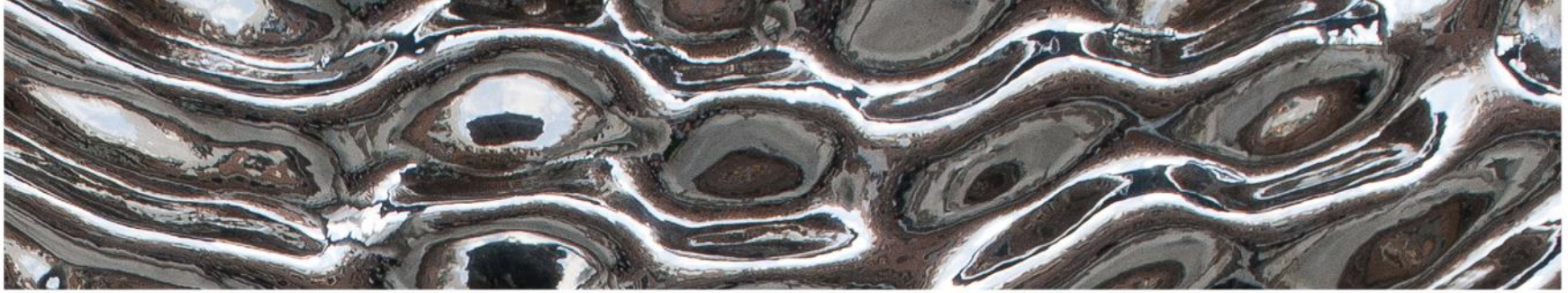


UiO : Institutt for informatikk
Det matematisk-naturvitenskapelige fakultet

Margunn Aanestad

Information Systems as a research field

IN5210 – Information Systems

27.8.2018

Agenda for today

- Overview: IS as a research field
  - Historical emergence
  - Key concerns of IS
  - The Scandinavian tradition / IS at IFI
  - A look at IS today
  - Key people and works

