Working in Knowledge Society

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Topics

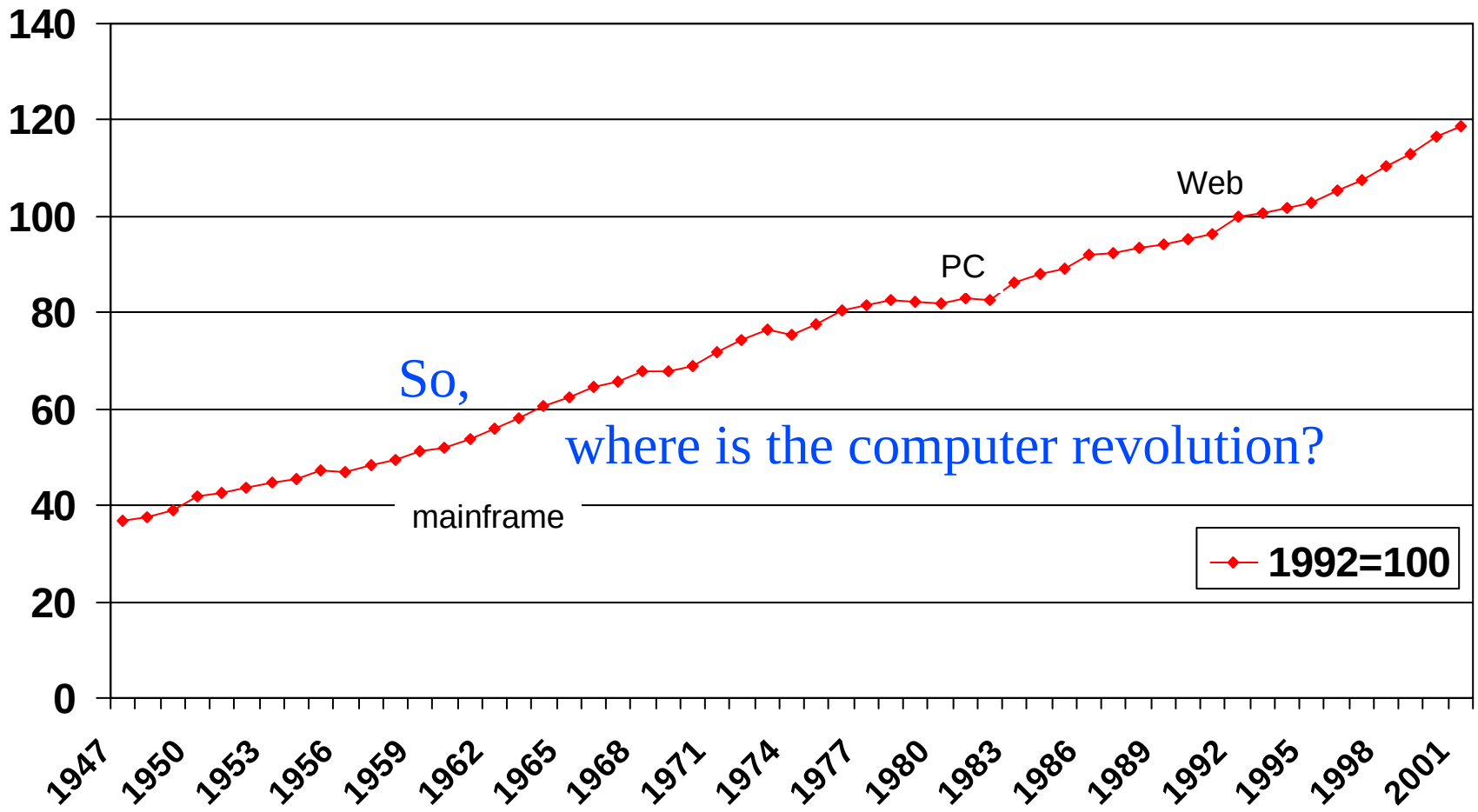
- Transformation of work
- Tools and practices of knowledge work

The Mystery of Organizational Investment

- Since the 1960s, organizations have invested huge and continuously increasing sums in information technology
- Despite the massive investment in ICT, economists were unable to detect any positive impact

