Computer Supported co-operative Work (CSCW)

Revision Lecture

Learning Outcomes

- Revision & Consolidation of previous lectures
  - Summary
  - Reflection
  - Interaction
    - Your chance to ask questions

Lecture organisations

- Main topic review
  - Group work
  - Groupware
  - Evaluation of Group-ware
  - Issues in Groupware Design
  - On-line communities
  - Usability and Sociability
 - Global communication

How to study?

- Revise handouts & your notes
- Reading:
  - Preece J. (2000) Online communities: Designing Usability, Supporting Sociability. John Wiley & Sons.
  - Additional reading
    - Suggested readings at the end of each unit
- Think-consolidate-critique
  - Coursework – group experience – communication –
- Ask
  - If /after all this/ something is still unclear ask for clarification

Exam style

- 50% course-work
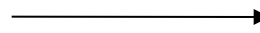- 50% oral: discuss course-work in the context of lectures
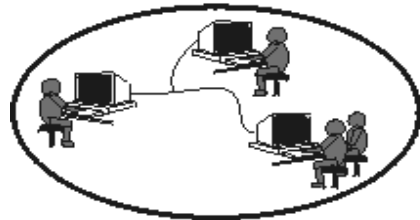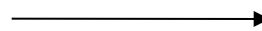
The Context
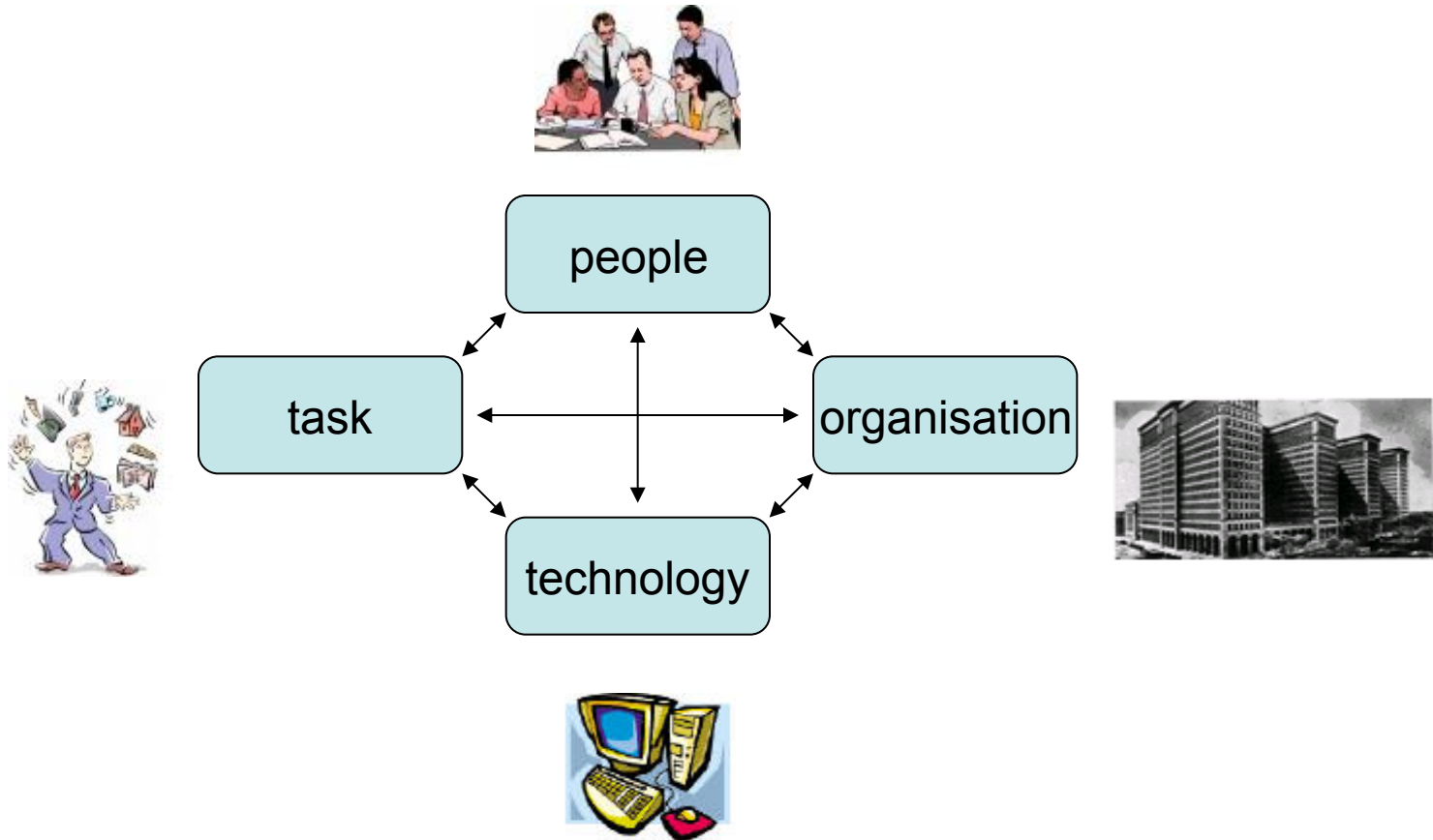
Definitions