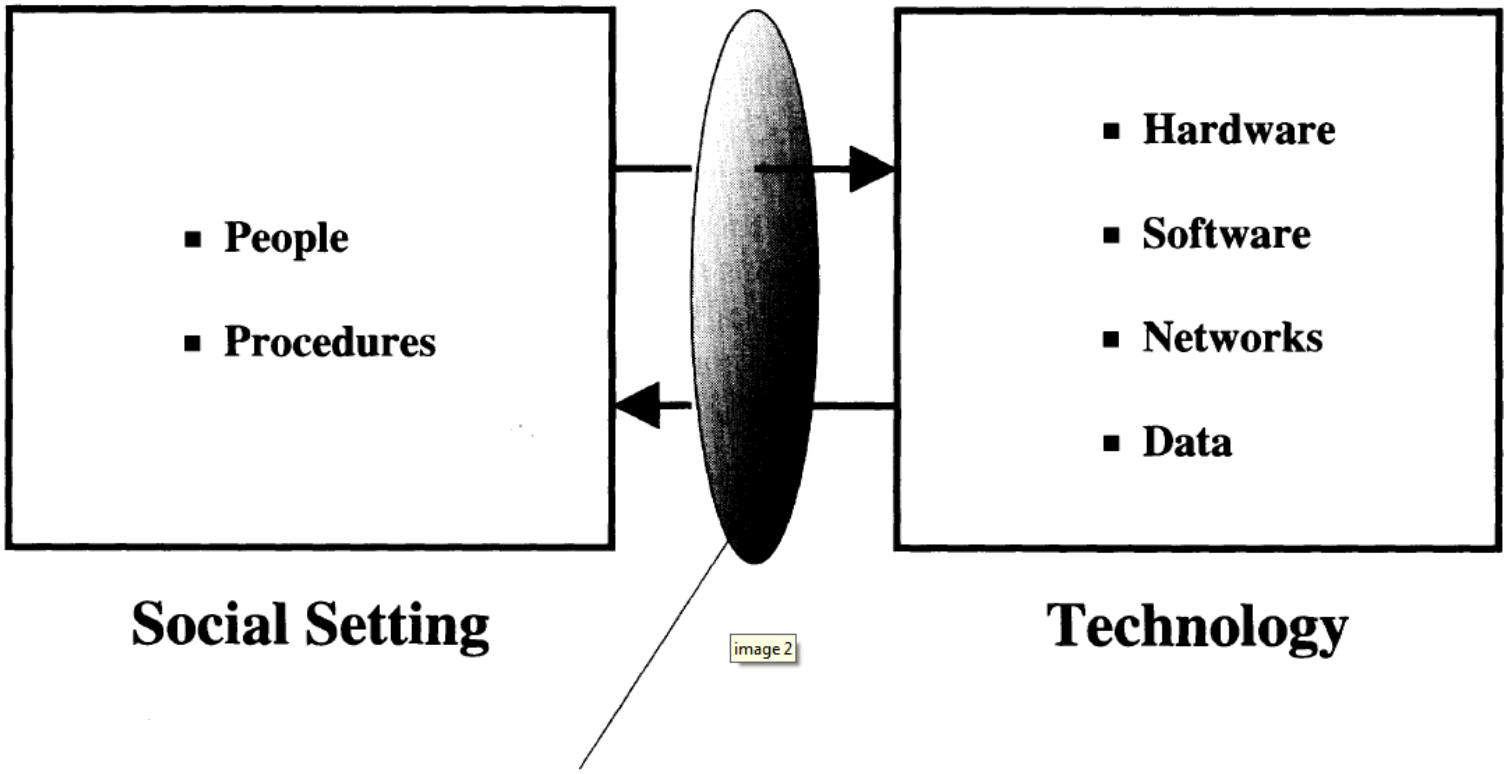
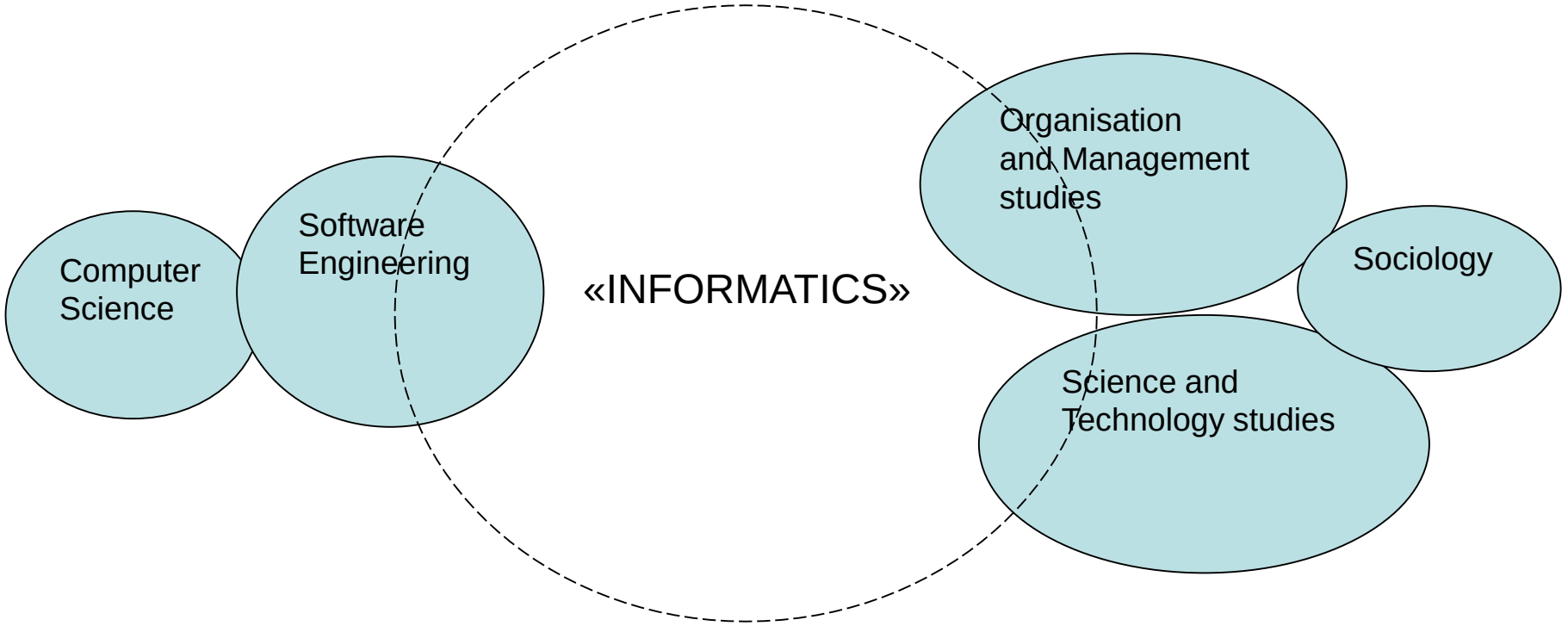
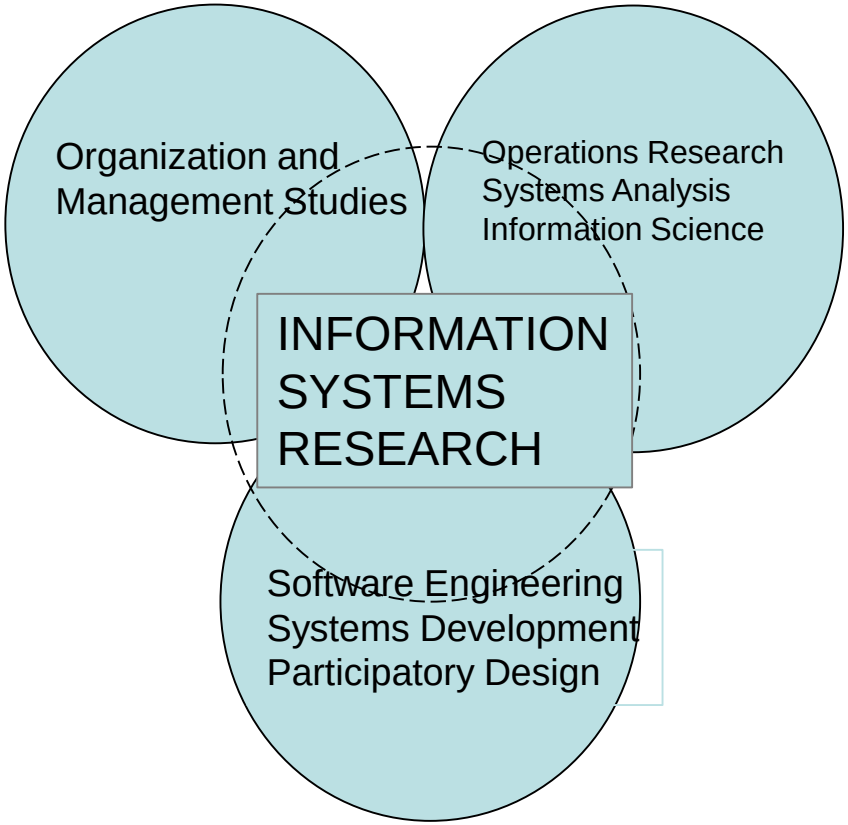


