Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

4E1 Management for Engineers

Project Simulation – Reflective Essay

Department of Electronic and Computer Engineering

(e-Report submission)

Table of Content

Submitted by:

Rohan Taneja
19323238

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(Revised)

Introduction

The project management simulation software we worked on is designed by Robert D. Austin at Harvard Business Publishing. The task given to us is to deploy a product line as a senior manager at a California based computer peripheral Delphi Printers & Peripherals. The goal is to deploy a consumer printer (referred to as the product in the simulations) with various level of scope for each product line up and the delivery of the goal is set by management to which as a manager we compete by early delivery, keeping a balance between both project resources and the scheduling when a higher scope is decided. A variety of different approaches will be taken to achieve the management target (or a better scope) as we proceed. As for the summary putting pressure on team is expected but as a manager, I will be trying my best to keep a higher team processing rating. Also, as for the management we are competing to another company having a similar product release in 6 months of the allocated time. Our best bet is to either deploy a similar product in a shorter time frame or even a better product earlier in the market before our competitor.

1. Scenario B

The simulation started with the approach to achieve the management target with the main goal delivering the Level 3 product on the time keeping the budget lower or near about the same to expected management cost. The approach made the project end earlier keeping lower team size – outsourcing some primary tasks but due to this team processing score ended up being low and only was able to achieve 63.9 as the staff would get frustrated and confused not knowing how tasks are processing. After few more runs, I analysed a pattern that even resources are cautiously managed – the team ended up with more resource consumption for the goal to trade off the morale. So, I took on another approach by increasing the team size – taking advantage of maximum possible resources to achieve an earlier time delivery of the product and promised on stepping up from required product which adds additional score for exceeding goal. Now, that we have more resources – time constraint expected was half of what management expected it. Working with the project, the main concern was deploying earlier which came at cost of high stress on certain weeks. This rapid deployment approach with higher team size helped until there was a strict laying off by recruitment team, shrinking the team size to half – which added too much pressure on the team and work had to be outsourced at this point. So, until the budget recovered for the project the tasks were extensively sourced to third party. After 3 weeks of budget recovery, now a bigger team was possible and more skilled team would make the short delivery goal achievable by a little revision in the deadline. Also, when staff is encouraged for overtime it makes the tasks finish more and getting more input on the project in earlier phase itself.

Taking on this approach, after few more re-runs, I was able to achieve the following the score.