Human-Computer Interaction (HCI)
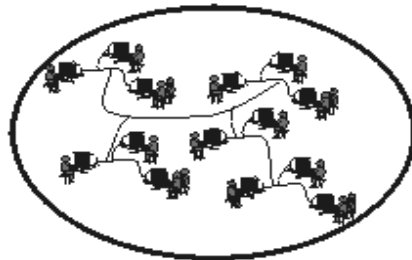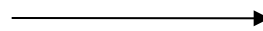
Computer Supported Collaborative Work (CSCW)

Virtual Community

1-1

Small group

Large societies

People

- Group → two or more individuals that influence each other
  - Interdependence-common identity and structure
  - Differences between personal and social identity
- Different types of groups
  - Group formation spaces

Social-identity theory

Tajfel & Turner, 1986

Personal Identity
Representation of the self in terms of the unique individual, different from relevant others

Social Identity
Representation of the self according to social categories to which people identify - women vs. men; students vs. lecturers; Manchester United supporters vs.
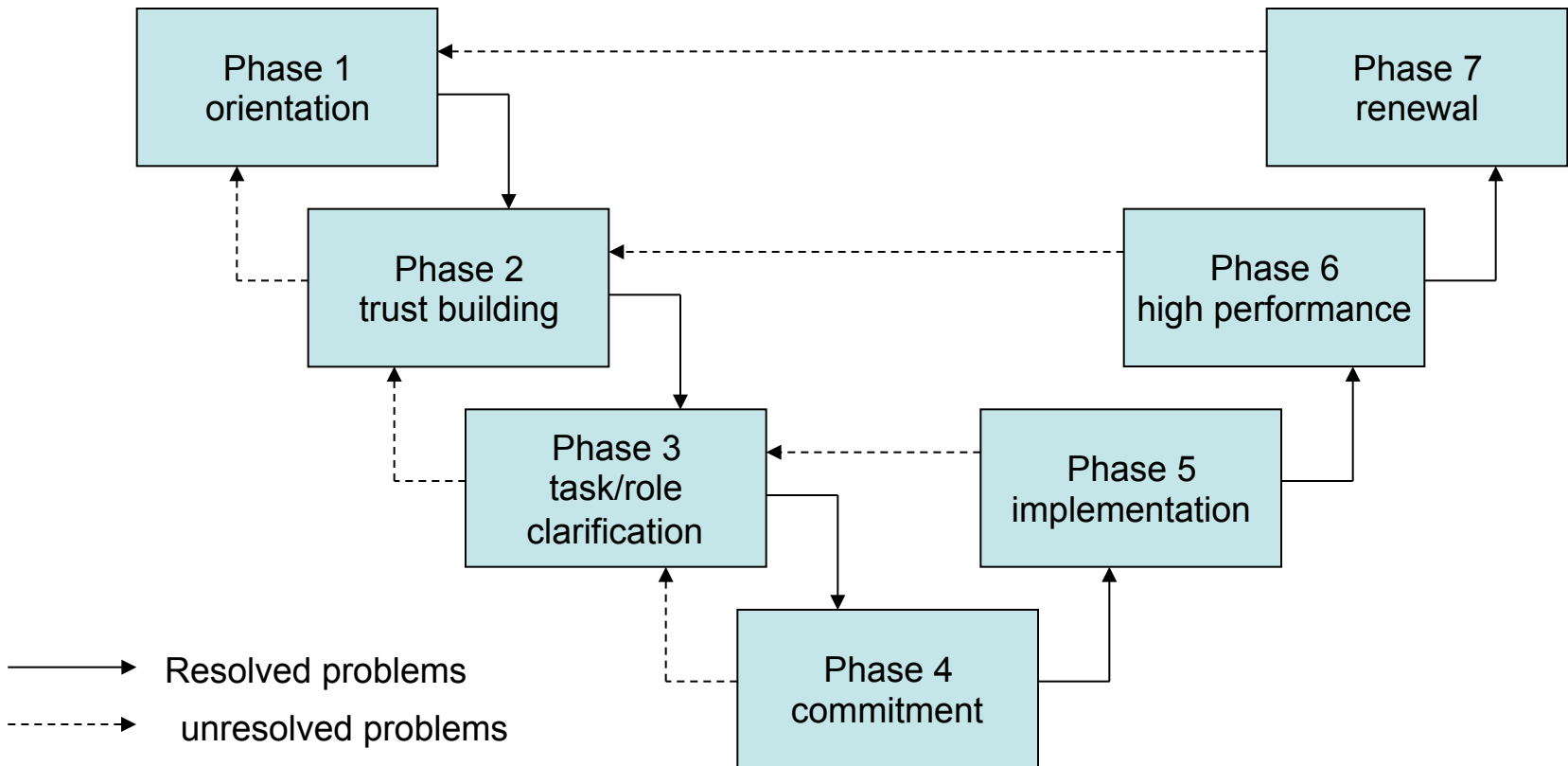
Group Formation Space