Figure 1. A Way of Conceptualizing Information Systems

Technical, socio-technical, and social research



Bo Dahlbom: «The New Informatics», SJIS 8(2)
http://iris.cs.aau.dk/tl_files/volumes/volume08/no2/02_dahlbom_p29-48.pdf



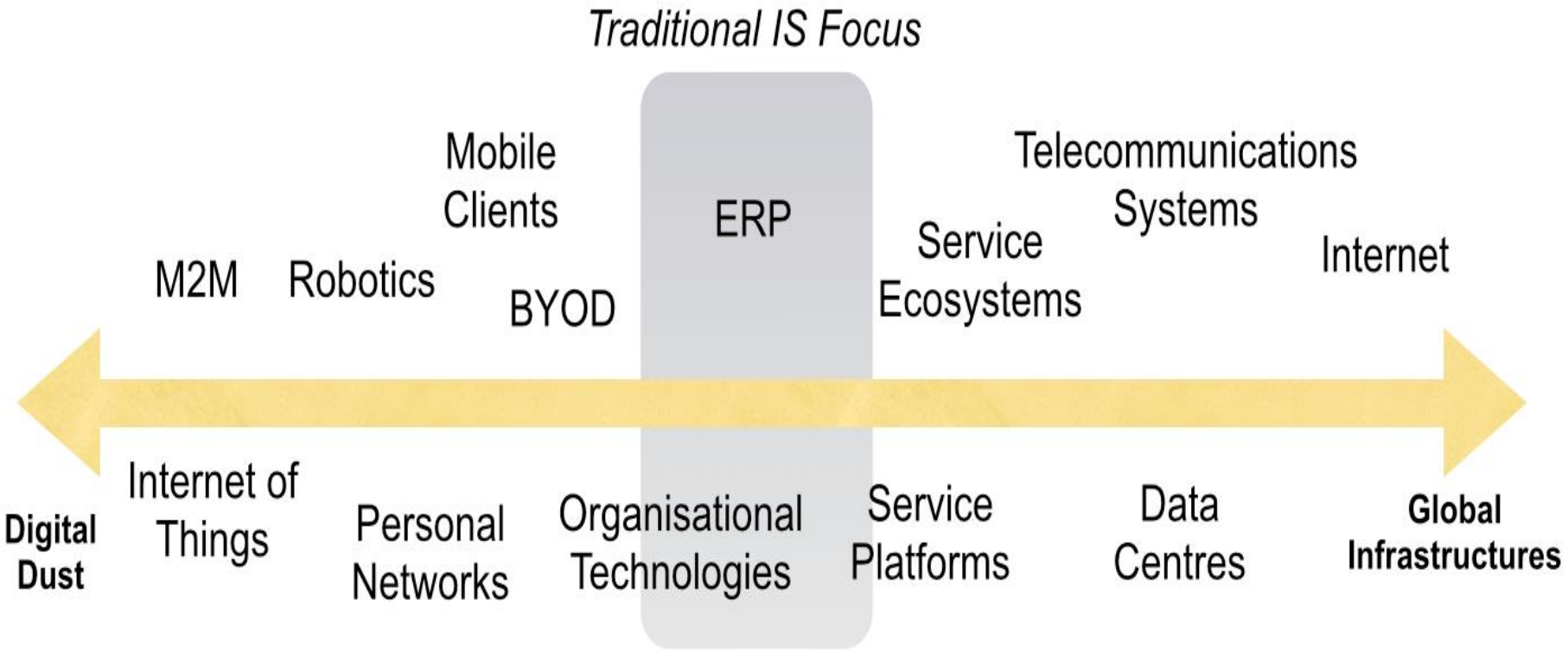
Object area: Information, people and technology

Methodological pluralism – positivist, interpretivist, critical, design science

Various «academic homes»: business schools, social science departments etc.

IS as an academic field: history and location

- Internationally: built from Operations Research, Systems Analysis, etc. and from Organization Studies
  - Initially: Management Information Systems → Information Systems
  - Methodological pluralism – positivist, interpretivist, critical, design science
- Scandinavian IS: OR/SA, but also the socio-technical tradition + «trade union projects» → participatory systems development.
  - Work place ethnographies, design-oriented research
  - (overlap with CSCW, PD, STS, etc…)