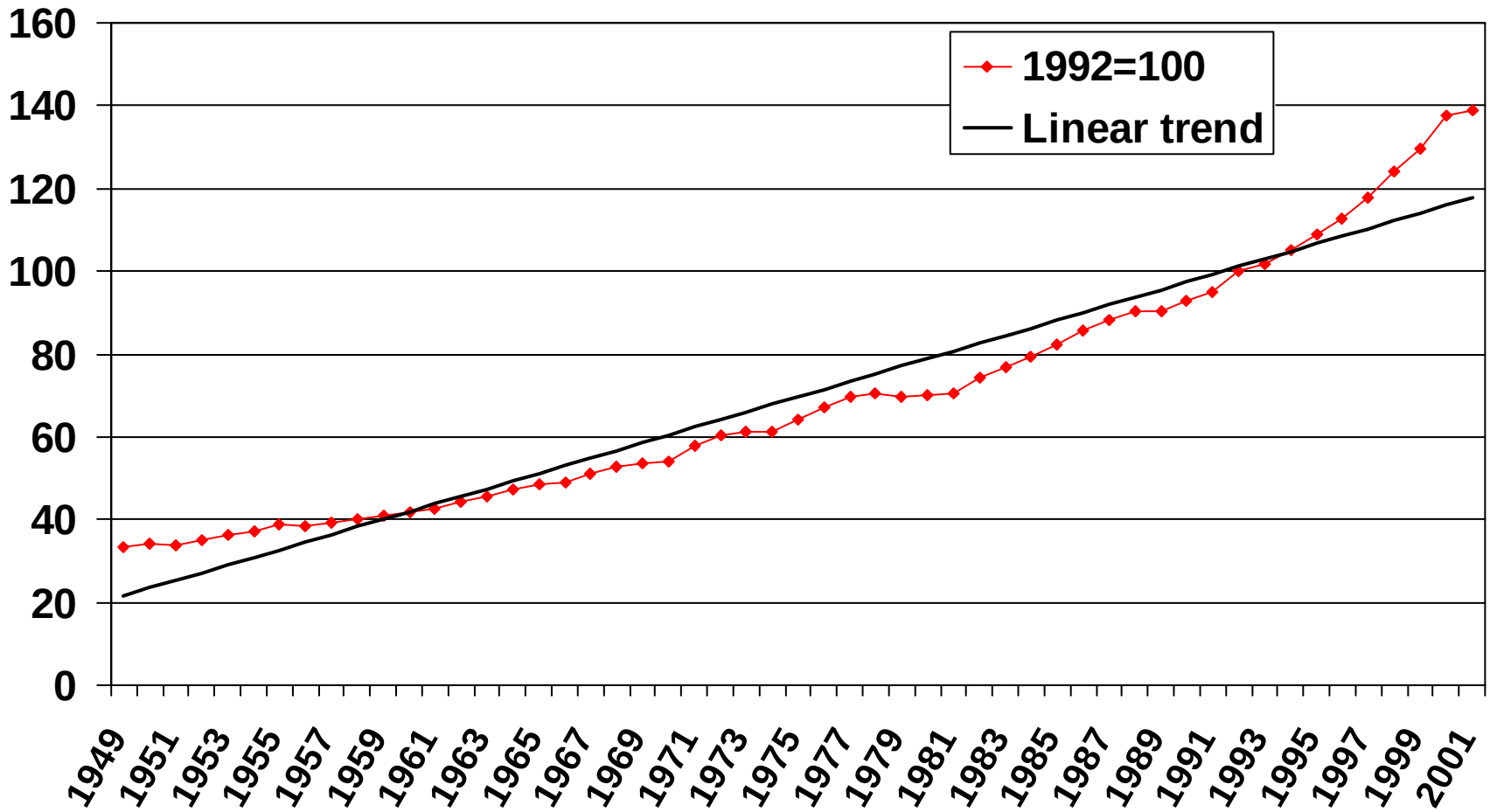
  - Solow, 1987: ”You can see the computer age everywhere except in the productivity statistics”

