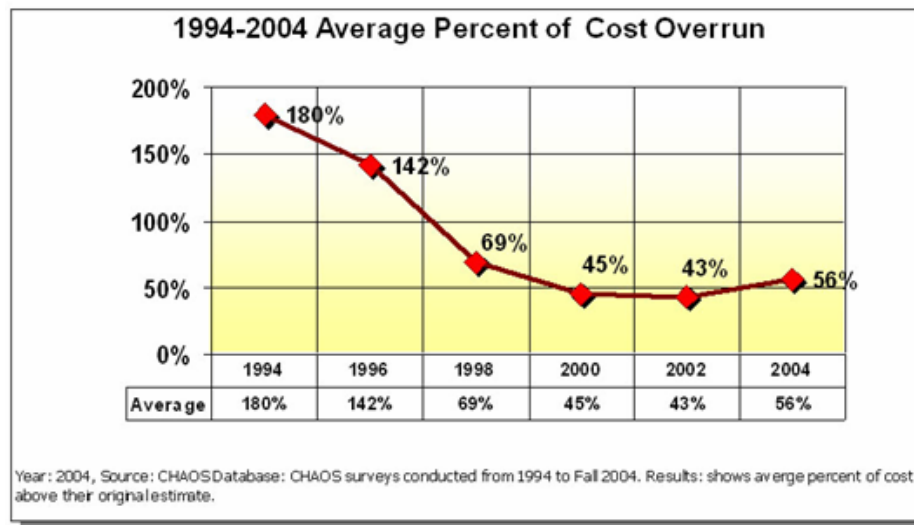# Research on project management

Learning goals: Improved evaluation of challenges when conducting project management studies and summarizing experience.

Supporting texts:

• THE STANDISH GROUP REPORT, 1995.

• **M. Jørgensen** and **K. J. Moløkken-Østvold. How Large Are Software Cost Overruns? Critical Comments on the Standish Group's CHAOS Reports, Information and Software Technology 48(4):297-301, 2006.**

• The social structure of Free and Open Source software development, Kevin Crowston and James Howison.

• M. Jørgensen and D. I. K. Sjøberg. **The importance of NOT Learning from Experience**, In EuroSPI'2000 -European Software Process Improvement, edited by -, Copenhagen, Denmark, 7-9 November 2000. unknown, Copenhagen, Denmark, pages 2.2 - 2.8, 2000.

Example: The Standish Group's Chaos Report

1994-2004 Average Percent of Cost Overrun

Year	1994	1996	1998	2000	2002	2004
Average	180%	142%	69%	45%	43%	56%

Year: 2004, Source: CHAOS Database: CHAOS surveys conducted from 1994 to Fall 2004. Results: shows averge percent of cost above their original estimate.

What should we learn?

- It feels easy to do a survey related to project management practices and results (that's why it is the preferred study method by many master students), BUT it isn't.
  - Surveys are in many respects based on complex study designs.

- Survey definitions of essential terms are essential.
  - Precise?
  - Consistently used in survey?
  - Is it reasonable to assume that the respondents understands and base his/her answer on the intended definition.

- Sampling procedure is where to look for potential biases.
  - Population surveyed representative?
  - Low response rate?
  - Biased reponse sample ?

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CASE study

- The social structure of Free and Open Source software development
  - What is the research question?
  - What is their conclusion in relation to the question?
  - What have they done?
  - How well have they done their study? (How valid are their conclusions?)
- When reading, skip all parts not related to the information you try to find!
- Read fast. If you don't find the information you are looking for when reaching the end of the paper, re-read until you find it.
- **NB**: Active information searching, not passive reading!

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Learning from experience is difficult!

- Availability bias

- Wishful thinking

- Hindsight bias

- Theory laden observations

- Illusion of control bias

- Etc.

- M. Jørgensen and D. I. K. Sjøberg. **The importance of NOT Learning from Experience**, In EuroSPI'2000 -European Software Process Improvement, edited by -, Copenhagen, Denmark, 7-9 November 2000. unknown, Copenhagen, Denmark, pages 2.2 - 2.8, 2000.

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Design your own study ...

- A PERT chart is a graphic representation of a project's schedule, showing the sequence of tasks, which tasks can be performed simultaneously, and the critical path of tasks that must be completed on time in order for the project to meet its completion deadline.

- **Typical claim**: The chart allows a team to avoid unrealistic timetables and schedule expectations, to help identify and shorten tasks that are bottlenecks, and to focus attention on most critical tasks.

- The input to PERT may for example be:
  - Most pessimistic duration (P)
  - Most likely duration (M)
  - Most optimistic duration (O)

- The estimate (median) is then: $\mathbf{TE = (O + 4M + P) / 6}$

- Design a study to evaluate the usefulness of the PERT method

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