Incentive Design for Talent Discovery by E. Madsen, B. Williams, A. Skrzypacz

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General Overview

The provision of incentives is key for efficiency in organizations.

Traditional approach has incentives based on pay ("pay-for-performance").

We know that career concerns are important for incentive provision ("relative performance").

This paper links the two approaches in an elegant model.

How incentive pay interacts with career concerns?

Basic Setup

A firm has a continuum of employees of measure 1.

The firm is endowed with both **innovative** and **routine** projects.

A *routine* project generates a certain payoff $K \in (0, 1)$.

An *innovative* project of type n generates a payoff 1 with probability $\gamma(n) \in [0, 1)$, and 0 otherwise.

Assume that $\gamma'(n) < 0$, with

$$\gamma(0) > K > \gamma(1)$$

so n represents the *project quality.*

There is an optimal first-best number of projects $N^\dagger$ to be implemented, where project $n \in [0, N^\dagger]$ is implemented.

Basic Setup (2)

Each employee is randomly assigned to a risky project.

The routine project is available to every employee.

The incentive problem: After employees learn quality n of assigned project, must decide whether to implement the innovative or routine project.

Innovative projects are informative on **employee quality**:

Type $\theta \in \{H, L\}$, with

$$\Pr\{\theta = G\} = \pi \in (\gamma(0), 1)$$

Employees of type L always fail innovative projects, and type H succeed w.p. $q(n) = \gamma(n)/\pi$; no effect on routine projects.

Type θ not know to firm or employee; both learn from observing outcome of innovative project.

Basic Setup (3)

Learning is important for promotion decisions.

Firm has β positions to fill by promoting existing employees.

Promoted employees earn:

- a *private benefit* V;
- a payoff R to the firm if of type H and payoff 0 otherwise.

The agency conflict:

- Firms want to invest in good innovative projects and to promote good employees;
- Employees just want to be promoted.

Incentive scheme

The incentive scheme is based on the target number $\mathcal{N}$ of innovative projects it wishes to implement.

The target $\mathcal{N}$ affects both *expected payoff* and *talent discovery*.

It is composed of:

- *Bonus structure*: $\mathbf{T} = (T_G, T_\emptyset, T_B) \geq 0$.
- *Promotion policy:* $\boldsymbol{\sigma} = (\sigma_G, \sigma_\emptyset, \sigma_B) \in [0,1]^3$.

Main Results

Start with case where firm cannot commit to incentive scheme.

In this case, firm will:

- Pay no bonuses;
- Keep promoting employees, starting from successful ones, until all β positions are filled.

Equilibrium: Number $\mathcal{N}^{eq}$ of employees deciding to innovate is:

- If $\beta < \underline{\beta}$: everybody innovates, $\mathcal{N}^{eq} = [0, 1]$
- If $\underline{\beta} \leq \beta \leq \bar{\beta}$: Interior number of innovators $\mathcal{N}^{eq} \in [0, 1]$
- if $\beta > \bar{\beta}$: nobody innovates, $\mathcal{N}^{eq} = \emptyset$.

Innovation rate is generically inefficient.

Main Results (2)

Firms can affect innovation rates by committing to pay bonuses;

Firm has *two levers* to affect incentives:

- *promotion rates* of employees who choose routine projects, and of employees who chose innovative projects and fail;
- *bonuses* to employees who choose routine projects, and of employees who chose innovative projects and fail.

Bonus scheme structure depends on whether firm wants to *promote* (high β) or *deter* (low β) adoption of innovative projects.

Low beta case

Too much innovation.
Optimal incentive scheme depends on the number N of innovation the firm wants to elicit.

- *Smaller* N: bonus to employees undertaking routine projects; efficient promotion decisions.
- *Even smaller* N: no bonuses, under-promote successful employees and over-promotes employees undertaking routine projects;
- Optimal N depends on R,value.of talent discovery.

High beta case

Too little innovation.
Optimal incentive scheme depends on the number N of innovation the firm wants to elicit.

- *Larger* N: bonus to employees undertaking innovative projects and fail; efficient promotion decisions.
- *Even larger* N: no bonuses, over-promote employees undertaking innovative projects and fail, under-promotes employees undertaking routine projects;
- Optimal N depends again on R.

Great Paper !!

This is an excellent paper: offers new insights on the incentive provision problem.

Traditional agency problems are in terms of motivating effort.

In many situations effort is not really the issue.

The real agency is on project selection.

In traditional models projects offer private benefits.

Micro-foundation of private benefits as career concerns.

It nicely links career concerns and incentive pay and offers insights on organization design.

Major comments

1. How to interpret β ?

The number of promotions β is exogenous in the model.

Is this driven by the technology?

Do young and growing industries have greater β?

Do larger and more complex organizations have greater β?

Important to sharpen empirical implications.

Major comments (2)

2. Endogenous β ?

The number of promotions β could be endogenous.

This feature may speak to the question of organization design.

Flat organization vs vertical organizations.

How organization design affects innovation?

Can the model explain prevalence of flat organizations in innovative industries?

Major comments (3)

3. Effort may be important.

Career concerns may have ambiguous effect on effort.

Rotemberg and Saloner (1994) on the benefits of narrow business when contracts are incomplete.

More generally: Whether competition promotes or stifles innovation is an open question.

Minor comments

1. Tension between bonuses and over/under promotion?

In the model, firms either pay bonuses **or** adopt inefficient promotions**, not both.**

Why they do not co-exist ?

2. What happens with intermediate β?

There is generically an inefficient amount of innovative projects undertake.

Firm may want affect the number of innovative projects even for intermediate β.

3. Risk and talent discovery. Safest innovative projects are most informative.

Summary

Great paper !

Look forward seeing developments.