External

Circumstantial groups

Concocted groups

Emergent ←———————→ Planned

Self-organised groups

Founded groups

Internal
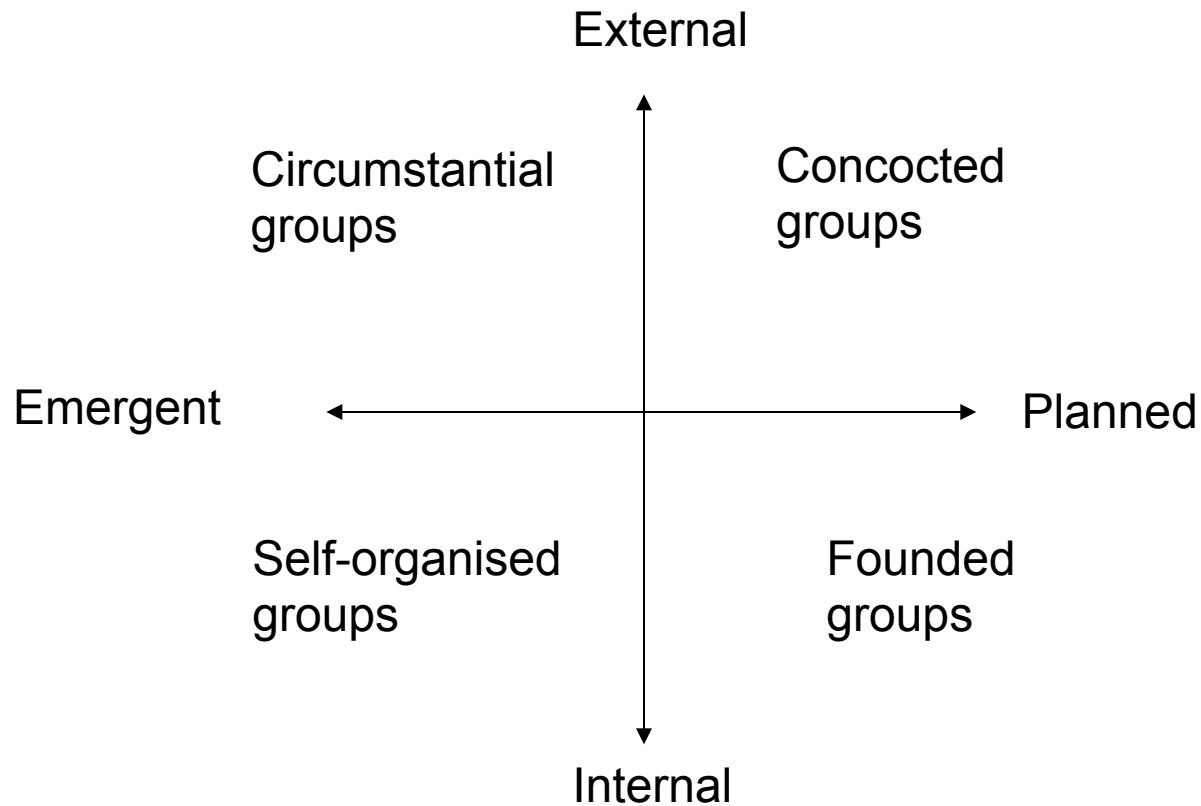
Group work

Social Loafing

- – tendency of individuals to reduce their work effort in a group
- Diffusion of responsibility
  - – the presence of others makes one less responsible for the events that occur in that situation
- De-individuation
  - – Loss of a sense of individuality and a consequent weakening of social norms and constraints
- Group-polarisation
  - – The group tend to enhance shared pre-existing views (more extreme attitudes, opinion)
- Conflicts
  - – Resources, misunderstandings, cultural difference