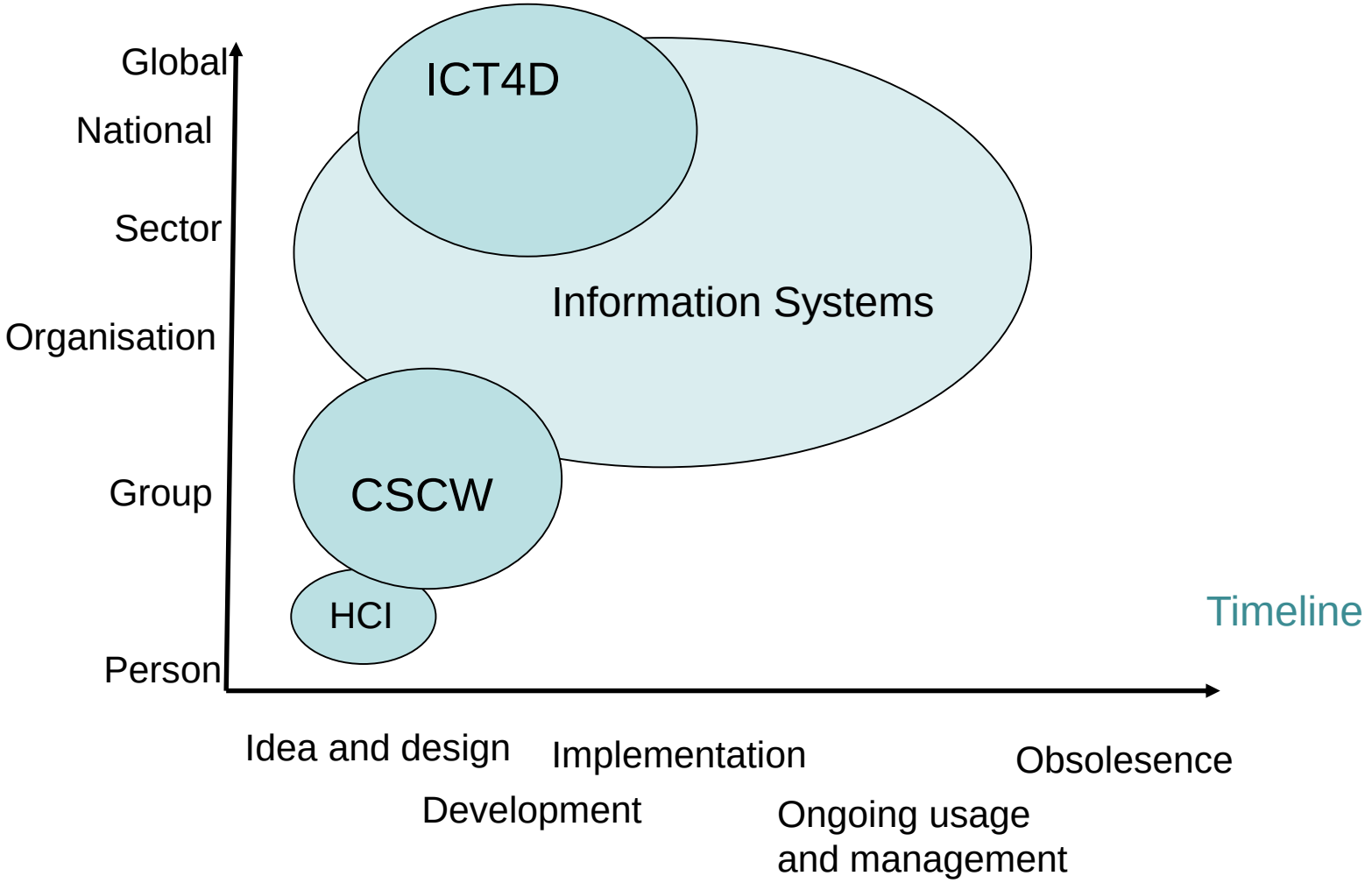
Sørensen, C. «The Curse of the Smart Machine…» SJIS 28(2)
http://iris.cs.aau.dk/tl_files/volumes/Volume%2028/3%2028-2-Sorensen(IRISweb).pdf

IS as an academic field: orientation

- Information systems in organizations (real life, not experimental/lab)
  - Temporal scope:
    - Design and development,
    - Implementation (adoption, assimilation, benefits realization)
    - Ongoing management, strategy, governance, innovation etc.
  - Empirical focus:
    - Individual – TAM models, «technological frames»
    - Team/group – sensemaking, learning, coordination – practice studies
    - Organization – implementation studies (process, learning, politics,..)
    - Sector/domain – Institutional change

- Central aims:
  - “The fundamental knowledge interest that underlies information system (IS) research is this: how can an IS […] be effectively deployed in the human enterprise?” (Grover and Lyytinen, 2015)

Scale (unit of analysis)



Historical context (post WWII technology development)

- Computers as «computing machines»
- Computerised Numerical Control (CNC)
- Computerized information systems – gather, present and analyse information for managers (MIS)
- Automation of office work
- Personal Computers, client-server architectures
- Internet & connectivity …
- Mobile, smart, IoT, «lightweight»
- «Born digital» organizations…

Expansion of IS field

- Initial focus: how to design IS,
  - how to organize the design and development work?
- Implementation studies
  - Resistance, inertia, change management
- Organizational transformation processes
  - Politics, learning, process redesign
- Users' actions, end-user development

Individual:
TAM models

Groups:
Practice-based studies

Organizations and institutions

- More systems in use over a longer time frame:
  - Maintenance of systems over time (life cycle)
  - Multiple systems – integration, redesign
- Networked systems
  - Interorganizational systems, information infrastructures, digital infrastructures

Theorizing the interplay

- Socio-technical systems theory
- Structuration theory
- Institutional theory
- Actor network theory
- Sociomateriality