Labor productivity in non-farm business



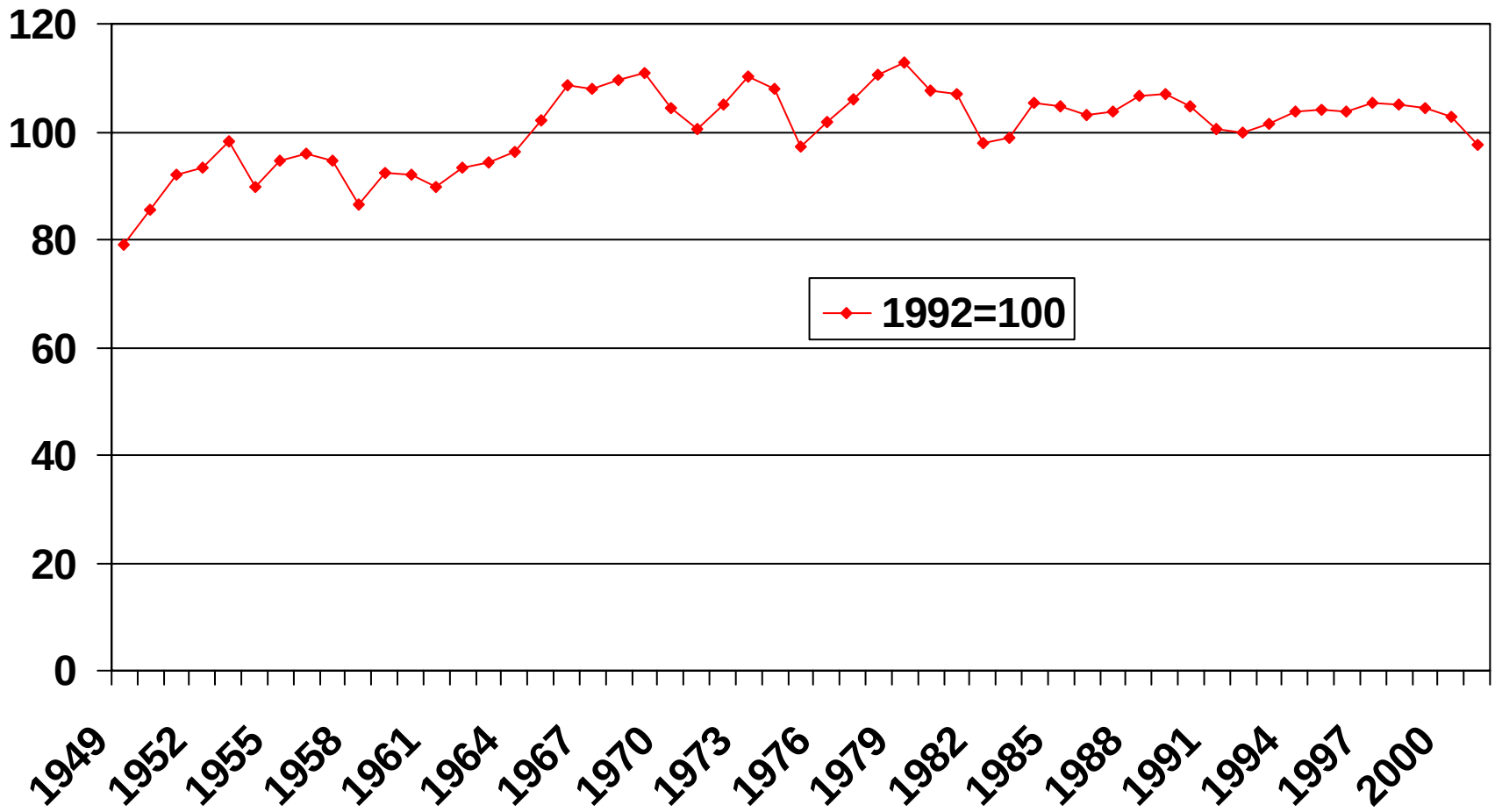
source: U.S. Bureau of Labor Statistics

Labor productivity in manufacturing

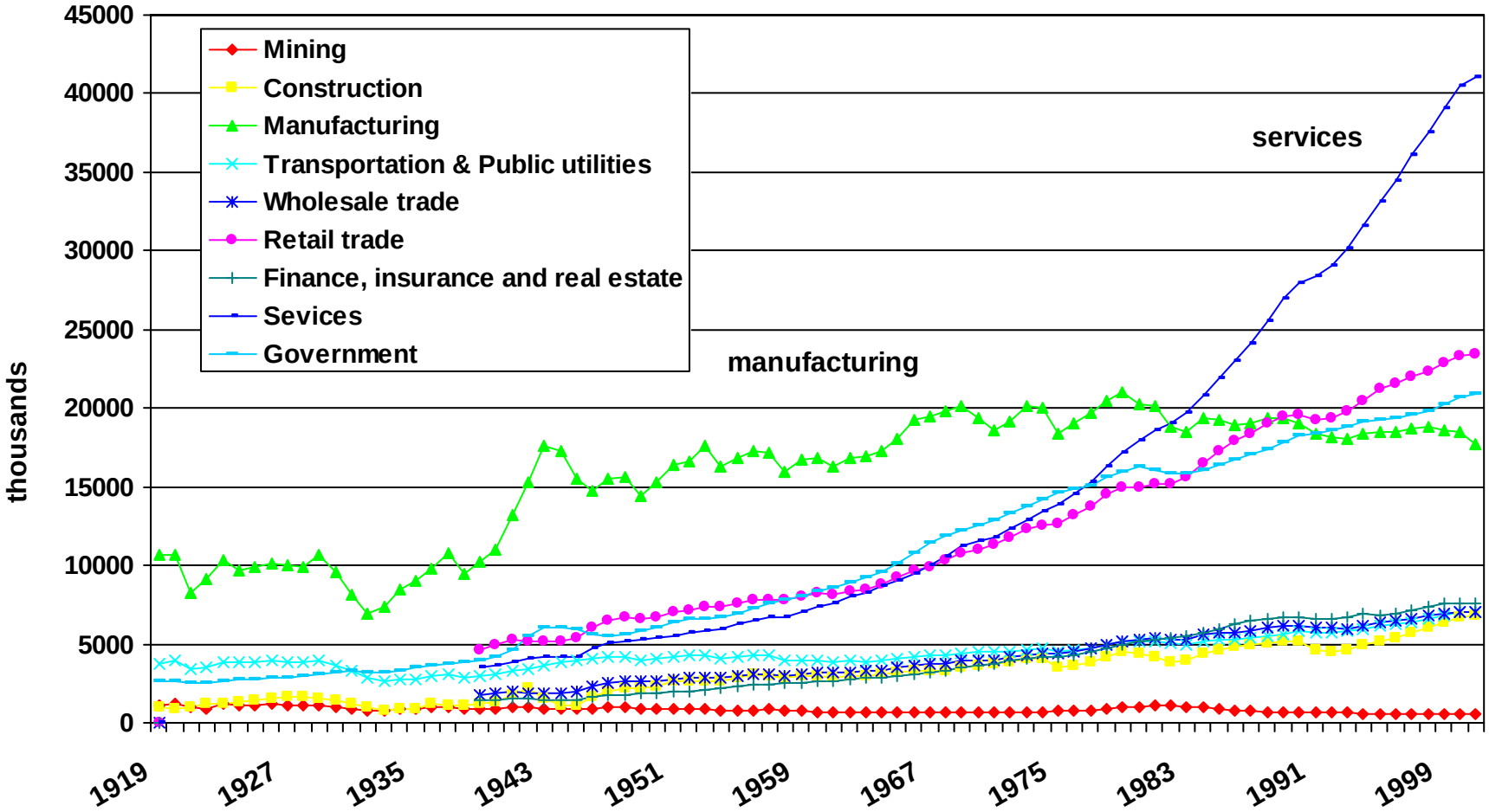


source: U.S. Bureau of Labor Statistics

Total working hours in manufacturing

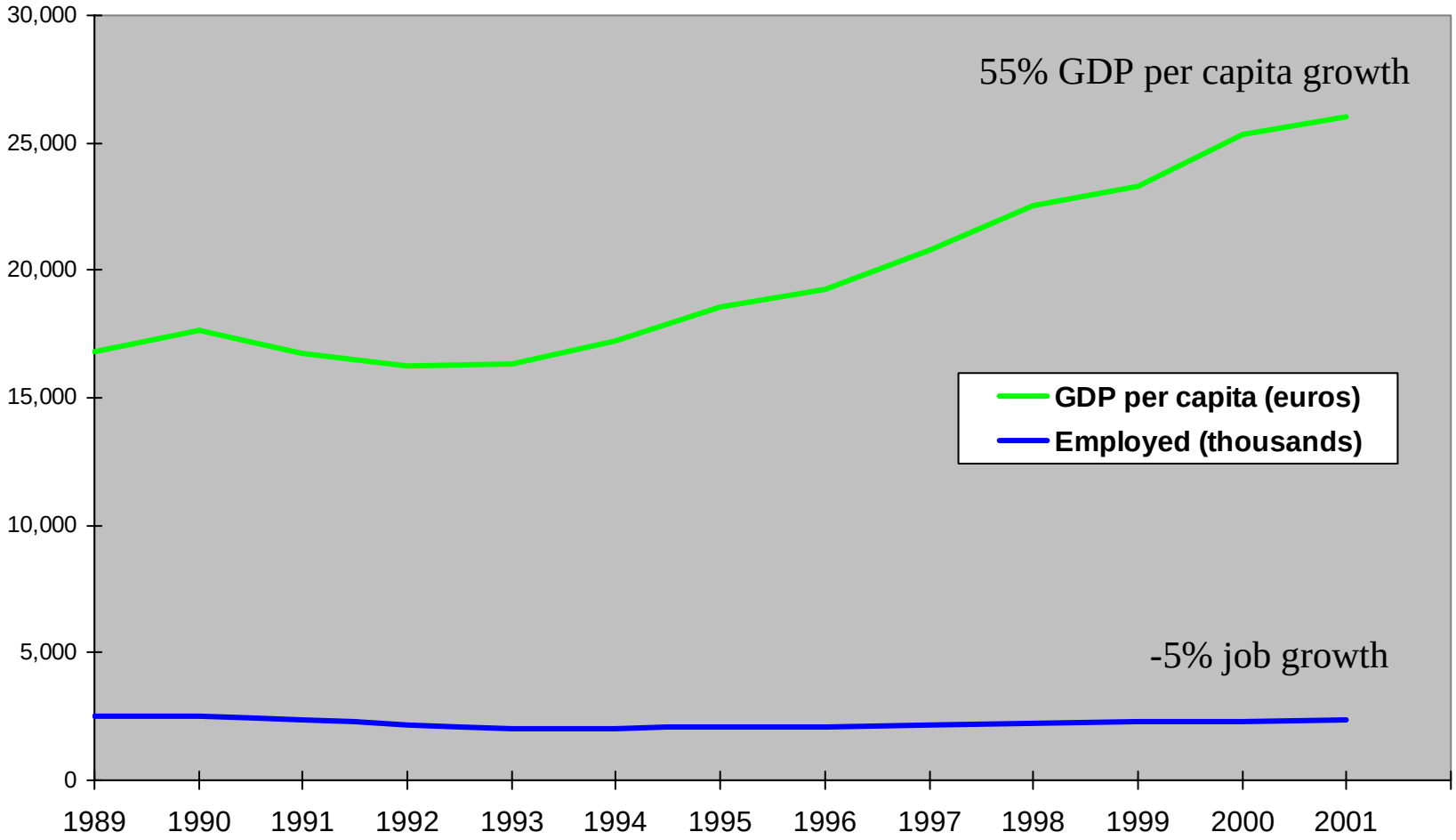


Total Non-Farm Labor Force,
U.S. 1919-2001



source: U.S. Bureau of Labor Statistics

Finland, 1989-2001



