Requirements payoff:  
An empirical study of the relationship between requirements practice and software productivity, quality and risk management

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Research setting:
RE improvements at the Australian Center for Unisys Software (ACUS), Sydney

Marketing and product management group
Customers
Engineering group
Research chain of reasoning

Purposed Benefits of Requirements Engineering:

- **Productivity**, e.g. increased efficiency and reduced rework
- **Quality**, e.g. fewer defects and higher customer satisfaction
- **Risk management**, e.g. improved change management, improved project planning, scope estimation and negotiation

BUT scarce systematic evidence to support or *explain* these benefits

Research question

**How** do requirements engineering processes relate to improvements in productivity, quality, and risk management?
RE Improvement initiative

Revised Requirements Practice

- Group analysis sessions
- Feature decomposition
- Cross functional teams
- Structured requirements
- Test according to requirements
- Frequent negotiations with Product Mgmt and Marketing
Rich interaction between the REP and other development processes contributed to gains in **productivity** (communication, rework), **quality** (defects, feature coverage) and **risk management** (estimations, feature coverage, negotiation, requirements creep).
What worked at ACUS?

- Iterative feature decomposition in cross functional teams
- Frequent negotiation sessions with remote marketing and product development unit
- Well-defined change management processes
- *Project manager: a champion of process improvement*

Applicable outside ACUS?

- Features originating from remote proxy customers
- Organizations with extensive technical knowledge of long history products
Disclaimer: Possible limitations and directions for further research

- Lack of historical data for precise comparison
- Hawthorne effect
- More study needed to replicate these results
- Analysis of costs not only benefits