- Combine a number of areas of expertise, competencies, view-points
- Split a large task up into smaller parts
- Individual members perform different roles
- Presence of others is emotionally arousing
- Group may motivates to think harder and more creatively than we do by ourselves
- Satisfy socio-emotional needs

Team Life-cycle

Phase 1
orientation

Phase 7
renewal

Phase 2
trust building

Phase 6
high performance

Phase 3
task/role
clarification

Phase 5
implementation

Phase 4
commitment

Resolved problems

unresolved problems
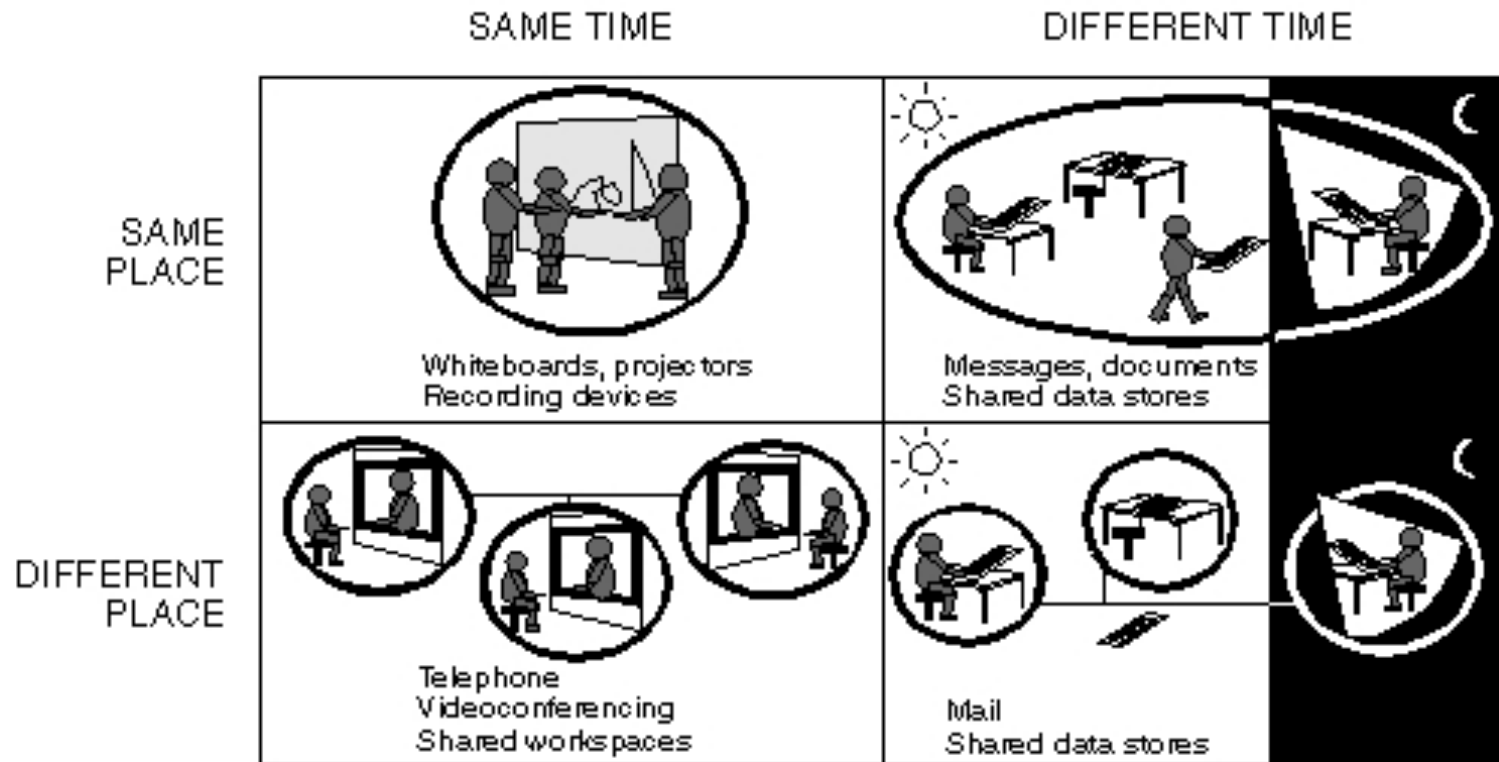
Groupware

- Provide communication between group members

- Collaboration
  - Coordinate and control shared objects
  - Provide organisation and common understanding of the work processes and other people
  - Support decision making and problem solving

