

Abstract

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Evaluation of IT Platform Investments

This thesis analyses the IT evaluation practices in the Architecture, Engineering and Construction (AEC) industry in an interview study involving several major AEC companies in Sweden and the USA. The study shows that IT investments are frequently made without any formal analysis. In those cases when a formal evaluation is performed, simple capital budgeting metrics are used to rank investments.

In an effort to improve on the evaluation of IT investments in the AEC industry, this thesis develops a structured evaluation framework and analysis model for evaluating IT platform investments. Many IT investments have platform properties in the sense that they are essential requirements for further technology investments. IT Platform investments however, often do not generate sufficient benefits to be justified as standalone investments. These investments may nevertheless be shown to be profitable when contingent future investments are included in the analysis. The traditional capital budgeting methods are nevertheless not suitable for capturing the full benefits, risk and costs of IT platform investments.

The framework developed in the thesis provides a practical approach to analyse IT investments in terms of their impact on the firm's business capabilities. The focus is therefore not limited to the technology itself but on the combination of technology, business process design and the organisational restructuring necessary to generate a desired capability. The thesis develops an accessible and comprehensive Real Options analysis model for evaluating IT platform investments. The analysis model can be seen as an extension of the traditional Discounted Cash Flow analysis approach that incorporates sensitivity analysis and Monte Carlo simulation techniques, with a binomial lattice model derived from Option Pricing Theory.

The framework and analysis model are applied on a real investment case, which is based on a number of interdependent IT investment projects at a large global construction company. The application of the analysis model shows that the value of IT platform investments are considerably higher than traditional DCF analysis suggest

Key words: IT evaluation, Risk Analysis, AEC, Real Options Analysis, Platform Investment, Staged Investment, Compound Options

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