**HW2 Solutions**

**Chapter 5**

12)

Since , the firm is not using the cost minimizing combination of labor and capital. To minimize costs, the firm should use more labor (to decrease the marginal product of labor ) and less capital (to increase the marginal product of labor) until the ratios are equal. Remember that the firm takes prices as given so it has no control over w or r.



18)

Facility “L” produces 6 million kilowatt hours of electricity at the lowest average total cost, so this is the optimal facility for South-Florida. Facility “M” produces 2 million kilowatt hours of electricity at the lowest average total cost, so this is the optimal facility for the Panhandle. There are economies of scale up to about 3 million kilowatts per hour, and diseconomies of scale thereafter. Therefore, facility “M” will be operating in the range of economies of scale while facility “L” will be operating in the range of diseconomies of scale.

19)

To maximize profits the firm should continue adding workers so long as the value marginal product of labor exceeds the wage. The value marginal product of labor is defined as the marginal product of labor times the price of output. Here, output sells for $50 per panel, so the value marginal product of the third worker is $50(290) = $14,500. Table 5-4 summarizes the *VMPL* for each choice of labor. Since the wage is $7,000, the profit maximizing number of workers is 4.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Machines | **Workers** | **Output** | **MPL** | **VMPL** | **Wage** |
| 5 | 0 | 0 | – | – | – |
| 5 | 1 | 600 | 600 | $30,000 | $7,000 |
| 5 | 2 | 1,000 | 400 | $20,000 | $7,000 |
| 5 | 3 | 1,290 | 290 | $14,500 | $7,000 |
| 5 | 4 | 1,480 | 190 | $9,500 | $7,000 |
| 5 | 5 | 1,600 | 120 | $6,000 | $7,000 |
| 5 | 6 | 1,680 | 80 | $4,000 | $7,000 |

**Chapter 6**

11)

The environment in which computer manufacturers operate is very uncertain. The

rate of technical progress among chip, and other hardware, manufacturers

increases the marginal cost of signing long-term contracts.

15)

The first important point to make with shareholders is that restructuring the incentive plan is designed to maximize shareholder value. This is achieved by giving employees incentives to stay with the company longer, thereby reducing costly employee turnover and increasing the company’s profitability. Also, byrestructuring the incentive plan, employees will want to find ways to work more productively and make the company more profitable. The benefits to theshareholders and the employees will be a higher stock price.

21)

Business-process outsourcing (BPO) is a contractual relationship with a third party firm, whereas a firm that produces human resource services internally is vertically integrated. Contracting human resource services with a third party allows the firm to specialize in activities related to its core business, which as the problem points out may result in large cost savings. Contracts, however, are costly to write and often incomplete. These reasons provide justification for vertical integration. Contracting with an international-based firm may be more costly since the contract must be written in a manner to protect the firm in a foreign country. This extra cost should be compared to the extra benefit (cost savings) that accrues from lower off shore labor. Furthermore, there may be cultural difference in hiring practices that may make outsourcing from human resources to an international firm less attractive.

23)

The money the dealership pays to train workers in the form of time and expenses is a specialized investment in human capital. The investment only has value to the dealership if workers remain with the dealership and the dealership maintains its relationship ADP. Once this is sunk, it faces a potential “hold-up” problem from workers and ADP: If either party decides to sever the relationship, the dealership will have to sink additional funds into training new employees.

**Part II**

1)

Boeing tried to outsource lots of 787 components, and now faces the downside of that decision. Some of the components (e.g. stabilizers) require specialized investments, since these components are only for 787 and not much good for anything else. Evidently the supplier contracts did not give them sufficient incentive to ramp up production and quality control to meet Boeing’s needs. It is a complex contracting environment, so despite high cost, Boeing may have to vertically integrate with some suppliers or build their own capacity to produce the more specialized components of the 787. (In fact, they did integrate with one of the main suppliers a few months ago!).

2)

Pretty good example as far as it goes. Employee acts on firm’s behalf but has his own goals, and Facebook browsing probably doesn’t help the firm.