

# Mutual Learning

## Learning aim

- To be able to
  - develop the joint competence of users and IT personnel during a software project
- Background for evaluating a development project in Assignment 5
- Core literature
  - Chapter 14 Mutual learning during development
- Additional literature
  - Bano & Zowghi (2013) User Involvement in Software Development and System Success: A Systematic Literature Review
  - Kensing & Munk-Madsen (1993) PD: Structure in the Toolbox

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## Purpose

- Bringing expertise into development of information systems
  - Effects
    - + Attitude
    - + Use
    - (+) Productivity
- He and King (2008) The role of user participation in information systems development: Implications from a meta-analysis

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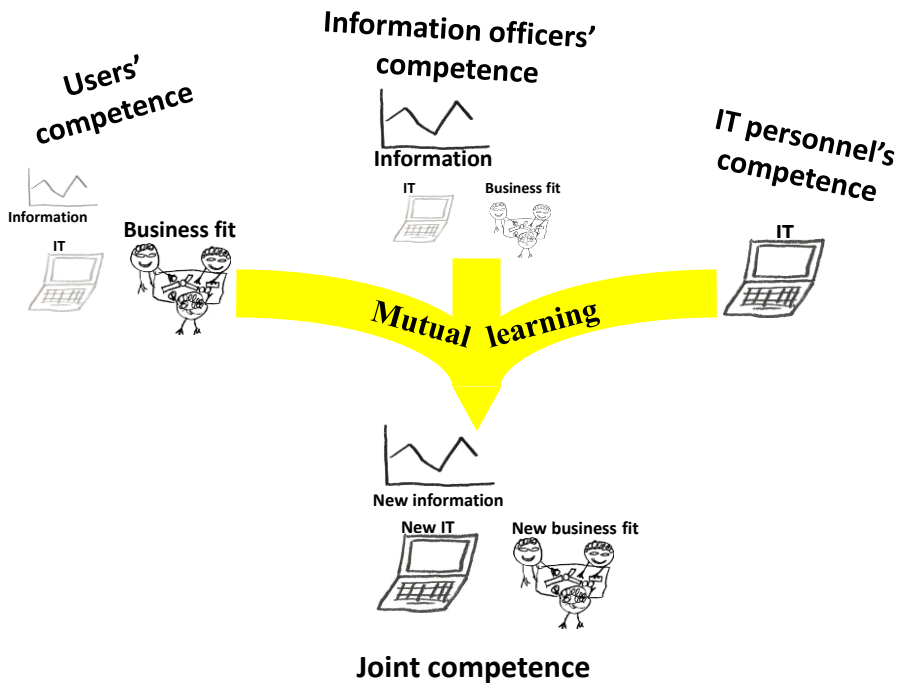
**To be developed**

	<b>Users' present work</b>	<b>New system</b>	<b>Technological options</b>
<b>Abstract knowledge</b>	Relevant structures on users' present work	Visions and design proposals	Overview of technological options
<b>Concrete experience</b>	Concrete experience with users' present work	Concrete experience with the new system	Concrete experience with technological options

**Known**

Kensing and Munk-Madsen 1993

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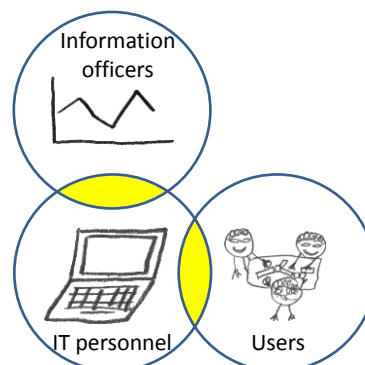
## Conditions for participation and mutual learning

- Selection
  - All relevant groups of users and information officers
  - Highly competent
- Involvement
  - Importance and personal relevance of a system
    - Also called **Engagement**
  - Strengthened through responsibility
  - Involvement requires time allocated for development
    - Without
      - Users become involved **after** implementation
      - Negative attitude

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## Three kinds of processes for mutual learning

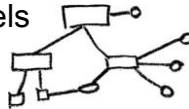
1. Users and information officers learning about IT
2. IT personnel learning about the information and business fit
3. Jointly create understanding and skills of the new
  - Information
  - IT
  - Business fit



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## 1. Users and information officers learning IT

- Technological options
  - Related systems
  - Infrastructure to be exploited
  - Future technologies
- Detached topics should be related to current applications
- Understanding and skills
  - Conceptual models
  - Hands-on



