

The Valuation of Modular Projects: a Real Options Approach to the Value of Splitting*

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Abstract

This paper presents a real options approach to the valuation of modular projects, focusing on the value of splitting. Building upon the ? approach to modularity, it proposes a more general model, which includes the possibility of delaying the option to split, the effect of the correlations, between the system and the modules, on the value of modularity. It also assumes a multi-staged product development. We study the impact of some of the variables which influence the optimal modular strategy, showing that value can be increased by modularisation depending on the relative values, costs and risk of each modular configuration. When the modules are perfectly correlated with each other and with the system and have an identical risk, there is no incentive to modularise, unless there is a "size" advantage, related to lower costs or higher values of the modules. The effects of the correlations on the value of modularity, depends on the relative risks of the system and the portfolio of modules. A significant part of the value added by modularity is related to the option to choose the best of an interconnected system and a portfolio of modules: when they are all required to be implemented, this is similar to the option to choose the best of two alternative systems. In our view, this cannot be attributed to modularity and, thus, we analyse the "net value" of splitting, which is the difference between the value of a modular project and the value of the project with the option mentioned above.

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