Proposal for the 2007 Russell Ackoff Doctoral Student Awards

Project Title: "Implications of Organization Design on Industry Dynamics"

Author: Felipe Csaszar, Management Department
Advisor: Daniel Levinthal, Management Department

October 5, 2007

Project Summary

This project builds on the paper with which I won an Ackoff Award last year\(^1\). In the previous paper I extended the work of Sah and Stiglitz ("The Architecture of Economic Systems", 1986) to be able to predict Type I and Type II errors, innovativeness, and speed for a broad range of organizational forms. To do so, I developed a graph-theoretic model of organizations, and used the Markov Chain approach to compute organization-level metrics, which describe the decision-making behavior of the organization.

In the current paper I plan to use that model to understand the dynamics of the competition that takes places between firms which have different organizational forms. More specifically, this paper will develop a model on which firms with different organizational forms introduce new products (defined by price and quality) and heterogeneous consumers buy these products depending on their willingness-to-pay and the products’ quality (competition is modeled as a type of spatial competition).

What is novel in this model is that firms choose to bring a new product to market depending on how they predict the product will sell, and the accuracy of that prediction depends on the firm’s organizational form (the exact mathematical relationship between organizational form and prediction accuracy was the topic of the previous paper). The basic intuition of the model is that more hierarchical firms will be more conservative, while more decentralized firms will be more innovative. But the effect of

\(^1\) "An efficient frontier in organization design", which has been well received, being one of the five finalists (among 720 submissions) for the best paper award at the Academy of Management 2007, Business Policy and Strategy division, and winning Wharton's Nathan Award 2007 for being the most outstanding work on applied economics done by a PhD student.
conservativeness versus innovativeness will be contingent of several other variables such as number of competitors, organizational forms of the competitors, dispersion of the consumers' willingness-to-pay, dispersion in possible product qualities, and for how long the competition has been going (market maturity).

In summary, this paper aims to connect two disparate literatures, organization design and industry dynamics, and to shed light on several unanswered questions that lie in that intersection, such as: a) why we observe that entrepreneurial firms are prevalent in new markets, while a few large conservative firms are prevalent later; b) under which circumstances entrepreneurial firms may thrive in mature markets; c) is it possible to create a hybrid type of firm, that successfully combines characteristics of entrepreneurial and large firms; and d) what is the best organizational form for different environments.

**Budget**

My anticipated expenses are $2500, which I plan to use to present this work at the Strategic Management Society 2008 Conference (to be held in Cologne, Germany), to buy classic books related to the subject, and to upgrade my computer (to allow me to study larger models). Here is the detailed budget:

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration</td>
<td>$700</td>
</tr>
<tr>
<td>Airline tickets to conference</td>
<td>$800</td>
</tr>
<tr>
<td>Books</td>
<td>$500</td>
</tr>
<tr>
<td>Computer parts</td>
<td>$500</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$2500</strong></td>
</tr>
</tbody>
</table>

**Other sources of funding**

My Management Department scholarship includes $500 for conference related expenses. I plan to use this money to pay for the registration and airline ticket to the Academy of Management Conference 2008 (which will be held in Anaheim, California).

---

Felipe Csaszar  
PhD Student  
Management Department  
Wharton School

Daniel Levinthal  
Reginald H. Jones Professor of Corporate Management  
Management Department  
Wharton School