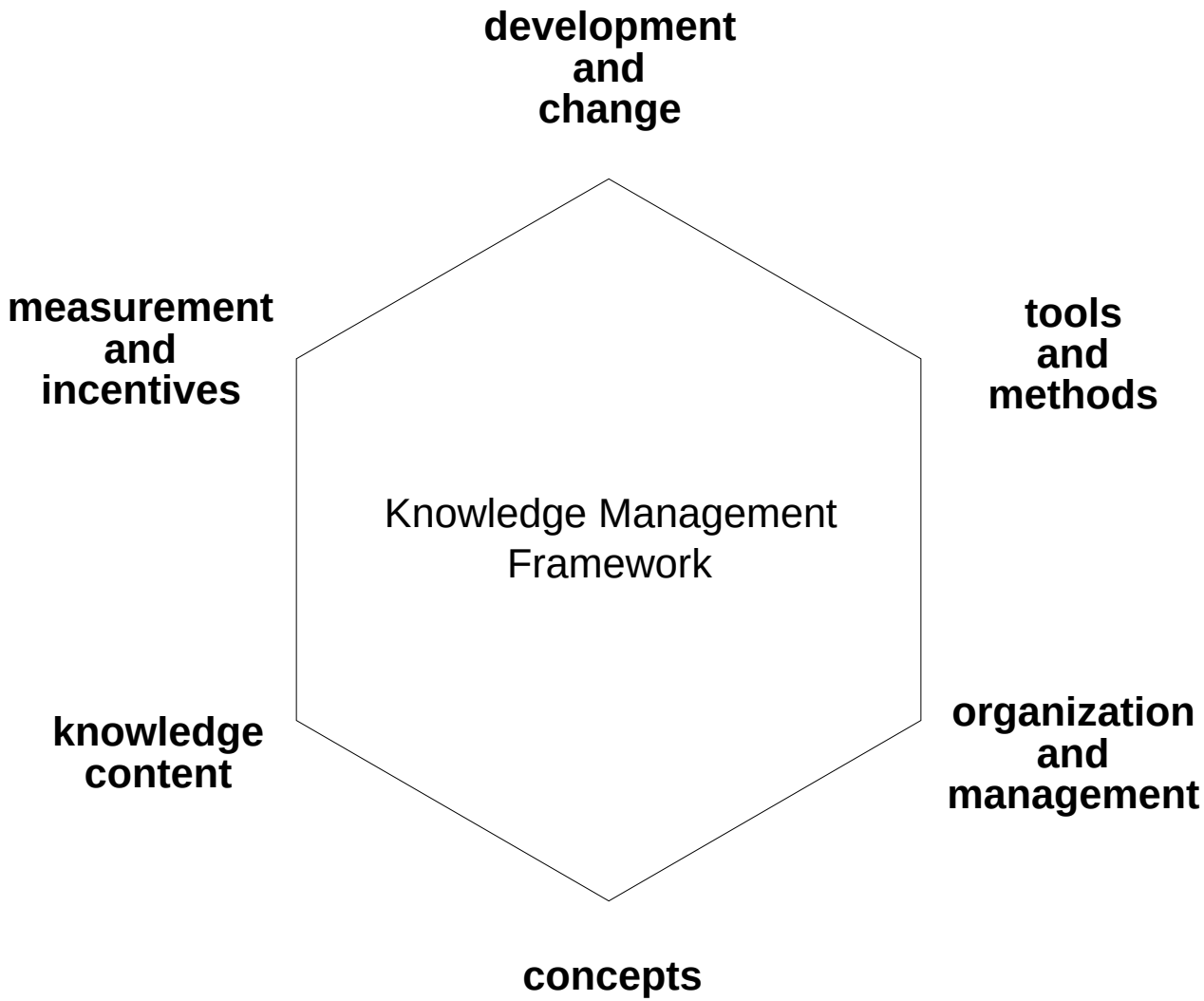
The Unknown Impact of ICT

- Today we do not know what is the economic impact of computer and communication technology
  - National statistics do not measure technological innovation well
  - Researchers disagree on whether
    - ICT has had positive impact on productivity
    - the impact has been positive only on the manufacturing sector
    - the real impact started to be seen only in the last years of the last decade