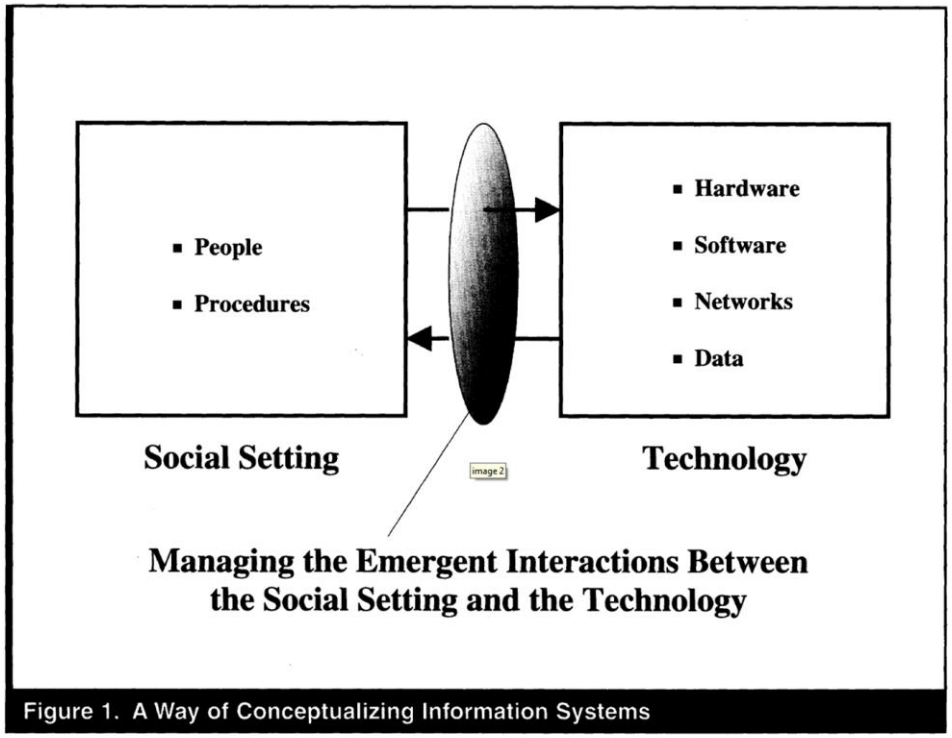
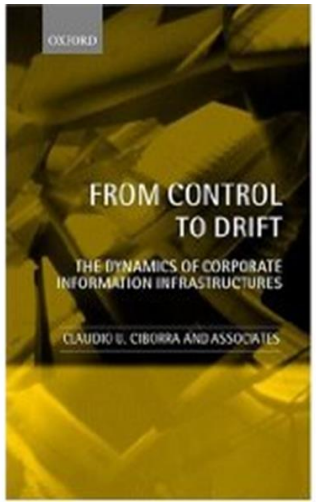
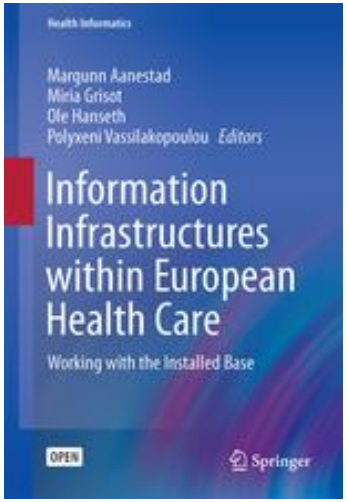


Figure 1. A Way of Conceptualizing Information Systems

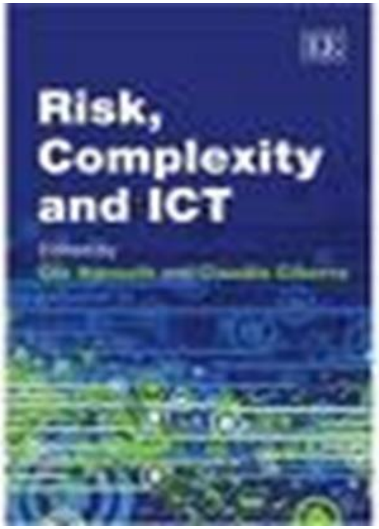
Scandinavian IS research

- Articles;
  - Bansler: three approaches
  - Iivari and Lyytinen: broader perspective
- «The Collective Action» approach at IFI
  - Kristen Nygaard's collaboration with trade unions (NJMF),
  - others
- Today at IFI:
  - Participatory Design, user-oriented IS, work/use ethnography, CSCW
  - Studies of Information Infrastructures
  - Globally distributed action research

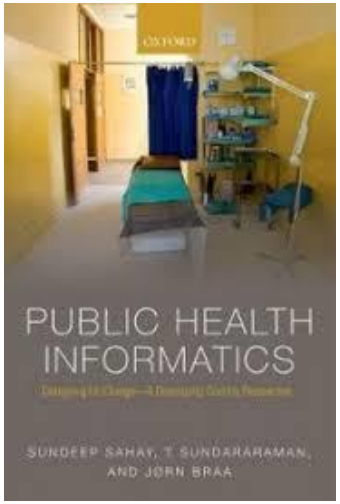

OXFORD
FROM CONTROL TO DRIFT
THE DYNAMICS OF CORPORATE INFORMATION INFRASTRUCTURES
CLAUDIO U. CIBORRA AND ASSOCIATES


Health Informatics
Margunn Aanestad
Mirla Grisot
Ole Hanseth
Polyxeni Vassilakopoulou Editors
Information Infrastructures within European Health Care
Working with the Installed Base
OPEN
Springer


Jørn Braa · Sundeep Sahay
INTEGRATED HEALTH INFORMATION ARCHITECTURE
Power to the Users
Design, Development and Use


Risk, Complexity and ICT


EDITED BY
THOMAS HOHOLM
ANTONELLA LA ROCCA
MARGUNN AANESTAD
CONTROVERSIES IN HEALTHCARE INNOVATION
Service, Technology and Organization


OXFORD
PUBLIC HEALTH INFORMATICS
SUNDEEP SAHAY, T SUNDARARAMAN, AND JØRN BRAA

http://ecis2019.eu/programme/research-tracks

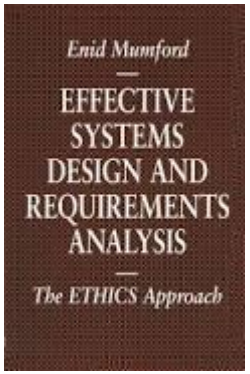
A few classic works/key persons in user-oriented, interpretive IS

- Enid Mumford
- Peter Checkland
- Rob Kling
- Shoshana Zuboff
- Geoff Walsham
- Claudio Ciborra