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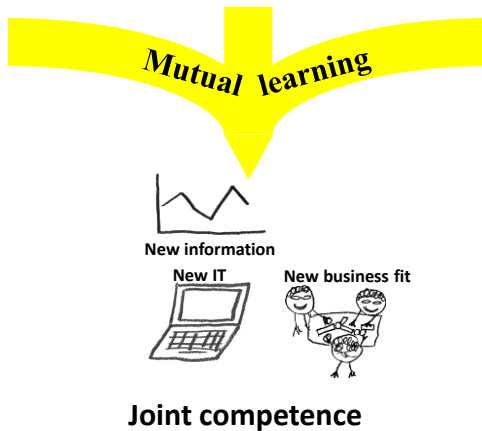
## 2. IT personnel learning about information and business fit

- Interview
  - At the work place
  - About what people are doing
  - About what information means
- Observe
  - What people do
  - Products
  - Meetings
- Compare
  - Observations and interview data
  - Investigate discrepancies



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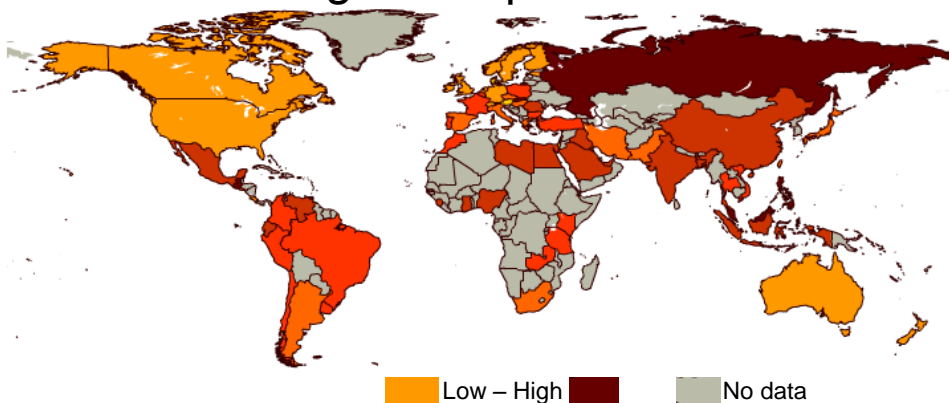
### 3. Joint creation of competence



- Visiting similar installations
  - Understanding and skills
- Future workshops
  - Understanding
- Prototypes
  - Skills

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### Stumbling block: power distance



- Extent to which subordinates submit to authority
- High power distance  
→ Superiors don't listen to subordinates

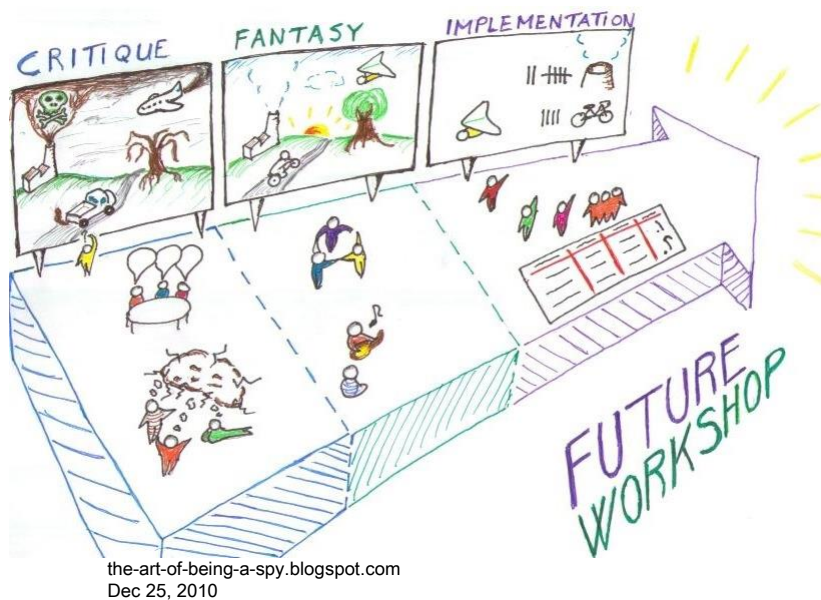
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## Visiting similar installations

- Listen to a presentation of their system
  - Including conceptual models
  - Creates some understanding
- Trying their system
  - Experience
  - Some skills



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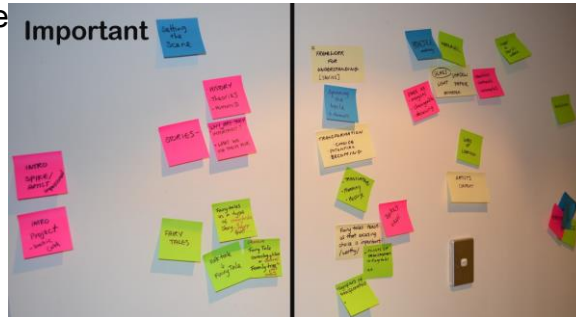