    - positive impacts are there and we simply have mismeasured economic growth and productivity

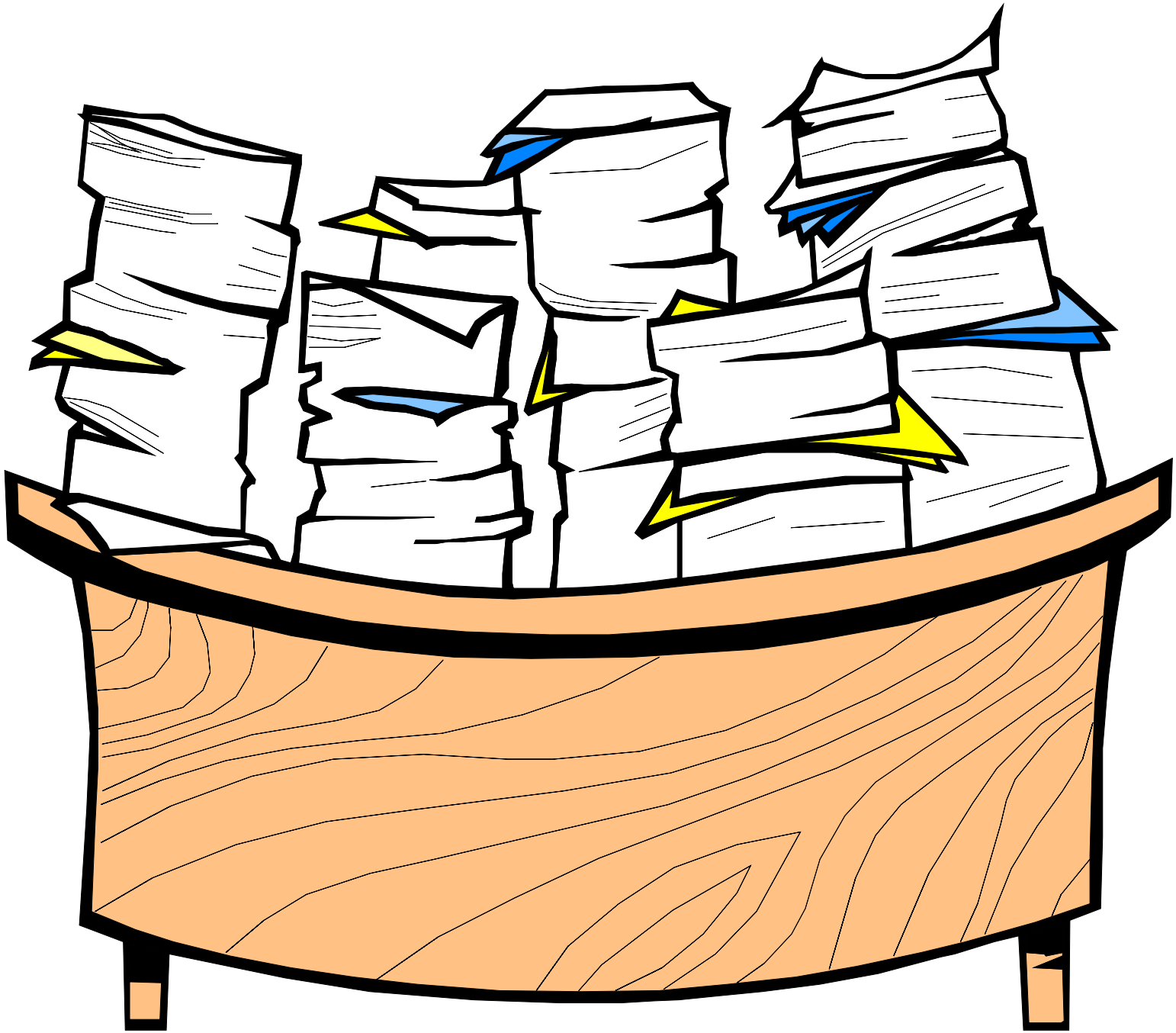
- The focus on technology missed an important point:
- Information systems were often developed with limited understanding of the characteristics of knowledge work
  - most information system development projects failed in the 1990s (e.g. ”business process re-engineering”)

