

ENTREPRENEURSHIP & INVESTMENT SYMPOSIUM (E6)  
Attracting Private Investment (2)

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SYNERGIC FINANCING STRATEGIES FOR INVESTMENTS IN SPACE TECHNOLOGY IN THE  
AFTERMATH OF THE GLOBAL CRISIS

**Abstract**

Global economy is in a severe contraction, and the recession may last into 2010 unless policy makers can stabilize the financial system. The risks that financial conditions could worsen put a severe pressure on the investments in space technologies and we need special synergic financing strategies. Investments in space technologies are different from other types of real investments (long term, long building time, no productivity during a delayed period between the investment decision and the completion of the construction). Moreover the circumstances may significantly change and this uncertainty is difficult to be explained by using traditional instruments. A robust decision support should be based on the main characteristics (large irreversible initial investment, long economic life, long term) of this kind of investments. The traditional theory of investment does not consider irreversibility/ uncertainty; in this case is not included any managerial flexibility ingredient (the value of waiting, the possibility to postpone irreversible investments) and the standard profitability measures give inappropriate indicators for investment/ entry decisions (Barham, Chavas, Klemme, 1994). Pindyck (1991) demonstrated that an irreversible investment opportunity is much like a financial call option. Valuing real investments with option valuation models (Black-Scholes and binomial option pricing) use the assumptions that models may not be fully compatible with real investments. Pindik proposed an efficient method to include the option value of waiting in the traditional profitability analysis. In this case, the positive potential of the investment is taken into consideration by using real option analysis (ROA). In a new generation of models, ROA is mixed with soft computing techniques like fuzzy logic (Zmeskal, 2001, Collan, Carlsson, Majlender, 2003) or with DSS tools (Alcaraz, Heikkila, 2003). Efficient synergic strategies should also respond to the main problems of the markets related to the global crisis: the private loan failure, the global nature of liquidity crunch, the destructive power of the feedback loop, in which weakening economic and financial conditions become mutually reinforcing. A new framework based on the mixing of ROA with fuzzy logic (FL) is presented. Based on the critical review of the traditional investment valuation methods it is demonstrated that this framework offers a better valuation and provide a robust decision support for the selection of financial instruments for investments in space technology in the aftermath of the global crisis. Keywords: synergic strategy, investments in space technologies, global crisis, real options analysis (ROA), fuzzy logic (FL).