Space-Time Matrix

TIME

Synchronous

- Advantages
  - Sense of immediacy
  - Real time
  - Newcomers can learn easily
  - Good for brainstorming (generating tasks)
- Disadvantages
  - Must be on-line at specific time
  - No time to reflect
  - Several conversations may appear at the same time and messages can get inter-twined
  - May require special download and configurations

Asynchronous

- Advantages
  - easy to use,
  - no special equipment needed,
  - time to reflect,
  - registration may create a feeling of community
  - useful in the consolidation of the results from brainstorming, ideas evaluation, intellective tasks, and judgement tasks
- Disadvantages
  - registration may discourage participation,
  - large number of posting may be overwhelming to users,
  - everything posted come to everybody,
  - context for responses have to be provided by including part of previous messages
  - Difficult to respond to a particular message in a digest

Media richness

- Daft and Lengel define media richness as a function of
  - the medium's capacity for immediate feedback,
  - the number of cues and channels available,
  - language variety;
  - the degree to which intent is focused on the recipient

Task taxonomy

– *Generating Tasks:* coming up with alternative solutions to a problem (as in brainstorming) or alternative options for action

– *Intellective Tasks:* solving problems with correct answers

– *Judgement Tasks:* deciding issues where there are no right answers

– *Negotiation Tasks:* resolving conflicts of interests or viewpoints
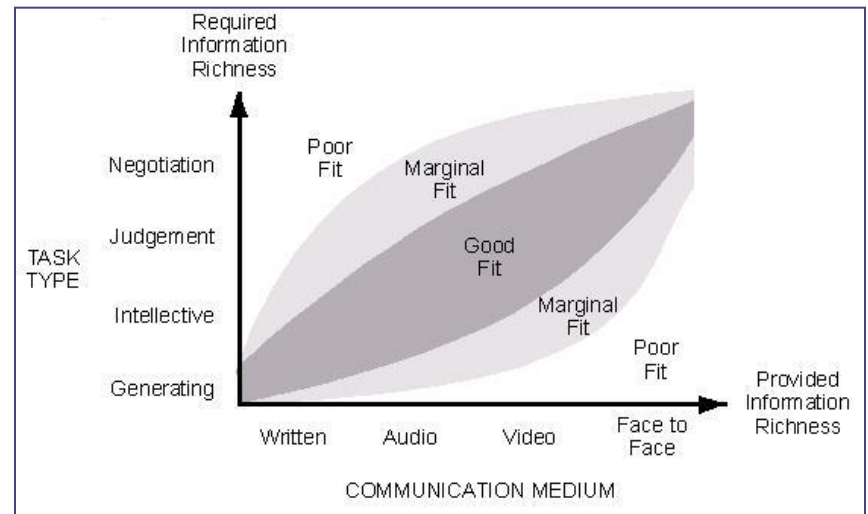
2 Functions of conversation

- Referential part of the message
  - The content of what we say

- Relational part of the message
  - The style of what we say
  - It reflects a perception of "Who I am", "Who you are" in "what context are we"

Conversational rules

- Farewell

- Turn taking

- Break-downs

- How do they translate in CMC?

Analysis of different media

- Telepresence
- Conference System
- Skype
- Second Life

The 'Vicious circle'

