

TOLERANCE FOR FAILURE AND INCENTIVES FOR COLLABORATIVE INNOVATION

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Background and Research Goals

This is ongoing research that was funded through the Batten Institute for the past two years (2009-2010 and 2010-2011). We request that the Batten Institute fund this project from July 2010 through June 2011, which will be the final year of this project. Below we provide a brief statement about the research. We then list the project deliverables, current state, expected completion date, and requested funding.

Most organizations employ some form of collaborative innovation to manage innovation projects. Collaborative innovation often takes the form of a cross-functional team. While a diverse, cross-functional team is a good starting point, academics and practitioners have realized that team structure alone is not enough. An organization's ability to innovate can be enhanced by promoting risk-taking behavior through monetary incentive schemes (e.g. bonuses based on goals that are "big and audacious") and/or an organizational culture that "tolerates failure". Despite all of this effort, many organizations still find it difficult to align incentives, innovation culture, and project execution in a collaborative innovation environment. Through a controlled laboratory experiment our research will address the following question: how does an organization's tolerance for failure impact the set of projects undertaken by the firm, the incentives offered to team members, and the effort invested by team members engaged in a collaborative innovation initiative?

Proposed Research Approach

The goal of this project is to publish an academic peer reviewed article. Our experimental design consists of individuals that are grouped into teams of two. Each individual will be paid a fee for participation and will be connected to another participant via a computer interface. The team will be assigned an uncertain project and will win a specific cash amount if the project is successful. To model the collaborative nature of the team, the project will be deemed a success if and only if both individuals achieve success (ex-post it is impossible to determine which team member caused success or failure). Team members will be briefed about their individual probability of success and they will be given information regarding the other team members' probability of success. Team members will take action through costly effort commitment that increases their individual probability of success. The team will be told that upon project failure, they will have to pay a portion of their combined investments (a proxy for the organization's tolerance for failure). Alternatively, if the team is successful, each team member will receive a portion of the net value created by the project (a proxy for explicit incentives). This simple experimental design allows us to vary the information structure between team members, the project characteristics, the explicit incentives offered, and the organization's tolerance for failure.

Project Deliverables and Current State

1. *Develop theory and create a preliminary experimental design.* We completed the theory development and we have formulated an experimental design.
2. *Code the simulation and conduct pilot testing.* We worked closely with Darden Media to create an online interface (<http://ravonni.darden.virginia.edu/ravonni.html>). We completed a series of pilot tests to ensure that the interface worked properly. We also used the pilot tests to improve

the experimental design. In total we conducted five pilot tests with approximately 200 undergraduate and MBA students at Darden and Georgia Tech. As a result of extensive pilot testing, we developed an in-class exercise that highlights the important characteristics of collaborative innovation projects (“The Collaborative Innovation Exercise” UVA-OM-1401S).

3. *Finalize the experimental design.* Based on our pilot tests, we have finalized an experimental design and obtained IRB approval from Georgia Tech and UVA. We have also worked with Selin Kesibir and the BRAD Lab to organize our final round of experiments using the BRAD Lab subject pool.
4. *Present preliminary results at major conferences.* We have presented the preliminary result of our model and experimental data in invited sessions at INFORMS (Nov 2010) and POMS (May 2011). We will continue to present results at other schools and major academic conferences when the opportunity arises.
5. *Conduct final set of experiments.* Based on input received at INFORMS and POMS, we will conduct a final set of experiments during June and July 2011.
6. *Write and submit working paper.* We will write an academic peer reviewed article in the summer of 2011. The article will be submitted to a special issue on behavioral operations at the *Journal of Operation Management*.

Project Budget

Travel between Charlottesville and Atlanta for Co-PIs and travel to/from conferences to present results.	\$2,000
Cost of running experiments (200 participants in the final round of experiments at a cost of \$15 per participant). Note that this budget is a rough estimate because many subjects will lose money given the structure of our experiment.	\$3,000
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Total requested funds	\$5,000