Assignment #4

Exercise #1

Your firm designs PowerPoint slides for computer training classes, and you have just received a request to bid on a special project to produce the slides for an 8-session class. From previous experience, you know that your firm follows an 85 percent learning rate. For this contract, it appears the effort will be substantial, running 50 hours for the first session. Your firm bills at a rate of $100/hour and the overhead is expected to run a fixed $600 per session. The customer will pay you a flat fixed rate per session. If your nominal profit margin is 20 percent, what will be the total bid price, the per session price, and at what session will you break even?

Possible Answer:

There are two potential answers depending on whether you used the logarithmic learning curve presented in the text (pg 119-123 in 6th ed), or the simple learning curve as shown in the lecture. Either answer will suffice if done properly. The only difference between the two is the # of hours to complete each consecutive session and the breakeven point.

#1- Simple Learning Curve

This method assumes the learning curve is applied with each consecutive session produced.

Given the information in the exercise, we can calculate the following:

1- # of hours per session
   a. This changes by 85% per session. Equation for cell B9 is =$C$8*(B9^(LOG($B$1)/LOG(2)))
   b. Total # of hours for all sessions
2- Total cost without overhead
3- Add in the overhead and calculate cost per session
4- Calculate cumulative cost
5- Calculate total bid price (this should be the cumulative cost + 20% markup (nominal profit margin))
6- Calculate price per session (Total bid price/8 sessions)
7- Calculate cumulative revenue through all 8 sessions.
8- Identify break even session (the session where revenues first surpass cumulative costs) In this case, Session #5 is break even.

See image below of excel sheet or excel sheet attached to the assignment.

	A	B	C	D	E	F	G	H	I
1	Learning Curve	85%							
2	Billing Rate	$100							
3	Nominal Profit Margin	20%							
4	First Session Time	50.00							
5	Overhead Per Session	$ 600.00							
6									
7		Session #	Hours Required	Cum Hours	Hourly Cost Per Session	Cost Per Session with Overhead	Cum Session Cost	Bid Price Per Session	Cum Revenue
8		1	50.00	50.00	$5,000.00	$ 5,600.00	$ 5,600.00	$ 4,357.55	$ 4,357.55
9		2	42.50	92.50	$4,250.00	$ 4,850.00	$ 10,450.00	$ 4,357.55	$ 8,715.09
10		3	36.13	128.63	$3,612.50	$ 4,212.50	$ 14,662.50	$ 4,357.55	$ 13,072.64
11		4	30.71	159.33	$3,070.63	$ 3,670.63	$ 18,333.13	$ 4,357.55	$ 17,430.19
12		5	26.10	185.43	$2,610.03	$ 3,210.03	$ 21,543.16	$ 4,357.55	$ 21,787.74
13		6	22.19	207.62	$2,218.53	$ 2,818.53	$ 24,361.68	$ 4,357.55	$ 26,145.28
14		7	18.86	226.47	$1,885.75	$ 2,485.75	$ 26,847.43	$ 4,357.55	$ 30,502.83
15		8	16.03	242.50	$1,602.89	$ 2,202.89	$ 29,050.32	$ 4,357.55	$ 34,860.38
16									
17									
18		Total Bid	$ 34,860.38						
19		Price Per Session	$ 4,357.55						

#2- Logarithmic Learning Curve

This method assumes the learning curve is applied every time the # of sessions produced doubles.

Given the information in the exercise, we can calculate the following:

1- # of hours per session
   a. This changes by 85% every time the # of sessions doubles. Equation for cell B9 is =$C$8*(B9^(LOG($B$1)/LOG(2)))
2- Total # of hours for all sessions
3- Total cost without overhead
4- Add in the overhead and calculate cost per session
5- Calculate cumulative cost
6- Calculate total bid price (this should be the cumulative cost + 20% markup (nominal profit margin))
7- Calculate price per session (Total bid price/8 sessions)
8- Calculate cumulative revenue through all 8 sessions.
9- Identify break even session Identify break even session (the session where revenues first surpass cumulative costs) In this case, Session #3 is break even.

See image below of excel sheet or excel sheet attached to the assignment.

	A	B	C	D	E	F	G	H	I
1	**Learning Curve**	85%							
2	**Billing Rate**	$100							
3	**Nominal Profit Margin**	20%							
4	**First Session Time**	50.00							
5	**Overhead Per Session**	$ 600.00							
6									
7		**Session #**	**Hours Required**	**Cum Hours**	**Hourly Cost Per Session**	**Cost Per Session with Overhead**	**Cum Session Cost**	**Bid Price Per Session**	**Cum Revenue**
8		1	50.00	50.00	$5,000.00	$ 5,600.00	$ 5,600.00	$ 5,171.88	$ 5,171.88
9		2	42.50	92.50	$4,250.00	$ 4,850.00	$ 10,450.00	$ 5,171.88	$ 10,343.77
10		3	38.65	131.15	$3,864.57	$ 4,464.57	$ 14,914.57	$ 5,171.88	$ 15,515.65
11		4	36.13	167.27	$3,612.50	$ 4,212.50	$ 19,127.07	$ 5,171.88	$ 20,687.53
12		5	34.28	201.55	$3,428.36	$ 4,028.36	$ 23,155.43	$ 5,171.88	$ 25,859.42
13		6	32.85	234.40	$3,284.89	$ 3,884.89	$ 27,040.32	$ 5,171.88	$ 31,031.30
14		7	31.68	266.09	$3,168.28	$ 3,768.28	$ 30,808.60	$ 5,171.88	$ 36,203.19
15		8	30.71	296.79	$3,070.63	$ 3,670.63	$ 34,479.22	$ 5,171.88	$ 41,375.07
16									
17									
18		**Total Bid**	**$ 41,375.07**						
19		**Price Per Session**	**$ 5,171.88**						

Case: St. Dismas Assisted Living Facility Project Budget Development -2: Questions 1 & 2

1- *The cost per square foot for the units is given in the text together with its standard deviation. What other areas of cost or revenue are likely to have cost uncertainty? How should these uncertainties be handled?*

Other areas of cost and revenue that are likely to be uncertain are the:

o Contingency allowances.

o Marketing costs.

o Personnel replacement costs.

o Resource costs.

o General services and administration (GS&A) costs.

o Overhead allocation to budget.

o Influences such as weather on the construction.

o Cost increases for equipment or furniture

o Labor cost increases.

To handle the uncertainty, the estimators need to gain more knowledge of the areas of uncertainty and clearly define all the assumptions that were used to determine the budget. Furthermore, they need to review the project plans thoroughly to identify areas of risk. Finally, they should ensure that they have an effective change order process in place in case there are the changes during the project. Of course, it is important that the project manager, working with the accounting department, closely monitors all of the project costs

2- *How would you suggest the team handle the issue of Dr Link's supposedly inflated medical equipment costs?*

Since these are expensive items, the CFO could recommend using a bottom-up approach to budgeting. The CFO could set up a team consisting of both experts and the differing doctors to determine the actual equipment needs and costs. This would (a) enable buy-in from both parties and (b) ensure a more accurate estimate of needs. If there is sufficient data, the CFO can also include a tracking signal to identify if bias is in the estimates.