DISCUSSION QUESTION

Name:
Instructor:
Course:

In 2009, Amazon reported annual revenue equal to $24.5 billion and annual profit equal to approximately $900 million ($0.9 billion). In 2013 Amazon's revenue had more than tripled, to $74.45 billion, while their profit actually declined to only $270 million.

a) Given the above figures of Amazon's revenue and profit, what did Amazon's annual total cost equaled in 2009 and 2013?

b) One can reasonably conclude that Amazon is more concerned with increasing their total revenue than they are with increasing their profit. Based on this conclusion, can one assume that firms like Amazon do not expect to maximize their profits?

PEER GROUP PROBLEM SOLVING

Name:
Instructor:
Course:

Many large pharmaceutical companies spend billions of dollars every year on the research (R&D) and development of new drugs.

a) Suppose a pharmaceutical company estimates that if they spend $1 billion on the development of a new drug, they can expect to earn $100 million in accounting profit as a result (their stream of future revenue would be $100 million higher than all of their explicit costs, including the R&D costs). Based on this information, does it necessarily mean that this company should develop this drug? What does the decision of whether or not to invest in this new drug (or another) depend on?

b) Some people have criticized pharmaceutical companies for not investing heavily in drugs that could treat debilitating illnesses like Tourette syndrome or muscular dystrophy. Why would pharmaceutical companies be willing to invest more heavily in drugs that treat for example, erectile dysfunction or hair loss, than these highly debilitating illnesses? What could the government do to address this issue?

IN-CLASS EXPERIMENT / ACTIVE EXERCISE

Diminishing returns demonstration:

Have students either break into groups of 5, or have 5 students to volunteer to demonstrate for the rest of the class.

The instructor will need approximately 100 sheets of paper, 1 pen or sharpie, and 1 stapler (with staples) per group.

The production will involve three distinct tasks: Write a word, like “ECONOMICS”, on a sheet of paper, fold it, and staple it. The objective will be to see how many units can be produced per period (30 seconds is a reasonable amount of time per round).

Begin with one student and then add an additional student each round. If being demonstrated for the whole class, the instructor can record total production for each round; if done in groups, one student can be designated as the official recorder.

Total output will rise for the first few rounds but diminishing returns will set in and total output will level off. Once you have the data for several rounds (five should be enough), calculate marginal product and average product (or have students calculate marginal product and average product).

Have students explain why diminishing returns set in. The instructor can also explain the relationship between average product and marginal product.

SOLUTIONS AND INSTRUCTOR NOTES

Discussion Question

In 2009, Amazon reported annual revenue equal to $24.5 billion and annual profit equal to approximately $900 million ($0.9 billion). In 2013 Amazon's revenue had more than tripled, to $74.45 billion, while their profit actually declined to only $0.27 billion.

a) Given the above figures of Amazon's revenue and profit, what do you know Amazon's annual total cost equaled in 2009 and 2013?

Profit equals total revenue minus total cost, so we can calculate Amazon'stotal cost as total revenue minus profit. In 2009, their total cost was equal to $23.6 billion ($24.5 billion - $0.9 billion). In 2003, their total cost was equal to $74.18 billion ($74.45 billion - $0.27 billion).

b) One can reasonably conclude that Amazon is more concerned with increasing their total revenue than they are with increasing their profit. Is the assumption that private firms maximize profit *not* true for firms like Amazon?

Firms don't always necessarily maximize profits today, but are concerned with their long-term expected profits. Many investors believe that Amazon is positioning itself to reap larger profits in the future, even if that means lower profits today. Therefore, Amazon is necessarily not likely violating the assumption that firms maximize profits; they are instead looking to maximize their long-term profits.

Peer Group Problem Solving

Many large pharmaceutical companies spend billions of dollars every year on the research and development of new drugs.

a) Suppose a pharmaceutical company estimates that if they spend $1 billion on the development of a new drug, they can expect to earn $100 million in accounting profit as a result (so their stream of future revenue would be $100 million higher than all of their explicit costs, including the R&D costs). Just based on this information, does it necessarily mean that this company should develop this drug? What does the decision of whether to invest in this new drug (or another) depend on?

The decision of whether or not to invest depends not on their accounting profit, but on their economic profits! This means that the company will consider their implicit costs, or the amount the firm expects to make if they invested $1 billion in another drug. If the firm expects to make more than $100 million in profit from another drug (or if their implicit costs are higher than $100 million), then they should invest in the other drug.

b) Some people have criticized pharmaceutical companies for not investing heavily in drugs that could treat debilitating illnesses like Tourette syndrome or muscular dystrophy. Why would pharmaceutical companies be willing to invest more heavily in drugs that treat

say, erectile dysfunction or hair loss, than these highly debilitating illnesses? What could the government do to address this issue?

Pharmaceutical companies invest more heavily in drugs in which there is higher potential economic profit. Because the markets for some debilitating illnesses are relatively small, pharmaceutical companies do not expect to earn economic profits from their R&D investment. The government could address this issue by subsidizing R&D costs for certain illnesses (reducing expected costs) or offering monetary awards for successful development of drugs (increasing expected revenue).

For more in-class experiment and active learning ideas, visit www.econedactive.com.