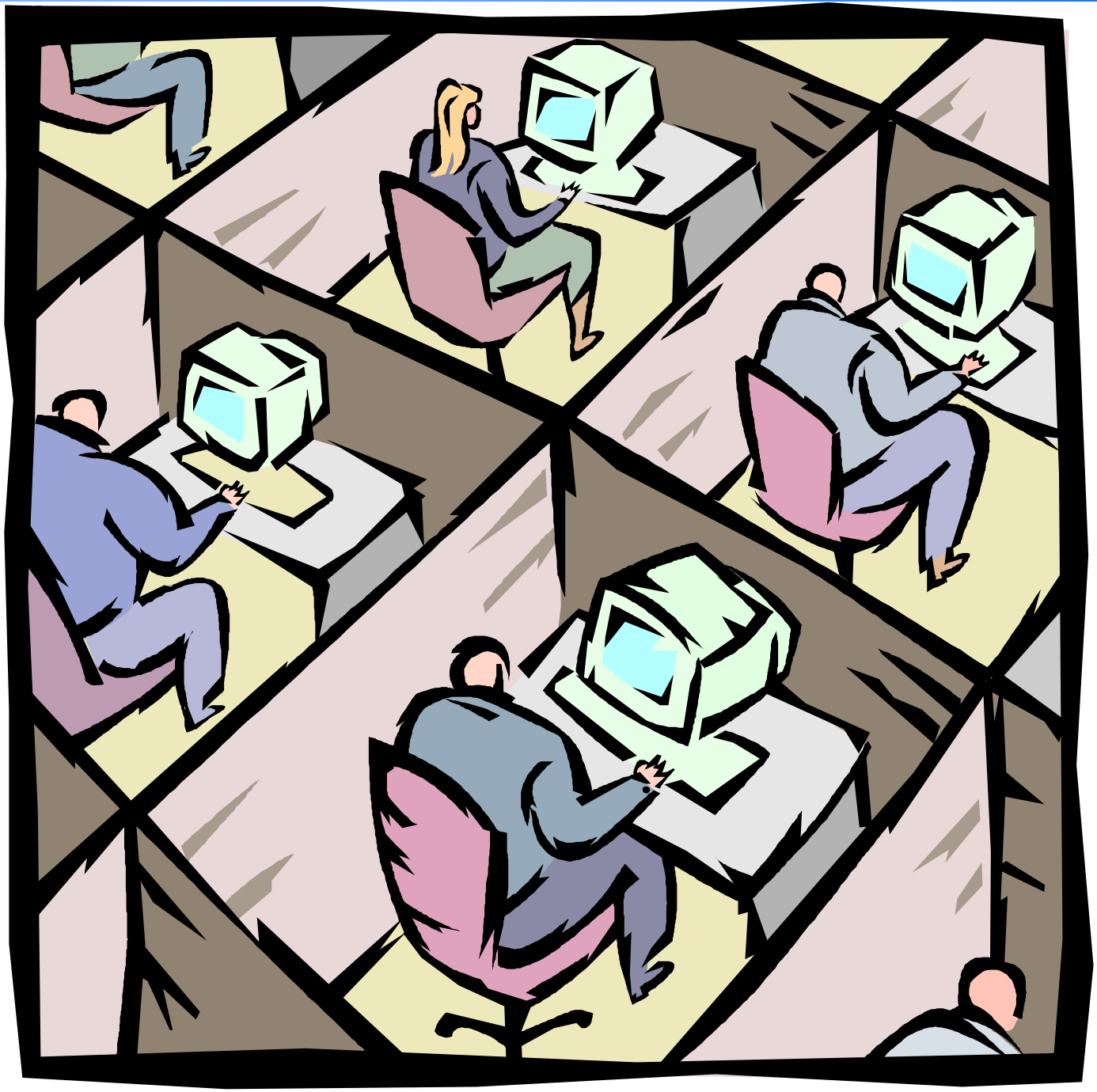
- Effective use of new technologies requires complementary investments in human competencies and new work practices
  - these require new ways to organize space, time, and social relations
    - this, in turn, requires new tools and new ways to use old tools

