

## On Contracts and Governance: How Entrepreneurs use Strategy to Attract Funds from Venture Capitalists

Dan Friesner, Gonzaga University  
Sudesh Mujumdar, University of Southern Indiana  
Katherine Sauer, University of Southern Indiana

### Extended Abstract

A significant portion of the recent game theory literature has focused on what are known as sender-receiver models (Myerson, 1991). In these models, a “sender” conveys information to others (which are known as “receivers”) but otherwise takes no action. Concomitantly, receivers must make a choice and/or take action, but the action they take depends largely on whether and how they use the information provided by the sender. One recent paper in this vein is Caillaud and Tirole (2007), which looks at decisions where the sender represents an applicant; for example, someone submitting a piece of legislation, a tenure and promotion packet, a grant or a business plan, and the receiver is a committee of one or more individuals which evaluates the applicant’s proposal. They look at how committee composition and information cascades impact whether the proposal is accepted or rejected, as well as how much of the proposal is considered relevant information when making the decision. In their paper, the committee’s decision is discrete (approved or not approved) and the decision is subject to moral hazard.

In this paper, we extend Caillaud and Tirole’s model in the context of an entrepreneur who submits a business plan for funding by a venture capitalist. We choose to investigate this problem because it has several unique characteristics worth studying. First, in many practical applications, a venture capitalist group does not simply accept or reject a proposal as Caillaud and Tirole imply. Instead, the venture capitalist group may accept the proposal as it is, reject it as it is, or choose to accept the proposal, but revise the amount of funding necessary to complete the project. Secondly, there is a growing literature which uses game theory models to analyze the strategic decisions of entrepreneurs and venture capitalists; for example, see Elitzur and Gavious (2003). But in these models, the focus is not on the formation of the contract between the entrepreneur and the venture capitalist group, but instead is on how to most effectively implement the contract *after* it has been agreed upon; more specifically, how to reduce the potential for moral hazard on the part of the entrepreneur. Thus, using a sender-receiver model to characterize how the contract is formed is both an interesting and important contribution to the literature.

Our model considers the case of a single entrepreneur with a “slam dunk” business plan, which produces a guaranteed return two periods from now. The entrepreneur lacks adequate financing, but she knows a venture capitalist group who might be willing to lend the money provided they expect to receive the money back plus sufficient costs to cover their opportunity cost of the real value of the loan principal. The amount the entrepreneur asks for should be sufficient, when used productively, to generate a rate of return covering the entrepreneur’s opportunity costs and the venture capitalist’s return.

Once the entrepreneur submits a plan with a funding proposal, the venture capitalist must decide whether to reject the plan or accept it. If they accept it, they must also choose the amount of funding to provide today, and how much to delay until the next period. Doing so has two implications. One is that delaying a portion of the venture capitalist's payment reduces the possibility of moral hazard. Second, if they provide too little money upfront, the project will fail due to a lack of immediate financing. In this case the entrepreneur and the venture capitalist earn below normal rates of return.

Our primary findings are threefold. First, the entrepreneur will never submit a plan that they do not expect to be approved, with an upfront amount sufficient to ensure that the project will succeed. Second, the venture capitalist does not provide a large amount of the funds upfront. The amount of upfront funding is primarily dictated by the amount that delaying funding reduces (first order) monitoring costs. Finally, the entrepreneur may or may not be successful at increasing upfront funding by simply inflating the total asked amount, depending on the second order monitoring costs, most notably the interaction effect of increasing both upfront and delayed funding on monitoring costs.

## References

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