

Game Theory: Shoddy Work and Lousy Pay

Warm room environmental builds temperature controlled rooms in research centers throughout the world. The boss hires local labor at the site to do some of the routine wiring and plumbing.

Unfortunately, as soon as the boss leaves the job, the local help goofs off. As a result, the boss gets nasty notes and refusals to pay until the work is finished correctly. When this happens, he has to make repeated visits to the site to fix things. Therefore, higher quality work gives more total profit.

There are three strategies the boss can pursue:

1. Overpay the help and hope they will perform exceptionally;
2. Pay the standard rate, expecting them to live up to the agreement;
3. Underpay ("strike a hard bargain") to allow for the fact that he will probably have to fix things.

Likewise, the help can adopt one of three strategies:

1. Do excellent, thorough work;
2. Meet the minimum specifications;
3. Goof off and cut corners.

<i>Profits in \$M as a function of doing thorough, minimum, or shoddy work</i>				
Boss / / (Help)	Goof off/ shoddy	Minimum	Thorough/ excellent	Help's Maximum Profit
underpay	10 / / 25	53 / / 22	90 / / 20	
Pay standard rate	5 / / 30	48 / / 27	85 / / 25	
overpay	0 / / 35	43 / / 32	80 / / 30	
Boss' Maximum profit				

Use squares for the boss and circles for the help to show which strategies would prevail if each party only chose to maximize short term gain. How much would each make in the stable solution?

Show, by drawing lines through those rows and columns, which strategies are dominated and wouldn't be pursued in any case.

What would be a better solution for them both? What might they consider to allow them to come to a stable agreement on that better solution?

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Boss' Maximum profit	10	53	90	

The combination of thorough work and overpayment would be better for both. One way to get an agreement like this to work would be for each to consider future work relationships.

Others might be to pay only on completion with a bonus for high quality, pay extra to keep a foreman onsite to watch the boss' interests. Other interesting suggestions: profit-sharing /incentive plans, sitting down over a few beers to develop a relationship.