Personal Motivation
Cost
Design for the individual
Prisoner dilemma

Benefit

Adoption by individuals

Achievement of critical mass
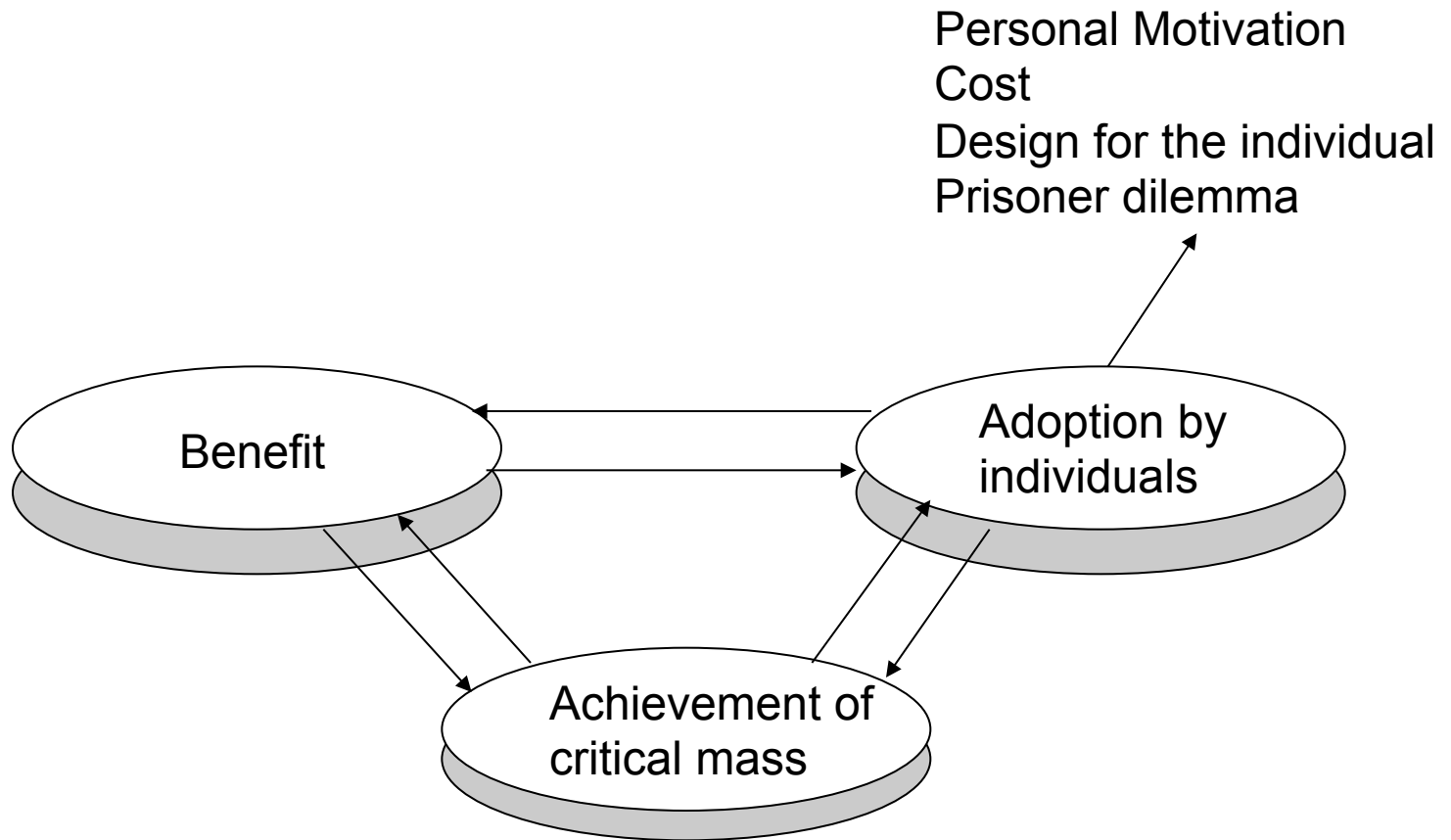
Design principles

- Maximise Personal Acceptance

- Minimise Requirements

- Minimise Constraints

- Increase external integration

Awareness

- ## What's going on?
  - ### Activity/Workspace awareness
    - Synchronous
    - Asynchronous
  - ### Informal awareness
    - Who is around and what are they doing?
  - ### Group-structural awareness
    - Organisation/ Workflow etc.
  - ### Social awareness
    - giving group members information helpful for making sense of others' actions, such as background on team members belief and knowledge'

WYSIWIS

- ## What You See Is What I See:
  - ### Consistent presentation of shared information
    - #### Strict form
      - Scroll wars
      - Window wars
    - #### Relaxed forms
      - Separation of workspaces
      - Personalised layouts and views
      - Time divergence
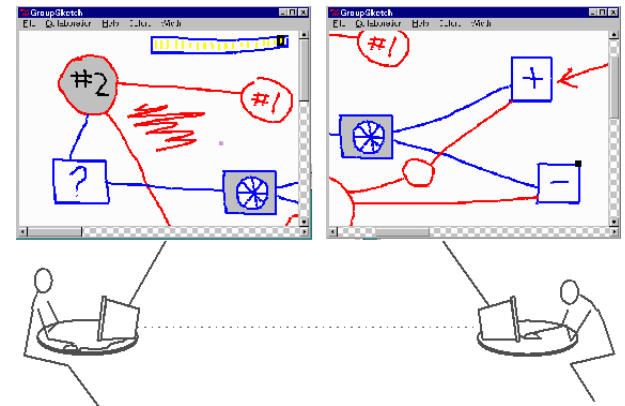
What to evaluate?
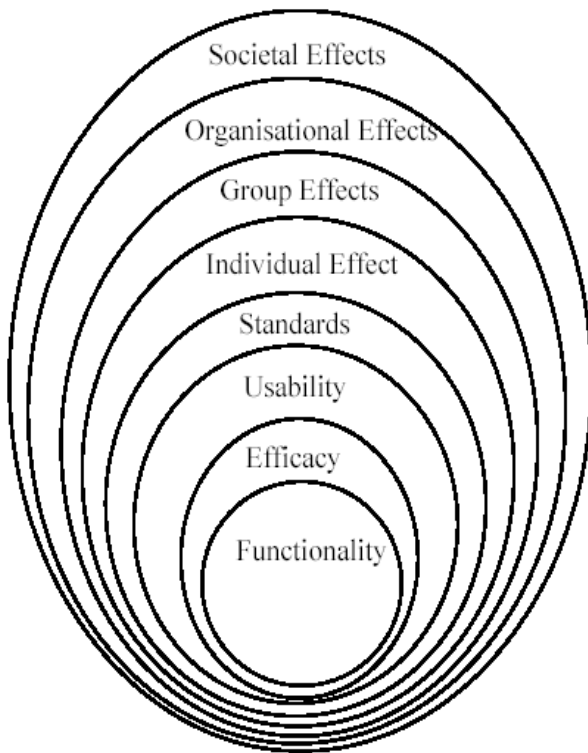
1. Does it work? *(functionality)*
2. Does it work well enough? *(efficacy)*
3. Is it workable with? *(usability)*
4. Does it follow the *standards* laid down by various bodies? (*standards*)
5. What does it do to those who work with it? *(individual effect)*
6. What does it do to their work? *(group effects)*
7. What does it do to those they work with and for? *(organisational effects)*
8. What does it do to the world beyond work? *(societal effects)*

