

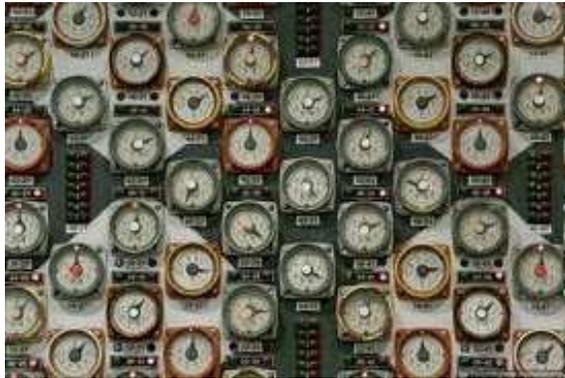
Cognitive Work Analysis: A Framework for Research in Collaborative Information Seeking

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COGNITIVE WORK ANALYSIS



http://hackedgadgets.com/wp-content/2/_russian_nuclear_power_plant_control_room.jpg



http://thumbs.dreamstime.com/thumbblarge_143/1177781473u2p46M.jpg

- ❑ Used in systems and human factors engineering to design complex systems in a dynamic workplace.
- ❑ Now applied to human information behavior using information technologies and redefining 'work' to include academic activities.

THE FOCUS in COGNITIVE WORK ANALYSIS

- ***Actors***

- ***Constraints***

- ***Why*** people do what they do, not only what they do.

- **Why?** – To inform the design of systems and services.

QUESTIONS FOR ACTORS

- ❑ Why do you do your work this way?
- ❑ How would you like to do it?
- ❑ What tools do you use?
- ❑ What are your priorities?
- ❑ How do you determine a successfully completed task?
- ❑ What do you like most/least about the work?
- ❑ What choices do you have in how you do your work?
- ❑ How would you like to receive information?
- ❑ How would you like to share information with others?
- ❑ Tell me what it's like to work here.



LEARNING ABOUT ACTORS AND THEIR CONSTRAINTS

- **Work environment** - The environment in which the organization operates, such as governments, professional or accrediting authorities.
- **Work domain** - The type of work done in the organization under study.
- **Task situation** - Specific tasks involved in information-related behaviors such as obtaining information from others for a departmental report.
 - **Decision analysis** – How are decisions made in the performance of information-related tasks.

LEARNING ABOUT ACTORS AND THEIR CONSTRAINTS

- ***Social organization*** - Management style, organizational culture, social conventions, and role allocation.
- ***Actors' resources*** – Technological and human tools used to meet information needs.
- ***Actors' values*** – How do actors show what they value. What is important to them as individuals and in their roles in the organization?

THE MEANS-END ANALYSIS

- ❑ *Goals & constraints* – What is your purpose? What barriers hinder attaining your goal?
- ❑ *Priorities & measurements* – How do you know you've done a good job?
- ❑ *Functions* – What needs to be done.
- ❑ *Processes* – How what needs to be done gets done.
- ❑ *Resources* – The tools used to get the job done.

CWA BENEFITS

- Flexibility – apply useful theories.
- Organizational focus – includes forces that pressure actors to behave in certain ways.
 - If people in your study seem to behave in irrational, inefficient, or ineffective ways – have you examined the organization and environment in which they work?
- Adding elements – Since CWA can inform non-technical systems and services, previous work routines and systems may be revised if they worked better than those in current use.

Indexing a National Film Archives – CWA and Collaborative Information Seeking

Problem: collaborative indexing (a task normally done alone), needed to include perspectives of diverse elements of the population, bring together various film interpretations, and respect the indexers' professional requirements.

CWA-added insight: Collaboration needed to be made visible. Collaborators needed a tool that would allow them to see the history of the discussion and provide a taxonomy of agreed upon terms since collaborators used different terms while analyzing the film for indexing.

Just building an 'indexing tool' would not capture the constraints and goals of the indexers. The tool might be ignored or worked around; another implementation failure.

Albrechtsen, H., Pejtersen, A.M. and Cleal, B. 2002. Empirical work analysis of collaborative film indexing. In H. Bruce *et al.* Eds., *Emerging frameworks and methods: Proceedings of the Fourth International Conference on Conceptions of Library and Information Science*. Greenwood Village, CO: Libraries Unlimited, 85-108.

LIMITATIONS

1. Small sample size, a lot of information
 1. CWA researcher often works alone or in small groups, there's a lot of data to wrangle.
 2. Some disciplines find small sample size problematic
 3. In designing systems for specific workplaces and tasks, rather than a one-size-fits-all system, sample size shouldn't be a problem.

2. The researcher must become familiar with literatures outside of his/her field and be comfortable with multidisciplinary work.
 1. LIS or computer science theories alone are generally insufficient to explain all of the observations uncovered during the study.

- ▣ Expensive and time consuming for researcher to return to evaluate and tweak design.
 1. Organizations take the easy way and use the initial design until problems erupt again.

CWA and Collaborative Information Seeking

- CWA provides:
 - Information about constraints on collaborative information seeking
 - Holistic view of information behaviors
 - More information about work-related information behaviors than surveys or observations alone, providing rich data to inform design.