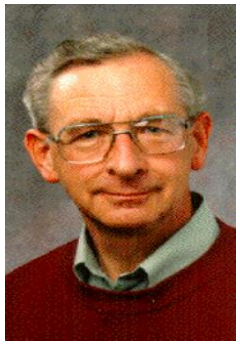
Enid Mumford

1924-2006

- Human factors, sociotechnical systems
- ETHICS (Effective Technical and Human Implementation of Computer-based Systems)



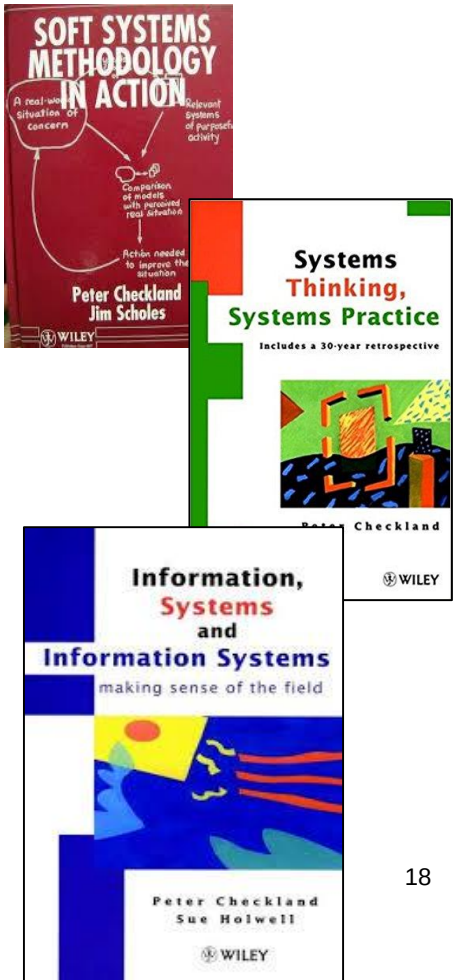
- https://web.archive.org/web/20150108063043/http://www.enid.u-net.com:80/C1book1.htm