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# CRITIQUE

- Create understanding of current system
  - Brainstorming what is wrong
    - High power distance
      - Subordinates shut up
      - Rules stating that all write one critical point on a piece of paper
      - Divide users according to organisational level
  - Prioritize

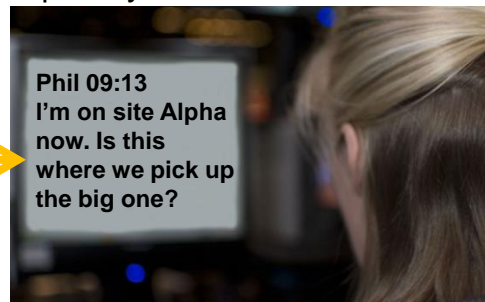
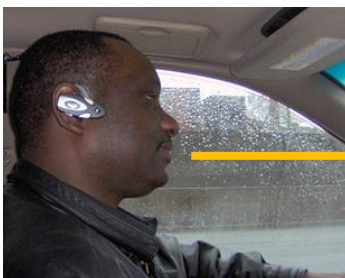


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# FANTASY

- Create understanding of utopian system



- IT
  - Don't consider technological limitations
- Information
  - All media
- Business fit
  - Reorganise

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# IMPLEMENTATION

- Create understanding of realistic system
- Plan for realisation

Unrealistic proposals



- Changes in
  - Information
  - Business
  - IT
- Create responsibilities
  - Information officers
  - Users
  - IT personnel

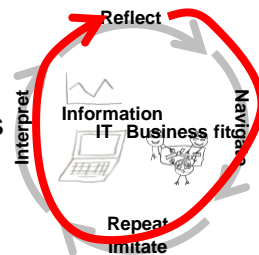
Proposals with minor gains



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## Prototypes

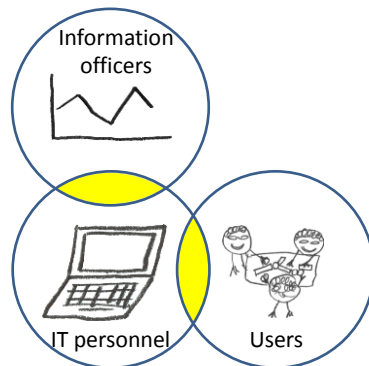
- Users and information officers evaluate
- Expect
  - New solution performs better than previous
  - Experimentation
  - New features added
  - Exploration
- Tested at the work place
- Responsibilities
  - Information officers
    - Bring complex information
  - Users
    - Bring typical and exceptional cases



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## Training and support



- Users and information officers
  - participated in development

having become

- Super-users
  - Participate in training

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## Collaboration system

Thousands of users in a non-profit organisation spread around the whole of Sweden. User representatives and IT personnel doing requirement analysis. A strong desire to work with practical tasks appeared.

The IT personnel organised testing of a

- whiteboard for transfer of writing and drawing to digital form
- system for communicating and sharing documents
- speech recognition tool

The testing was highly appreciated by the user representatives.

- Which kind of process for mutual learning did they carry out?

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## IT system for radio production

Project group: middle manager full time, two journalists, and one audio technician 1 day/week, two IT designers half time.

IT designers observed an editorial unit one day and interviewed four staff members.

The project group wrote a report on the alignment of business and IT strategies and identified the work activities to be included in the system.

Project group interviewed 1/3 of the staff. Thereafter planned and prioritized goals.

Project group visited another radio station which had recently switched technology, interviewing management and staff and observing their radio production process.

Summarized in a note about broadcasting quality, personnel cuts, blurring of job lines and training requirements. The project goals were revised and re-prioritized.

A few additional interviews were carried out to close gaps in the project group's knowledge about some of the editorial work.

Project group outlined typical production processes on large rolls of paper. The functionalities described were taken from their current systems and technology.

These designs opened for journalists to take over large parts of technicians' work.

Sketches focused on relations between the IT systems' functionality and user interfaces and the roles to be performed by the staff.

IT designers developed a series of prototypes in cooperation with the project group.

These were tested by a few editorial units.

Software development, implementation and training. 2 years, \$14 Mill.

- Which kind of process for mutual learning did they carry out?

## Social security system

The British social security services developed a new system for client management and payments. Programming was outsourced to an IT company in India. When receiving the code, it was noticed that the system catered for payments **from clients to** the social security services, but not the other way around.

- What went wrong?
- Which learning activities could have avoided the mistake?