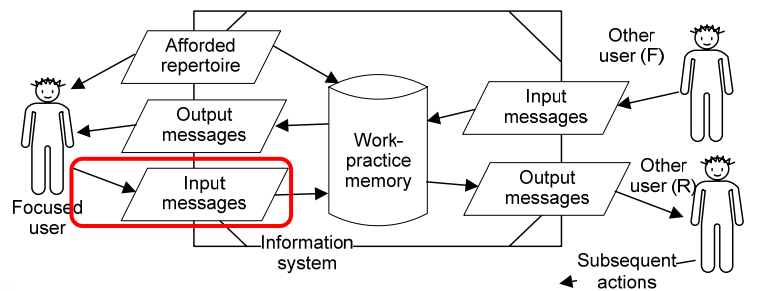
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Satisficing communication needs

- The user should be able to realize **communication needs** through formulating messages into the system
- This facilitates communication in the workpractice and puts it into organised and recognised patterns
- An actable system should satisfy the users' communication needs



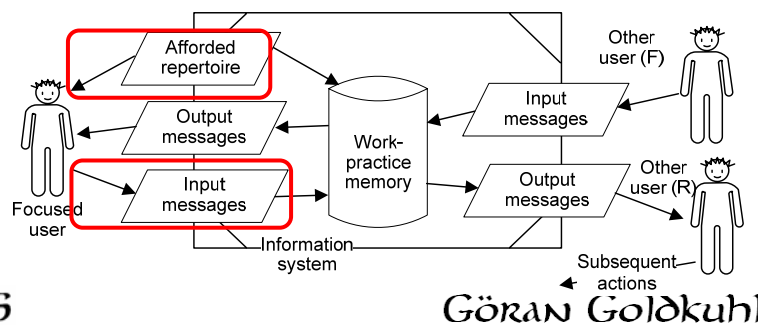
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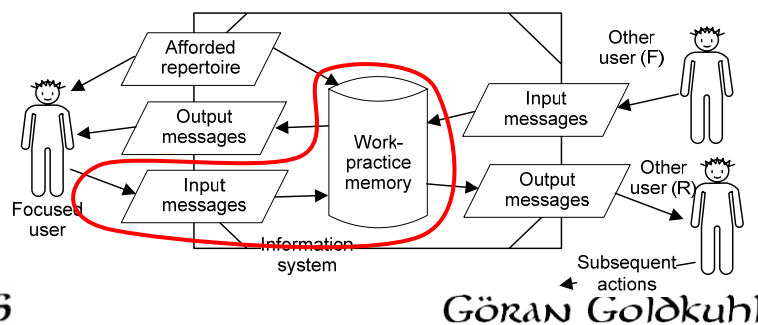
Relevant communication demands

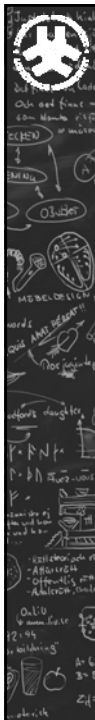
- The user should **not** be demanded to **re-register** information into the system that is already kept by the system itself
- This will not put unnecessary burden on the user
- An actable system puts relevant communication demands on the user



Workpractice memory addition

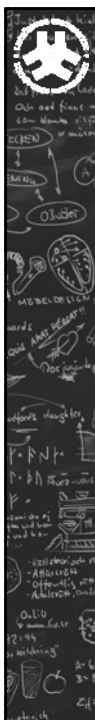
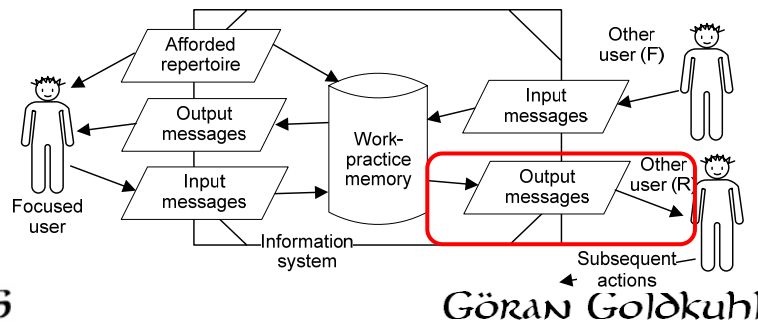
- The system should process and store input messages in proper ways in order to establish **good communication conditions**
- This enables later retrieval and reading of messages and intended distribution of messages to targeted addressees
- An actable system should have an updated workpractice memory, through message addition





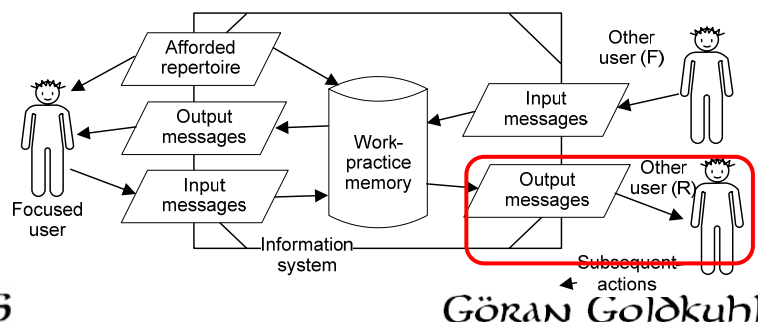
Addressee relevant communication

- Relevant messages should be **presented to intended users** (addressees)
- This creates a full communication process from sender to receiver
 - The intentions of the sender to communicate something to targeted receivers will be fulfilled
- An actable system should have addressee relevant communication



Addressee adapted communication

- Messages should be **presented to intended users** (addressees) in **appropriate ways**
- This enables the addressee to be reached by the message and use it accordingly
- An actable system should have addressee adapted communication

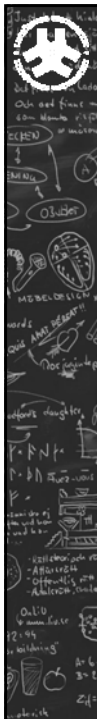




Process quality criteria

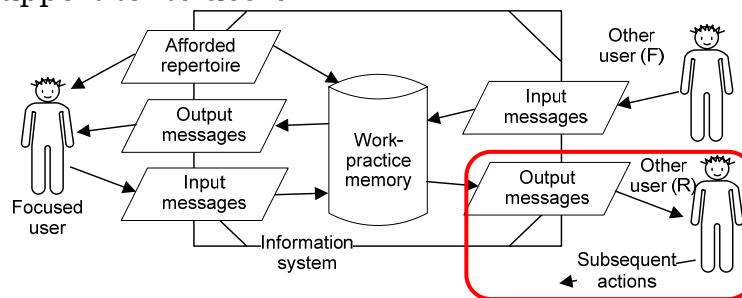
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Subsequent action support

- Information from the system should be **useful to its users**
- Information from the system should thus contribute to process quality of the workpractice through enabling or improving actions that are seemed pivotal.
- An actable system should give appropriate action support to its users



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