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**TCET 4140 Telecommunication Network Management**

**Professor Viviana Vladutescu**

**Project # 5, Group 4 Mansoor Baig, Dennis Trotter, Christopher Kennedy**

1. A telecommunication network was built in 2008 at a total cost of $1,650,000. Additional information is given in the accompanying table (all 2000 indices = 100).

|  |  |  |  |
| --- | --- | --- | --- |
| Cost Element | AveragePercentage of IndexTotal Brewery Cost | Index(2004) | Index(2008) |
| Labor  | 30 | 160 | 185  |
| Materials | 20 | 145 | 175 |
| Equipment | 50 | 135 | 162 |

**a.** Calculate a weighted index for network construction in 2008.

**b.** Prepare a budget estimate for a telecommunication network in 2008.

1)

1. [(30\*185) + (20\*175) + (50\*162)] / (30 + 20 + 50) = 17150/100 = 175 = I-2008

[(30\*160) + (20\*145) + (50\*135)] / (30 + 20 + 50) = 11450/100 = 114.5 = I-2004

1. C-2008 = C-2004\*( I-2008 / I-2004) = $1.650,000 \* (175 / 114.5) = 25218334.06

2. The Enterprise IT department has a network administrator team that is designing a local area network. The time required for the team to design, make all connections, set up configurations etc is 100 hours. Their improvement (or learning rate) is 0.8, which means

that as output is doubled, their time to assemble a car is reduced by 20%. Use this

information to determine

(a) the time it will take the team to design, install devices, make all connections, set up configurations, etc of the 10th LAN.

(b) the *total time* required to “put together” the first 10 LANs.

(c) the estimated *cumulative average* “put together” time for the first 10 LANs.

2)

 a) Zu = K) 100hrs.\*( = 100hrs. \* (.4765090) = 47.65 for the tenth LAN.

 = 100\*[ ++…. +]

 =100\*[1+.8000+.7021+.6400+.5956+.5617+.5345+.5120+.4929+.4765] = 100\*631.534 = 631.534 hrs. for all 10 LANs.

c) The estimated cumulative average time for all the LAN’s Cx is Tx/x = 631.53/10 = 63.153 hrs.

3. Maintenance cost for a small bridge with an expected 15 year life are estimated to be $5000 each year for the first 5 years followed by a $10000 expenditure in year 10 and $10000 expenditure in year 12. If i=12% per year what is the equivalent uniform annual cost over the entire 15 period?

PV is Present Value

P1 is year 1-5

P2 is year 10

P3 is year 12

The equivalent uniform annual cost over the entire 15 year period is about $3495.94.