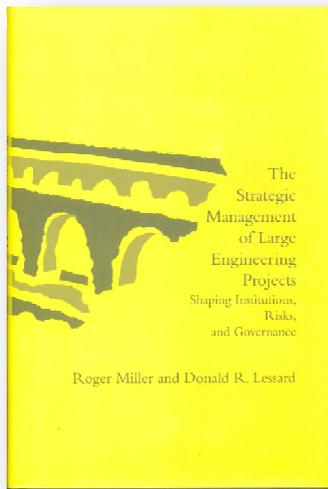


The Strategic Management of Large Engineering Projects: Shaping Institutions, Risks and Governance, by Roger Miller and Donald R Lessard

A Book Review by Ian Jay

This book is the result of a study of sixty 'Large Engineering Projects'. The expertise of the study team covers; corporate and project finance, civil and industrial engineering, and project management. The study identified practices that gave significant cost and time savings in large projects.



In the mid nineteen eighties there was a change in the way large engineering projects were structured and financed. The change was due to large cost overruns and poor safety management by the institutions that usually managed these projects. The new model consisted of groupings of partners such as banks, investors and engineering firms. These new sponsor models were the focus of the 'International Program in the Management of Engineering and Construction' (IMEC) study. The output of this work provides the basis for the book.

One of the main problems projects face is that plans focus on identified risks, and unknown risks do not receive sufficient attention. To address known risks contingency is put in place and then the project 'passively' awaits the outcome. The problem is that the known risks do not always emerge and additional risks arise that were not anticipated.

In the group of companies studied, the research found that active steps were taken to significantly reduce the chances of known risks arising. Then further effort was spent to develop strategies that would deal with unanticipated risks. This second group of risks are referred to as turbulence. A number of strategies to survive turbulence were identified, and an index of their use created. When the index was applied to the study sample, it was found that there was a clear relation between the index 'score' and project survival.

Where projects have few strategies to manage turbulence, they tended to break up when problems arose. Those projects which put effort into creating additional strategies, survived. The successful projects also had 20% to 30 % less CAPEX and needed 10% less time to complete.

The process of making these arrangements took an average of six years; this involved a series of episodes as the project was shaped in an iterative fashion. The key to the concept is to remain in the shaping, and initiation stage of the project for as long as it takes to ensure all suitable arrangements are in place.

The traditional approach to risk management is described by the authors as the casino model. The new approach they uncovered in the study, they call 'decisioneering'. The book provides lists of the types of devices that are used in this approach; its main aim is to align the project strategy to the risks it may encounter. The process of arriving at these arrangements is complex because it involves steering multiple organisations through the project shaping stage; attributes needed to do this include leadership and systems thinking.

Times have changed, and a new model for Large Engineering Projects is emerging. Institutional arrangements, laws and utilities have to change with each new type of project. The book indicates that if this is done well, the players can expect substantial gains compared to previous projects of a similar nature. The up front effort involved in shaping the project so it can survive turbulence, improves the chances of success.

Each chapter in the book is written by different members of the study team, depending on their particular expertise. Apart from the processes described above, the new role of Government and Utilities is explored. This book will be of interest to anyone involved in large projects. This includes;

managers in large utilities, state organisations, and government, as well as anyone involved in financing or initiating large capital projects.

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