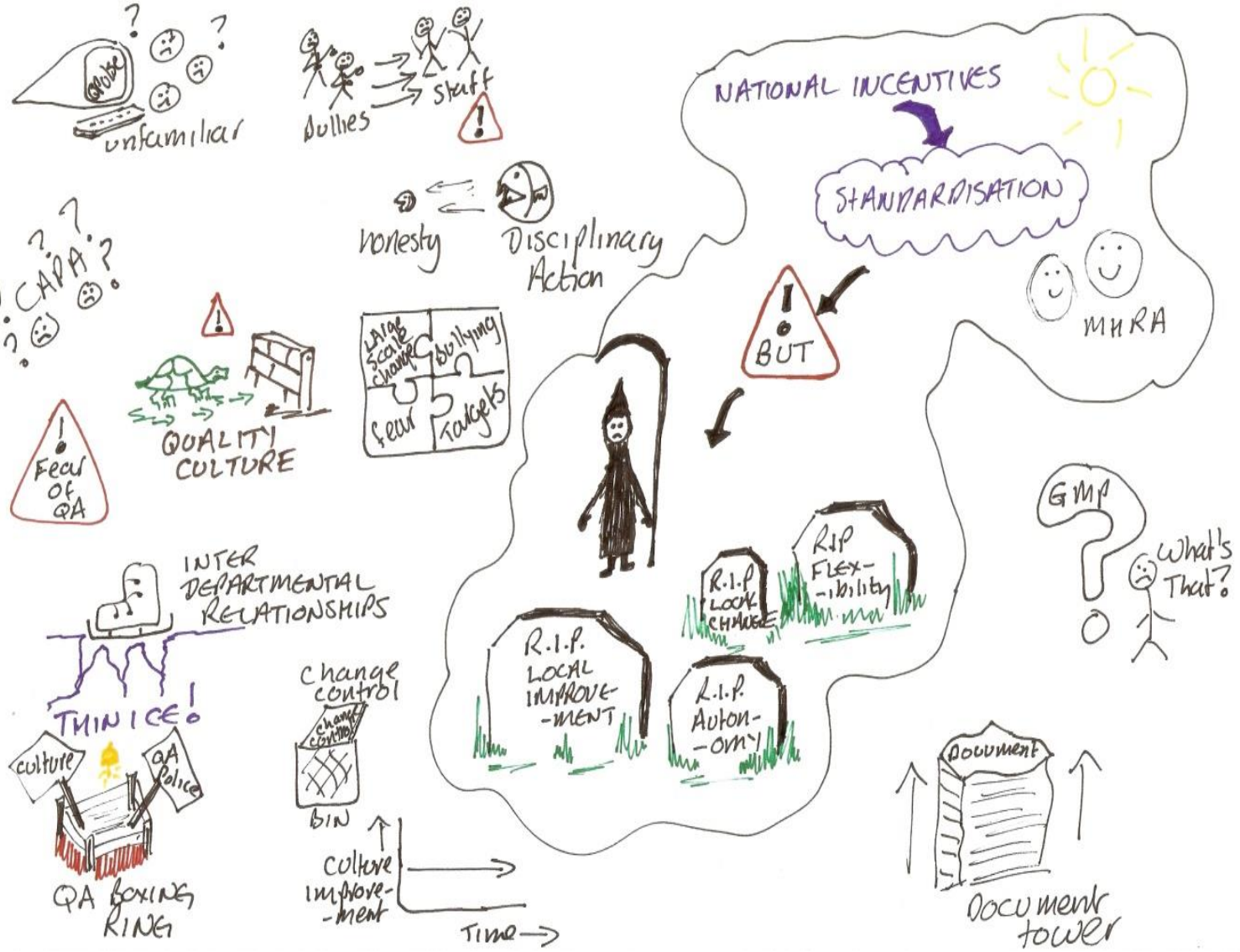


1930 -

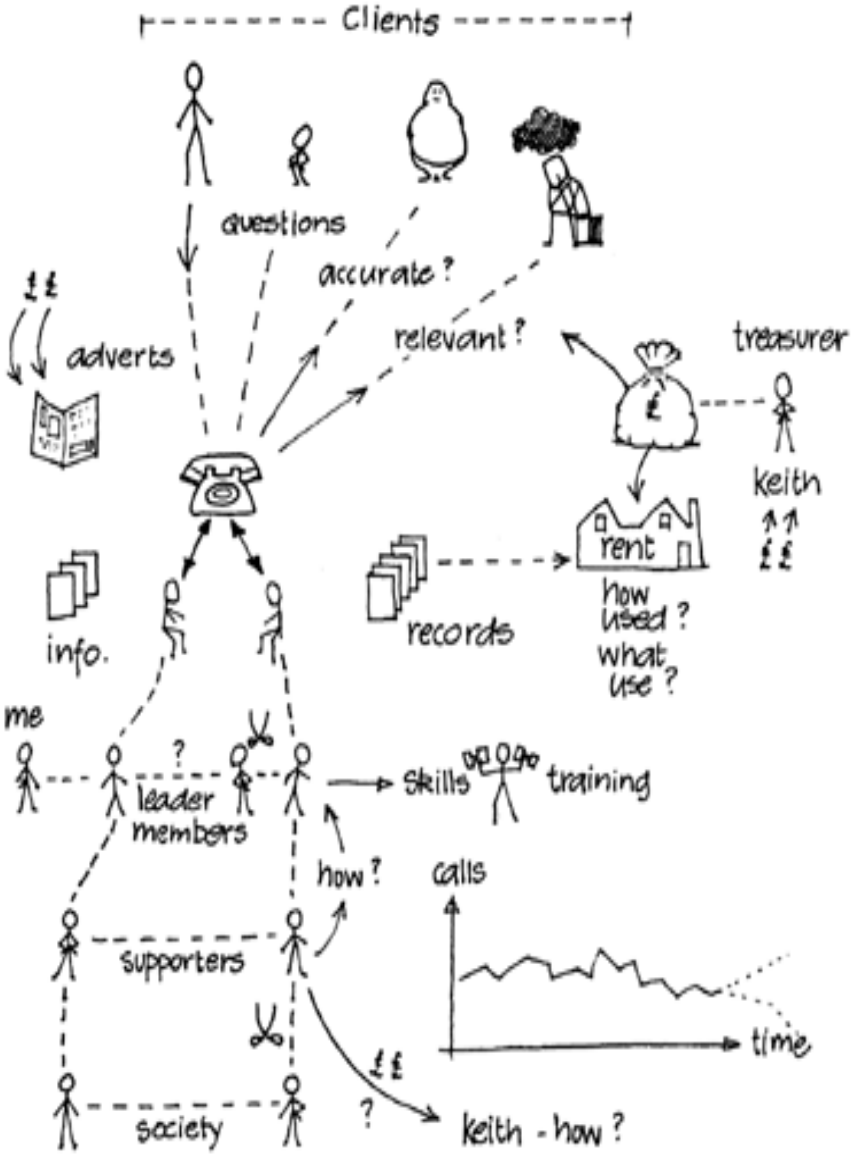
Peter Checkland: Soft Systems Methodology

- Peter Checkland: Systems thinking, Systems practice (1981)
- Checkland and Scholes: Soft Systems Methodology, Action research (1990)
- Checkland & Holwell: Information, systems, and Information systems (1998)
- «Hard» vs. «soft» systems thinking
  - Hard: structured approaches, systems engineering, assumes well defined problem, predominantly technical
  - Soft: assumes messy/ill-defined problem, consider also humans, values, politics
- Core concepts: Rich Pictures, Root Definitions, CATWOE (clients, actors, transformations, Weltanschauung, owner, environment), model of transformation, measure of performance (the three E's: efficacy, efficiency, effectiveness)