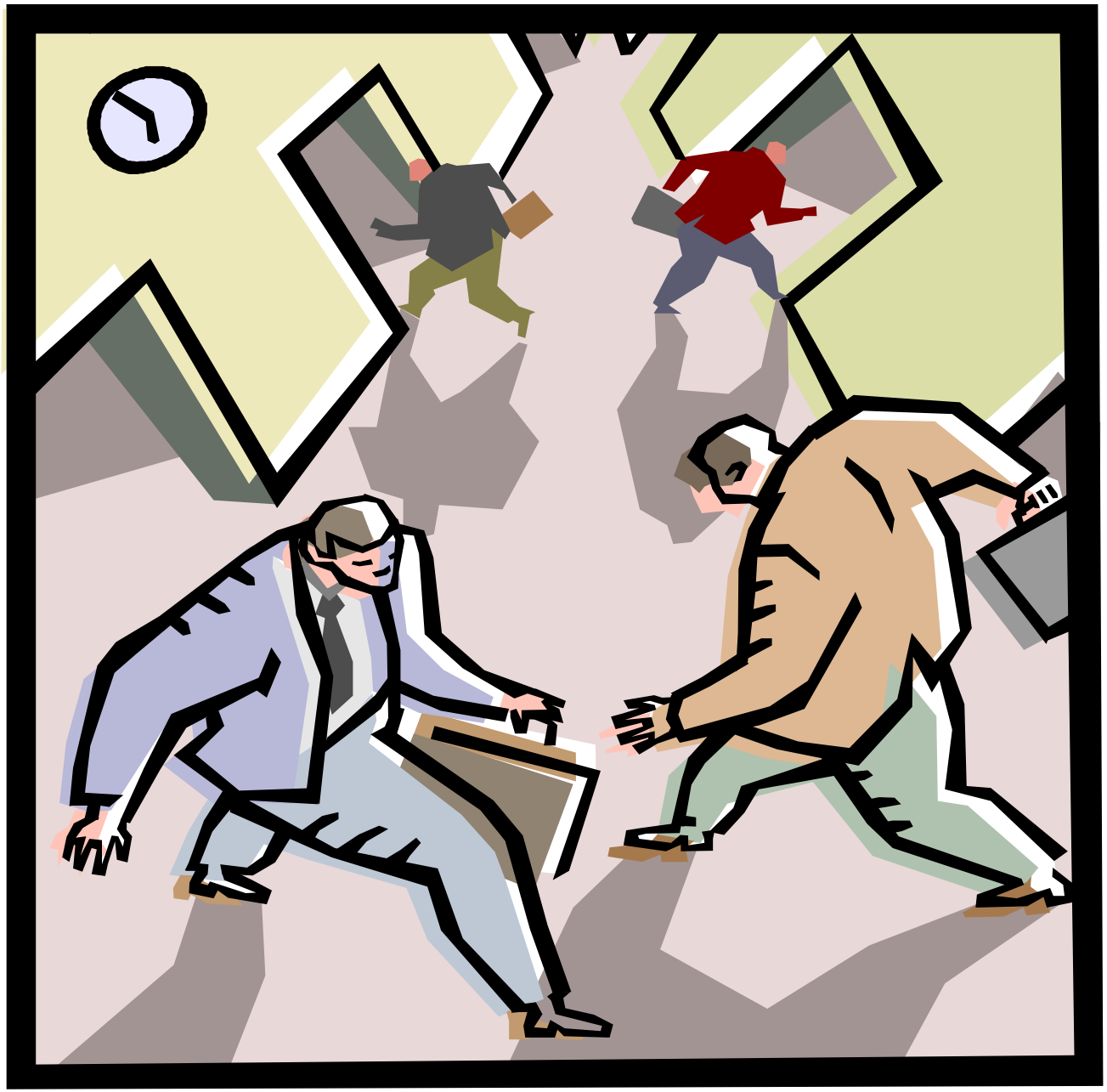
Intelligent Organization is About Systemic Change



source: Tuomi, I. (1999): Corporate Knowledge: Theory and Practice of Intelligent Organizations.



