

Ruddhi Wadadekar

OMDE 606

Assignment 2

02/22/11

1. Classify the different cost items as either fixed or variable costs.

	<b>Fixed Costs</b>	<b>Variable costs</b>
<b>1.</b>	Management	Student support
<b>2.</b>	Secretarial support	Replication and distribution
<b>3.</b>	Development Print	
<b>4.</b>	Development CD-ROM	
<b>5.</b>	Development Assignments	
<b>6.</b>	Maintenance cost	

2. Calculate the aggregate *Fixed Costs of Development* (FD) and the aggregate *Fixed Costs of Maintenance* (FM).

$$F = FD + FM$$

$$FD = 307284 \quad FM = 13200$$

$$F = \$307284 + \$13200$$

$$\mathbf{F = \$ 320484}$$

3. Calculate the variable cost per student (V)

$$\mathbf{V = \$572.13}$$

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4. Calculate the depreciation rate on a basis of the lifetime of the presentation of the project (compare Rumble Table 6.1) and charge it to each year of presentation. (You may use the format of the attached spreadsheet.)

Depreciation rate FD = \$ 51214

Depreciation rate FM = \$ 4400

5. Annulization rate FD = \$ 59576 (FD annualized over 6 years at 4.5 %)

Annulization rate FM = \$ 4802 (FM annualized over 3 years at 4.5 %)

Total = \$ 119992

6. Summarize in a short paragraph the reasons for and against Annulization.

Annualizing of costs is applied to fixed costs such as buildings or large equipments. The value does not change drastically every year. So the average cost of depreciation and the interest on underpreciated value is calculated as annualized cost .If the money given to a specific project can be used for some other purpose, then Annualization is a good option. However, if money is allocated to the fixed project, then Annulization may not be a good option.

7. Calculate the equation of *total costs* ( $TC=F+VxN$ ) using the annualized figure of fixed costs and  $N=480$

$F= 371862$      $V= 572.13$      $N= 480$

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$$TC = 371862 + 572.13 * 480$$

$$TC = \mathbf{646484}$$

8. Draw the graph of the total cost function using, as above, the annualized figure of fixed costs while N varies over the accumulated number of students (i.e. N= 150, 300, 450 etc.)

Spreadsheet Attached.

9. Calculate the equation of *average costs* ( $AC=F/N+V$ ) using the annualized figure for fixed costs and N=960

$$F= 371862 \quad N= 960 \quad V=572.13$$

$$AC= 371862/ 960+ 572.13$$

$$AC= \mathbf{242.70}$$

10. Draw the graph of the average cost function, using, as above, the annualized figure of fixed costs while N varies over the accumulated number of students (i.e. N= **80, 160,** ... etc.)

Spreadsheet attached.

11. If the student is charged the per student fee specified calculate the *break-even point*. (Use the equation  $TC=F+VxN$  and the income equation:  $I=SFxN$  (Income =Student fee x No of students). The break-even point is  $N=F/(SF-V)$ )

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**N= 371862/ (2340-572.13)**

**N=210**

12. Represent the breakeven point graphically (overlying the graphs of TC and I).

Spreadsheet attached.

13. Summarize in your own words in a short paragraph why it is believed that the TC and AC equations and the specific cost structure of DE suggests that DE may be more cost-efficient than conventional modes of educational provision.

The fixed costs in DE are initially higher as the course designing, course material production are required to set up as compared to the traditional education. As we can see from the Average Costs graph, average cost per student is initially very high but declines lowers significantly as number of students are increased.

$AC = F / (N+V)$  where F is Fixed cost, V is variable cost per student and N is number of student. Here AC is inversely proportional to number of students. Therefore AC decreases as students increase.

For traditional education, Average Cost per student cannot be lower than the Variable Cost per student; hence it becomes steady even though number of student increases. Therefore DE may be cost efficient as compared to traditional education.

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Reference:

Rumble, G. (1997). *The Costs and Economics of Open and Distance Learning* . London :

Kogan Page.