From: https://systemspractitioner.com/tools-and-techniques/



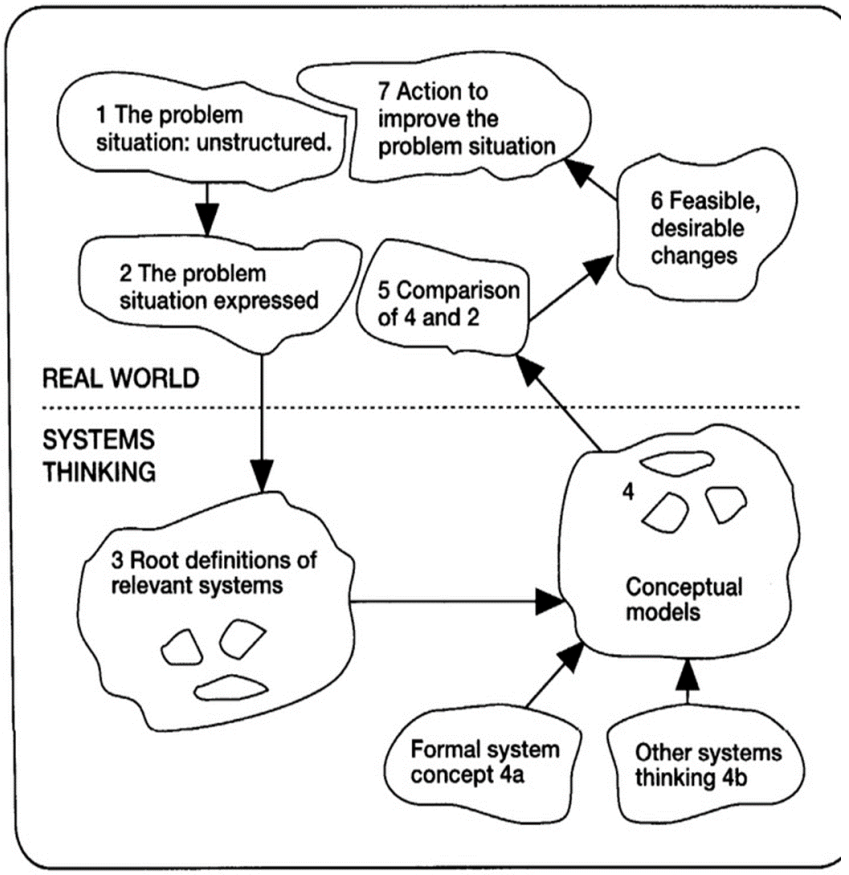


Figure 2.1 Checkland's Soft Systems Methodology: a Summary

From: http://systems.open.ac.uk/materials/T552/pages/rich/richAppendix.html

1944-2003

Rob Kling: Social Informatics

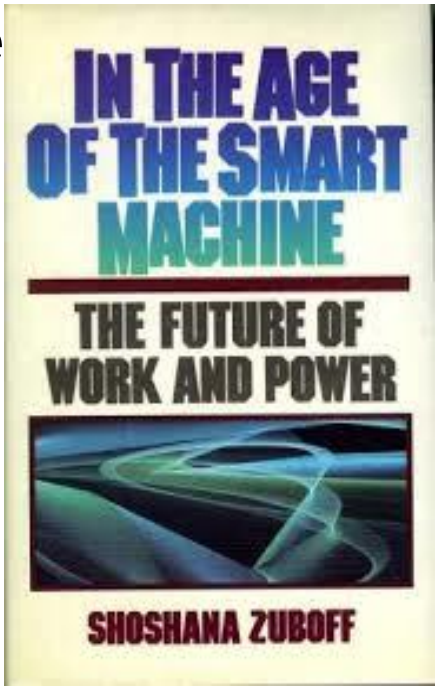
- Interested in processes of computerization in organizations and social life
- Attention to interactions and webs of relationships
  - Sociotechnical interaction networks
  - Web models/web of computing
- Five «big ideas»:
  - "multiple points of view", "social choices", "the production lattice" (and its corollary, the problematization of the user), "socio-technical interaction networks", and "institutional truth regimes"
  - http://www.emeraldinsight.com/doi/pdfplus/10.1108/09593840510584621
- *Kling, R. and Scacchi, W. (1982), "The web of computing: computing technology as social organization", Advances in Computers, Vol. 21, Academic Press, New York, NY, pp. 1-85.*
- *https://www.indiana.edu/~rkcsi/wordpress/home/sample-page/rob-kling/*

Shoshana Zuboff

1951 -

- Shoshana Zuboff (1988): «In the age of the smart machine: The future of work and power”
  - Ethnographic studies from 8 contexts.
  - Automated factories and offices
- Technology has a substantially transformative capacity.
- Core concepts: «Textualization», «automate and informate», «information panopticon»

- See also:
  - Burton-Jones, A. (2014) "What have we learned from the Smart Machine?." Information and Organization 24.2,71-105.



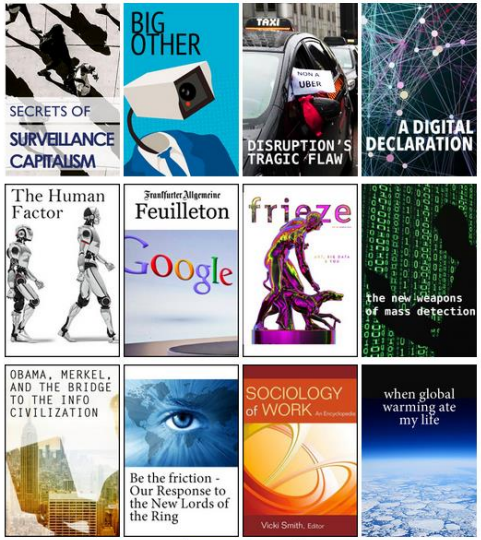
SHOSHANA ZUBOFF

Welcome
About
Books
Recent Work
Contact

http://shoshanazuboff.com/

Recent work

Articles



Interviews

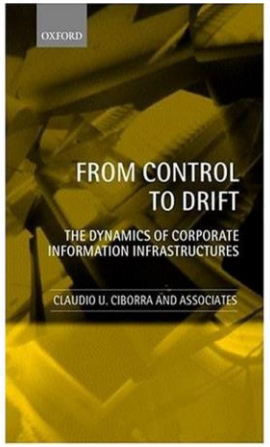
Geoff Walsham: Interpretive research

1946-

- Important books:
  - *Interpreting Information Systems in Organizations* (1993)
    - process focus on studying organizational change (change content, social process, social context).
  - *Making a World of Difference: IT in a Global Context* (2001)
- Articles:
  - Walsham, Geoff. "Interpretive case studies in IS research: nature and method." European Journal of information systems 4.2 (1995): 74.
  - Walsham, Geoff. "Doing interpretive research." European journal of information systems 15.3 (2006): 320-330.

Claudio Ciborra

1951-2005



- Technology-organization, change, infrastructures…
  - phenomenology
- Books:
  - «From Control to Drift» - studies of information infrastructures in ”global companies”; Hoffmann-La Roche, Astra, IBM, SKF, Hydro, Statoil 2000
  - “The labyrinths of information: Challenging the wisdom of systems: Challenging the wisdom of systems”, 2002.
  - «Risk, Complexity and ICT»: integration – solution or problem? 2007