

# An outlook on Technical Debt Management

## Reducing Friction in Software Development

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- › From source code to the whole lifecycle
- › Glossaries and ontologies (convergent)
- › Tooling (industrial & prototypes)
- › Economic theories

## SW engineers

- › Understand the concept and challenges
- › Deal with it during maintenance
- › TD management in place
  - Resource-intensive
  - Realistically only a portion managed

- › Technical debt grows
- › Managing TD is **dominant** in SW evolution
  - Established as a core SE practice
- › It's the next big thing
  - ++ Investment
  - Bankruptcy

# A perfect storm?

For every 100 KLOC an average software application had approximately US\$361,000 of technical debt\*

## Communities

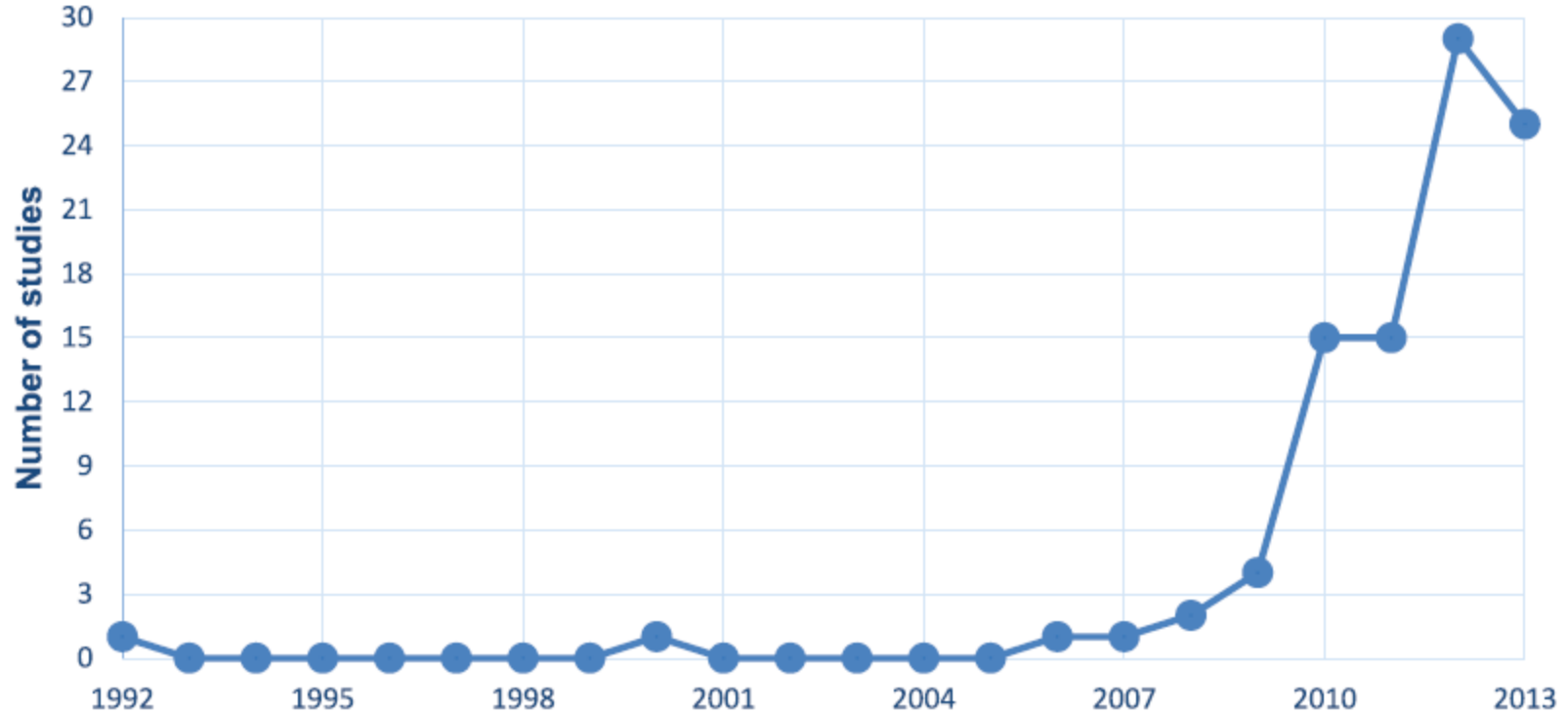
- › Maintenance & evolution
- › Reengineering / refactoring

## Terms

- › Aging
  - › Decay
  - › Sustainability
- 
- › Little progress
  - › “Dull” topic

- › Program analysis/comprehension
- › SW Quality measurement
- › Qualitative research methods
- › SW risk management
  
- › Industry-academia









4 ways to prepare for the storm

# 1. Management process

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- › TD prevention
- › TD identification
- › TD measurement
- › TD prioritization
- › TD monitoring
- › TD repayment
- › TD documentation
- › TD communication

- › Mimic economics data-driven focus
  - Availability of rich data
- › Investment strategies
- › Assign business value to intrinsic qualities
- › Bridge the communication divide

- › Acknowledge elephant in the room
  - Main concerns stem from architecture
  - But hard to detect automatically
- › Architecture backlog
- › Traceability with code
- › Architecture evaluations and refactoring

- › “No bugs found” vs.
  - Internal qualities
  - Trading off features with qualities
  - Decisions as investments
- › Throughout the SE courses
  - Brownfield projects
  - Linked with software economics

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