Managing through incentives
The economics of dynamic employment relationships

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What is incentive contracting?
2016 Nobel Prize in Economics
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This year’s laureates have developed contract theory, a comprehensive framework for analysing many diverse issues in contractual design, like performance-based pay for top executives[.]”
Types of employment incentive problems

1. Moral hazard

2. Adverse selection
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   ▶ Employees might prefer to shirk, steal, or divide time inefficiently between tasks

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1. Moral hazard
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2. Adverse selection
   - “Asymmetric information” - employee knows something their employer doesn’t
   - Low-quality workers may pass themselves off as high-quality to get hired
   - Employees with conflicts of interest may misrepresent the viability of a project
Tools for incentive contracting

- Performance pay
- Promotion and firing
- Menus of contracts
- Procedural rules
- Costly monitoring
Managing temporary projects
Consultancy MBB is engaged by firm PG to make proposals for cutting costs and adopting industry best practices.

Both MBB and PG are uncertain about the scope for improvements.

MBB’s team knows when the project has become uneconomical... but is paid by the hour.
A hypothetical case study

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Question

*Can incentive contracting be used to encourage information sharing and increase project returns?*
A toy model

- PG and MBB have IRR 5%/year
- MBB charges $40k per month, with a profit margin of 50%
- Each major improvement is worth $1m to PG
- Major improvements are found on average every six months until project lapses
- Average time until project lapses is 1.5 years
At-will employment

How much profit can PG make without an incentive contract?

MBB earns more the longer the project runs → no info-sharing

PG ends the project after a sufficiently long dry spell

Real option valuation techniques can be used to find the best end date

Result

PG should operate the project until 17 months have passed with no improvements. The project's NPV for PG is $1.5m.
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Incentive contracting tools

1. Completion bonuses

2. Deadlines

3. Merit extensions
A contract with info-sharing

Proposed contract
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A better contract with info-sharing

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An optimal incentive contract

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PG commits to a project horizon of 20 months, *reset every time MBB delivers a major improvement*. Further, PG promises that if the project is ended $N$ months before the horizon, MBB will earn a completion bonus equal to the NPV of average billings minus expenses for $N$ months.
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Result
*The project’s NPV for PG with this incentive contract is $1.8m.* This is PG’s most profitable incentive contract.
Results of incentive contracting

<table>
<thead>
<tr>
<th>At-will employment</th>
<th>$1.5m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonuses</td>
<td>-240%</td>
</tr>
<tr>
<td>Bonuses + deadlines</td>
<td>-2%</td>
</tr>
<tr>
<td>Bonuses + deadlines + extensions</td>
<td>+15%</td>
</tr>
</tbody>
</table>
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Contracting with ambiguous news

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  ▶ Pros - reduce premature project termination
  ▶ Cons - increase payments to MBB

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An optimal incentive contract with info sharing always increases PG's profits over at-will employment.
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Lessons for managers
How can you improve the outcome of temporary projects?

1. Commit to project horizons rather than open-ended engagements
2. “Pay for failure”
3. Be responsive to observable milestones (but not too responsive)
When should you consider incentive contracting?

1. Incentives are misaligned and direct oversight is hard
2. Employees believe you will honor contractual terms
3. You understand what motivates your employees
4. Employees understand how the contract works