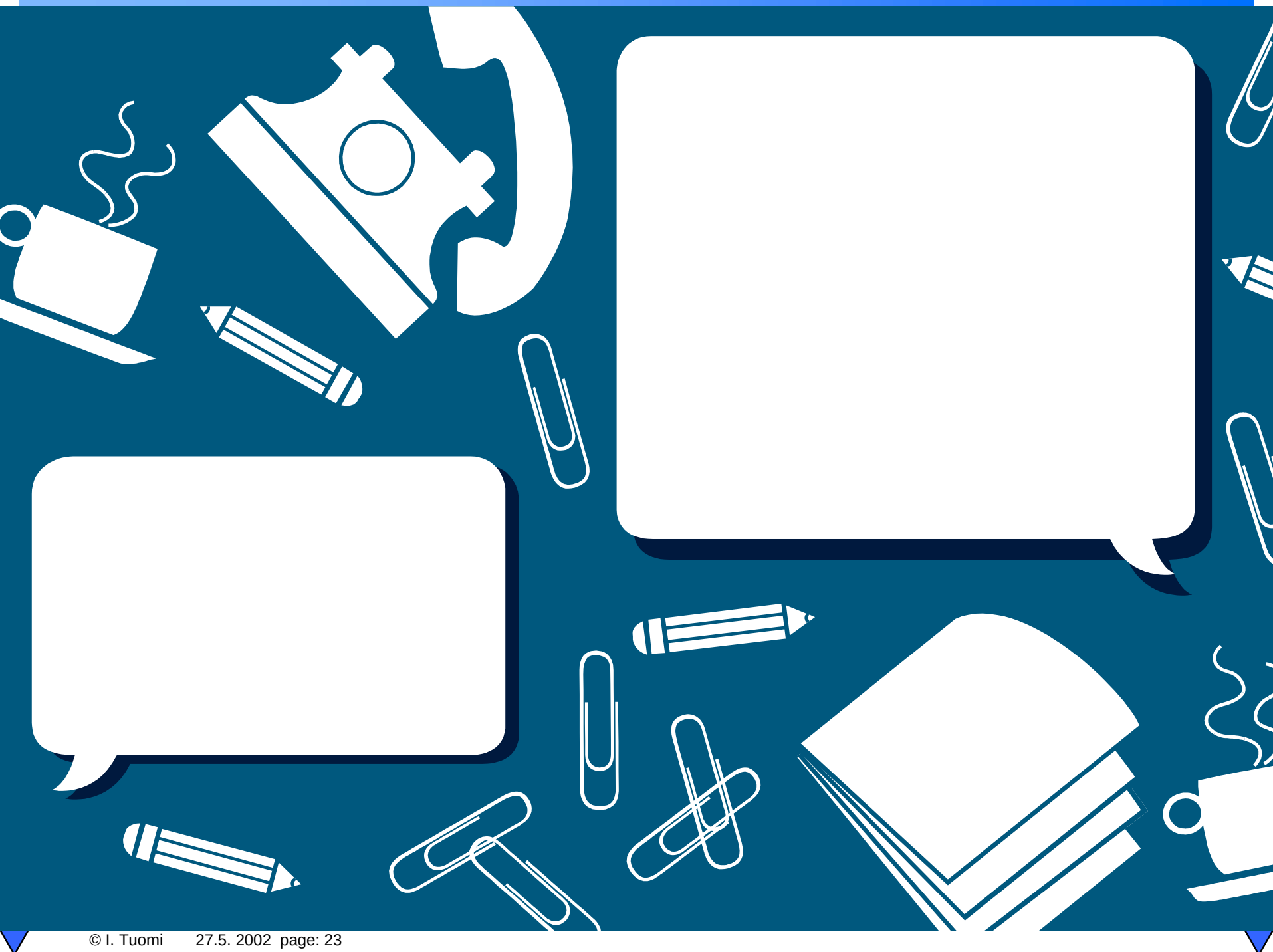




Boundaries, Transformations, and Boundary objects

- Syntactic knowledge boundary
  - Coordinate pre-specified dependencies
  - Transformation infrastructure: Transfer
  - Solution: ***information systems***
- Semantic knowledge boundary
  - Create shared meanings
  - Transformation infrastructure: Transfer and translation
  - Solution: ***communities of practice, networks of communities***
- Pragmatic knowledge boundary
  - Negotiate interdependencies
  - Transformation infrastructure: Transfer, translation, and transformation
  - Solution: ***conflict management, developmental work practices***

Adapted from: Paul Carlile: Boundary infrastructures for knowledge leadership and collaboration, Berkeley Knowledge Forum, 20.9.2001



HotCoffee

The Social and Cognitive Coffee Cup

Functions of a Coffee Cup

- It is used in many ways in knowledge work
  - to organize time and work rythm
  - to control mood
  - to adjust level of altertness
  - to meet people and exchange information
  - to build trust and social capital
  - to signal availability for social contact
  - to organize boundaries between public and private space
  - to organize boundaries between informal and formal social encounters
  - to signal celebration
  - to signal membership in a community
  - to keep your hands warm (in the Finnish winter)

Redesigning Coffee Cups for Knowledge Work

- How could the functions of a coffee cup be enhanced when we have wireless, networked, embedded, multimodal and context sensitive information technologies available?

- Networked coffee cups to signal availability for communication
- Wireless coffee cups to signal presence
- Intelligent coffee cups linked to adaptive user interfaces
- Virtual cafeterias
- Simulated coffee cups for time management, cognitive pacing, and social coordination
- Information sharing coffee cups
- Cups that keep coffee at the right temperature
- Cups that tell you when you consume too much coffeine and that you should listen Mozart instead
- Cups that you can talk to

All objects are social and cognitive tools.

This will become apparent when they are informationalized and when work becomes knowledge work.