On the use of Financial Valuation Techniques in Requirements Engineering

Marcin Ocieszak, Krzysztof (Kris) Wnuk, David Callele
mocieszak@kozminski.edu.pl, krw@bth.se, callele@cs.usask.ca

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What is this paper about

• This paper investigates methods and techniques from finance for supporting value estimation for features or requirements.

• The challenges associated with applying financial techniques for feature value estimation and for supporting requirements prioritization.

• (1) Use Present Value and Cash Flow calculations, as typically applied by financial analysts performing value-based analyses, as input to requirements prioritization, cost-benefit analyses and triage efforts.

• (2) PV and Future Cash Flows
Present Value and Future Value

• Can we predict future revenues accruing to a specific feature (set)? If so, we can use NPV as input to the decision-making process.

\[ PV = FV \times (1+r)^{-n} \]

• PV is the Present Value, FV is the expected (or required) Future Value, r is the expected (or required) rate of return per investment period and n is the number of periods over which the investment is held

\[ E = CF_1(1+r)^1 + CF_2(1+r)^2 + CF_3(1+r)^3 + \ldots + CF_n(1+r)^n \]

• where E is the company value (or project value), CF_1, CF_2, ..., CF_n are forecasted future cash flows in year 1, 2, ..., n respectively, and r is the rate of return required by the shareholders

Commentary: The presence of the required information is a measure of business maturity: what are customers willing to pay for / what customer data can be monetized?
A Financial Basis for Management Decisions

• A given feature (set) is an investment, can we justify that investment?
• PV (and other techniques) can assist with management decisions
• Even if there is no projected revenue information, at least thinking about revenue points out that these factors may not have been considered
• RE practitioner does not necessarily have to be the one to do the calculations. But, the RE practitioner can ensure that these factors are considered (perhaps as part of V&V efforts)
Questions?

mocieszak@kozminski.edu.pl
krw@bth.se
callele@cs.usask.ca