Business Process Engineering

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Question No: 01

Answer:

Firstly, we have required to find the Load Distance (LD)score for the above scenario including table details as follows:

We have a LD formula:

LD_ Score (i, j) = Load (i, j) * Distance (i, j)

So, we have to find the required details like current design and proposed design distances along with the LD score to make a decision that which is better approach design as follows;

Calculation for LD of two distances:

Given		**Current Design**		**Proposed Design**	
Centres	**Load**	**Distance**	**LD Score**	**Distance**	**LD Score**
(A, B)	20	2	40	1	20
(A, D)	20	1	20	1	20
(A, F)	80	3	240	3	240
(B, C)	10	2	20	1	10
(B, E)	75	3	225	1	75
(C, D)	15	1	15	3	45
(C, F)	90	1	90	1	90
(C, E)	70	2	140	1	70
TOTAL	-	-	**790**	-	**570 (min)**

So, we already concluded that the LD of proposed design is min from the current design which is a good approach having LD of 570. It is a better design than the current one which has too much LD of790.

Question No: 02

Answer:

Firstly, we know that we already have activities along with waiting time and process time separately for each activity. Now , we have to compute the CT and CT Efficiency for which the first thing I am going to do is to find the Activity time and then we compute the CT as follows;

We have Formulas:

1) **Activity_ Time**= Waiting Time + Process Time
2) **CT** (for multiple paths) = p1T1+p2T2+.........+ pmTm= $\sum_{i=1}^{m} piTi$

Where p_i = The probability that a job is routed to path i

T_i = The time to go down path i

3) CT Efficiency= Theoretical Cycle Time / CT

So, we have a given table_ calculated;

Activity	Waiting Time (min)	Process Time (min)	Activity Time (min)
A	20	12	32
B	15	18	33
C	5	30	35
D	12	17	29
E	3	12	15
F	5	25	30
G	8	7	15
H	5	10	15
I	15	25	40
J	5	20	25
K	4	10	14

CT = 10+ 0.1 *20+ 25+0.9*24+0.15*(12+23+35) +15

= 84.1 min

For Theoretical CT we have process time as follows;

Process time= 12+0.1*18+17+0.9*30+0.15*(12+25+7) +10

= 74.4 min

Now, we compute the CT Efficiency here below;

CT Efficiency = 74.4 / 84.1

= 0.88

2nd Method:

If we don't add the two way decides values of flow chart like just take a short path of A toward B and D and then also add them with E, F and G and H because I,J,K not included in flow chart so we have following efficiency and CT below;

CT = 10+ 0.1 *20+ 25+0.15*(12+23+35) +15

= 62.5 min

For Theoretical CT we have process time as follows;

Process time= 12+0.1*18+17+0.15*(12+25+7) +10

= 47.4 min

Now, we compute the CT Efficiency here below;

CT Efficiency = 47.4 / 62.5

= 0.75

So, above already mention the details and I solved it by both ways 1st one is with all paths included in flowchart. And 2nd one is without a decision loop path only select one shortest path having 10% not 90% one.