When to evaluate?

- ## Concept evaluation
  - Analyse potential impact of new socio-technical system on the basis of scenarios
  - Before implementation -> requirements (four principles of groupware design)

- ## Prototype evaluation
  - Test if the applications function as they were planned and whether user-interfaces are usable
  - During implementation -> grounded design decisions

- ## Operational evaluation
  - Evaluate impact of technology on work setting: communication, social interaction, quality of work and organisational efficiency
  - After implementation -> adoption knowledge & requirements for new technology

How to evaluate?

- **Inspection methods***: evaluators 'inspect' an interface according to a set of criteria
  - Heuristics (HCI)
- **User observations***: evaluators observe users performing tasks within a semi-controlled setting
  - User testing (HCI)
  - Laboratory experiments (cognitive/social psychology)
- **Verbal methods**: evaluators ask users their opinion
  - Interviews, Questionnaires, Focus Groups and Customer Feedback (social psychology & marketing)
- **Field studies***: evaluators study people interacting within their world
  - Ethnography (HCI)
  - Conversation Analysis and Interaction Analysis (Ethnomethodology)
  - Breakdown Analysis (Breakdown Analysis)

On-line communities

- have a **purpose** are supported by **technology** and are guided by **policies**
  - – **Where does the community exist?; Why does it exist?; How does it exist?; What is its history?**
- **Technical + Social definition**
  - – On-line communities are social congregations of individuals which meets and Interact on the Internet.
  - – Members have a shared goal, interest, need or activity which provides the primary reasons for belonging to the community.
  - – Members engage in repeated active participation and there may be strong emotional ties between participants.
  - – Members have access to shared resources and there are policies for determining access to those resources.
  - – There is a shared context of social conventions, language and protocols.

Support evolving community

Design *Usability*
interaction dialogue
Navigation
Registration forms
Feedback
Representations of users
Message format
Archives

Plan *Sociability*
Policies for:
Membership
Codes of conduct
Security
Privacy
Copyright
Free speech
Moderators

