**Critical Path Method (CPM) Analysis & Comparison with PERT and Gantt Charts**

Having the PERT chart ready in advance was helpful because it enabled me to translate lengths of time into date estimates. I used an excel sheet and added columns for the Earliest Start (ES),Earliest Finish (EF), Latest Start (LS), Latest Finish (LF), and Slack (or Float), (LS - ES or LF - EF) and that was helpful.

It took me a few moments to clarify if the CPM analysis method is a flowchart or simply a spreadsheet. Part of my confusion was how similar the PERT chart is to the CPM chart. I felt like there was a lack of example to go along with the assignment and I found it challenging to feel good about felling like I was doing the assignment correctly. It seems like a spreadsheet is needed along with a PERT chart and a CPM chart but this isn’t explicitly stated as I could tell it in the learning resources provided. I decided to use my PERT chart as a template for my CPM chart. Using the Miro board gives me the flexibility of expressing lengths of time a little more freely than I could if the lengths of time were affixed to the chart though if I were officially presenting this to a team I would likely opt for the latter.

Having a date estimate is useful, it makes the project feel more tangible and real. I like the CPM analysis for that though it did take some work to calculate everything. I decided to calculate using an excel sheet as opposed to project management software. I find that starting with a rough draft (usually in spreadsheet) form, helps make the most of project management software and serves as a useful backup source of data as well should one decide to transition away form a project management software.

Learning about the CPM also helped make the PERT chart’s utility make more sense. It makes sense to me that the PERT chart method and the CPM method of analysis were developed around the same time as they feel very similar. Both the CPM and the PERT methods can be useful in group meetings or for individuals to reference whereas the Gantt chart isn’t as well suited for this. Gantt charts may be my preferred however going through the process of using project management data in different ways is useful.

The main difference between my PERT chart and the CPM chart is that the CPM chart shows dates where the PERT chart shows lengths of time and also the calculations are generated based on the project tasks: Earliest Start (ES),Earliest Finish (EF), Latest Start (LS), Latest Finish (LF), and Slack (or Float),: (LS - ES or LF - EF) whereas PERT is based on project task lengths broken down into 3 time lengths Optimistic (O) Most Likely (M)and Pessimistic (which I prefer).

I think the date datapoints from a CPM chart would be useful to have on hand, especially during team meetings and that a PERT chart would be more useful to actually share in a group meeting. I think a Gantt chart is a bit too cumbersome to effectively present in a group setting but serves as a great document to reference for individuals. Ideally an organization would have a Gantt chart as well as at least 1 of the 2 other types of flow charts available in the company shared documents database. I think that the best order for creating these charts is: 1) Gantt 2) PERT 3) CPM. I found that having a Work breakdown structure before having a Gantt helped me create my Gantt. It’s feels like more of a creative challenge than it does a technical challenge to create a PERT chart as most of the data calculations have already been done. You can create a CPM chart from a PERT chart by essentially adjusting the time figures from lengths (i.e.:”30 days”) to dates (i.e.: “1/1/24 – 2/1/24”) and adjusting the dates based on the CPM calculations. Initially, I doubted the CPM’s effectiveness but in the end I am drawn to how well it can help bring direction to a project especially with regard to project timelines. As a project manager it’s easy to get bogged down in the numbers and the strength of timeline estimates based on PERT charts doesn’t seems to have as much factored in. I was most surprised with the CPM calculations from the Beta-Testing Phase to the Soft launch phase. According to CPM it’s only about 2 months; I find that figure a good balancing point between my estimation and the goal the team should aim for.