

## Tutorial 6 solution

### Activity 1

**1. What is direct vs indirect costs?**

Direct costs: directly attributed to project activities (e.g. hardware purchase, labour costs).

Indirect costs: cannot be directly attributed to project (e.g. energy costs, rent).

**2. What is sunk cost?**

Sunk cost: money spent in the past that cannot be recovered.

**3. What are tangible and intangible costs (or benefits)?**

Tangible cost/benefit: can be measured (cost of feasibility study).

Intangible: difficult to measure (e.g. increased customer satisfaction).

**4. Why is estimating effort difficult in IT projects?**

- Inexperience
- Done too quickly
- Bias to underestimating

Come back to this question after the other activities are already covered.

**5. What are the different techniques used in creating cost estimates? Give an example of each.**

*Answers will vary.* For example providing new laptops for 100 people, one possible response for each type of estimating techniques would be:

- **Analogous estimate:** You could research similar organizations that recently purchased about the same number and type of laptops.
- **Parametric estimate:** You could decide on key factors, such as the basic category of laptop required and other requirements, and estimate costs using those parameters. For example, you might estimate that the laptops would cost about \$2,000 each and that another \$500 per unit would be required for support costs.
- **Bottom-up estimate:** You could determine detailed hardware and software requirements, training, and support costs to create an estimate.

## Activity 2

### Main Assumptions

# hours spent	150
# postcards made	5,000
# postcards mailed	4,000
Registration fee / person	\$ 5.00
Credit card fee / person	\$ 24.00
Printing fee / postcard made	\$ 0.40
Mailing fee / postcard mailed	\$ 0.25
Beverages and lunch cost / person	\$ 25.00
Class handouts cost / person	\$ 30.00
Charging fee / person	\$ 600.00

### Projected Revenue

# people	10	20	30	40	50	60
<b>Revenue</b>	\$ 6,000	\$ 12,000	\$ 18,000	\$ 24,000	\$ 30,000	\$ 36,000

### Projected Expenses

#### Variable costs

Registration	\$ 50	\$ 100	\$ 150	\$ 200	\$ 250	\$ 300
Credit card processing	\$ 240	\$ 480	\$ 720	\$ 960	\$ 1,200	\$ 1,440
Beverages and lunch	\$ 250	\$ 500	\$ 750	\$ 1,000	\$ 1,250	\$ 1,500
Class handouts	\$ 300	\$ 600	\$ 900	\$ 1,200	\$ 1,500	\$ 1,800
<b>Total variable costs</b>	\$ 840	\$ 1,680	\$ 2,520	\$ 3,360	\$ 4,200	\$ 5,040

#### Fixed costs

Room fee	\$ 500	\$ 500	\$ 500	\$ 500	\$ 500	\$ 500
Registration setup fee	\$ 400	\$ 400	\$ 400	\$ 400	\$ 400	\$ 400
Postcard design	\$ 300	\$ 300	\$ 300	\$ 300	\$ 300	\$ 300
Postcard printing	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000
Postcard mailing	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000
<b>Total fixed costs</b>	\$ 4,200	\$ 4,200	\$ 4,200	\$ 4,200	\$ 4,200	\$ 4,200
<b>Total costs</b>	\$ 5,040	\$ 5,880	\$ 6,720	\$ 7,560	\$ 8,400	\$ 9,240

<b>Projected Profits</b>	\$ 960	\$ 6,120	\$ 11,280	\$ 16,440	\$ 21,600	\$ 26,760
<b>Value of personal time / hour</b>	\$ 6.40	\$ 40.80	\$ 75.20	\$ 109.60	\$ 144.00	\$ 178.40

### *Activity 3: Earned Value Management*

1. a.

- Cost variance =  $EV - AC = \$20,000 - \$25,000 = -\$5,000$
- Schedule variance =  $EV - PV = \$20,000 - \$23,000 = -\$3,000$
- $CPI = EV / AC = \$20,000 / \$25,000 = 80\%$  or .8
- $SPI = EV / PV = \$20,000 / \$23,000 = 87\%$  or .87

b) The project is over budget and behind schedule

c)  $EAC = BAC / CPI = \$120,000 / .8 = \$150,000$

The project is performing worse than planned since the new estimate to complete it is \$30,000 more than planned.

d) The estimated time to complete the project =  $12 \text{ months} / .87 = 13.8 \text{ months}$ . The project is projected to take 1.8 months longer than planned.