Assess community needs
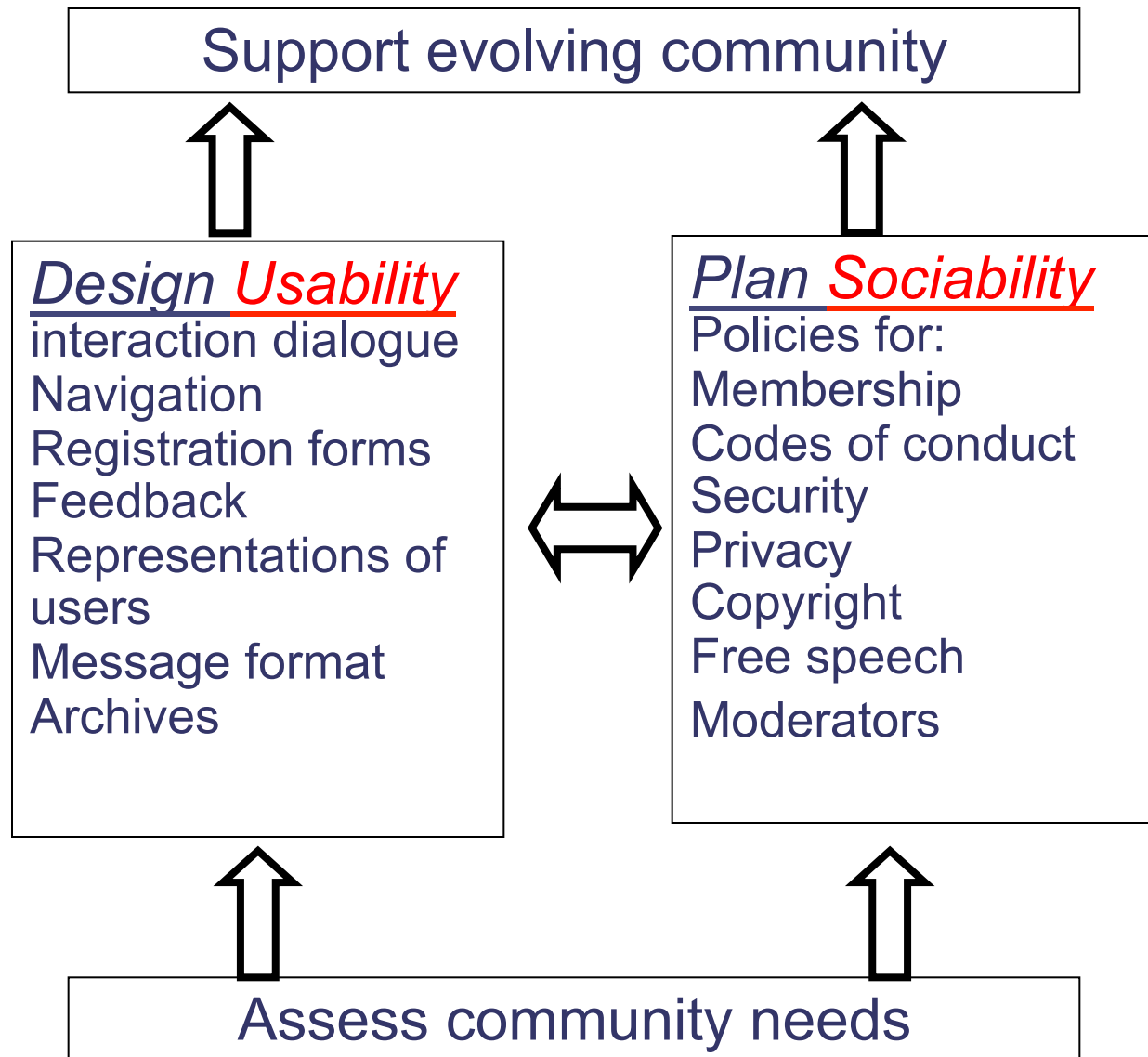
Community-centered development approach

1. Assessing community needs and analysing user tasks: requirements analysis
2. Selecting technology and planning sociability: community needs are mapped to technology. Sociability is planned at this level.
3. Designing implementing and testing prototypes: in this stage the overall conceptual design is planned. Communication tools are incorporated within web-pages in an iterative design.
4. Refining and tuning sociability and usability: usability and sociability testing
5. Welcoming and nurturing the community: this stage involves seeding the community.

Culture & the internet

- Global medium: but users and designers have different backgrounds, live in different environments, and belong to different cultures.
- Different styles of communication can lead to misunderstandings and problems
  - Standards for writing time, dates, addresses, and numbers can also cause confusion
  - Differences in symbols, colors, and metaphors.
  - Style of writing may be considered friendly in one culture and offensive in another
- Awareness of cultural values is fundamental for the success of e-business
- 2 models to understand cultural differences
  - Hofstede cultural values

Cultural differences

- Hofstede's cultural value dimensions
- Power distance
    - the extent to which the members of a society accept inequality in power
- Individualism vs. collectivism
    - Individualistic cultures consider individuals as core of the social structure and expect individuals to look after themselves. Collective cultures stress the importance of groups and expect members of a group to support each other
- Masculinity vs. femininity
    - Masculinity stands for a society where gender roles are clearly distinct (e.g. men are competitive and tough; women are caring and social orientated). Femininity stands for a society where social gender roles overlap
- Uncertainty avoidance
    - the extent to which a society feels uncomfortable with unknown situations, ambiguity and uncertainty
- Long vs. short term orientation
    - Long-term orientation encourages virtues oriented towards future rewards. Short-term orientation promotes virtues related to rewards at the present time.

Differences in Communication

- Low-context
  - Direct meaning in words

- High-context
  - Meaning distributed in several verbal and non-verbal cues

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