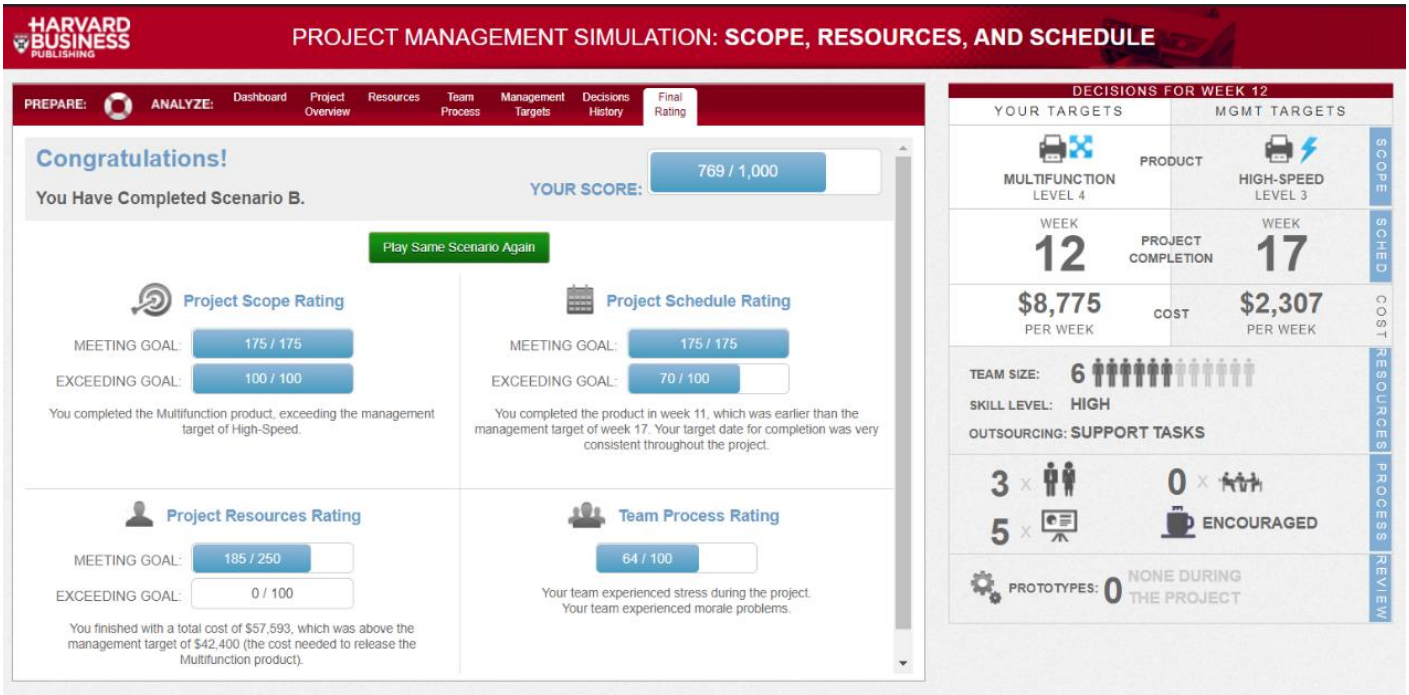

Figure b(i) – Scenario B – Final Rating

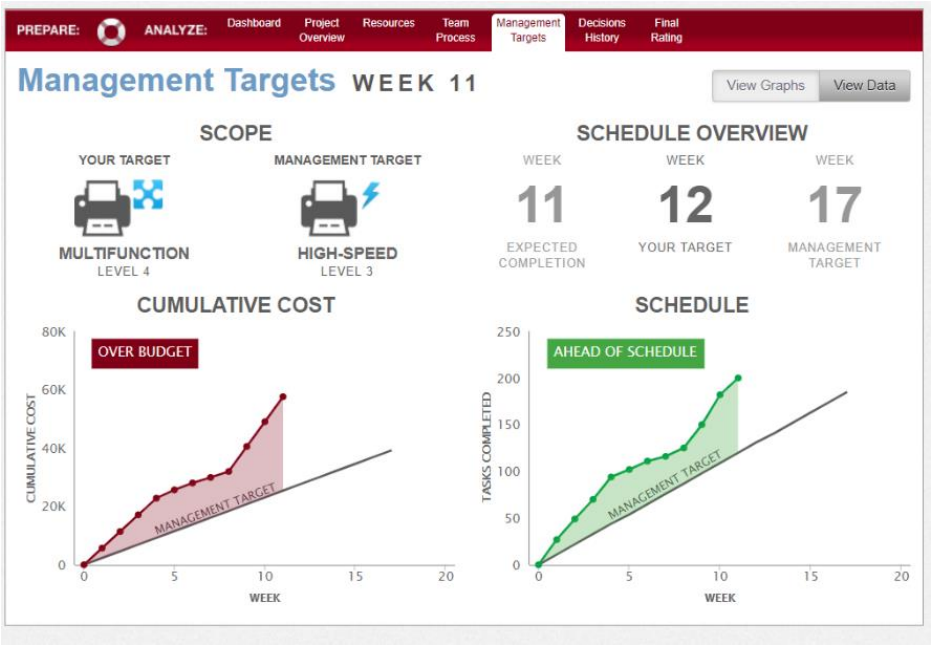

Figure b(ii) – Scenario B – Management Targets

This helped me deploy 6 weeks before the management target. Higher resources, less time and a better achieved scope to what management was looking for. For initial weeks team morale was moderate to high after laying off staff which took a shook for few weeks but after increasing the team size – the stress and workload also compensated for the resources used. As for the team process – more coordination through one-to-one coaching and daily stand-ups with the team helped keeping the morale high and lower stress levels – frequent meetings and status review helped reducing the problems faced. For the cumulative cost to schedule – it was effective in parallelly. This made earlier results possible – filling in the score for both scope and schedule at a higher cost.

The best achieved score is pointed in the figure b(i) – 76.9% depicting prioritizing schedule and better scope over the resources.

2. Scenario C

This simulation was a bit tricky. After analysis using budget efficient approach, I realised that schedule would never meet as the deadline is reduced by management to deploy the project 5 weeks earlier to what was expected. Budget friendly approach only helped meeting the goal which indeed is comparably lower scoring than meeting the schedule. Additional score for meeting the revised deadline made me try a new approach where schedule could be compensated by adding more skilled and bigger team size. To achieve this goal, putting 5 medium-high skilled team members with target set to 8 weeks initially.

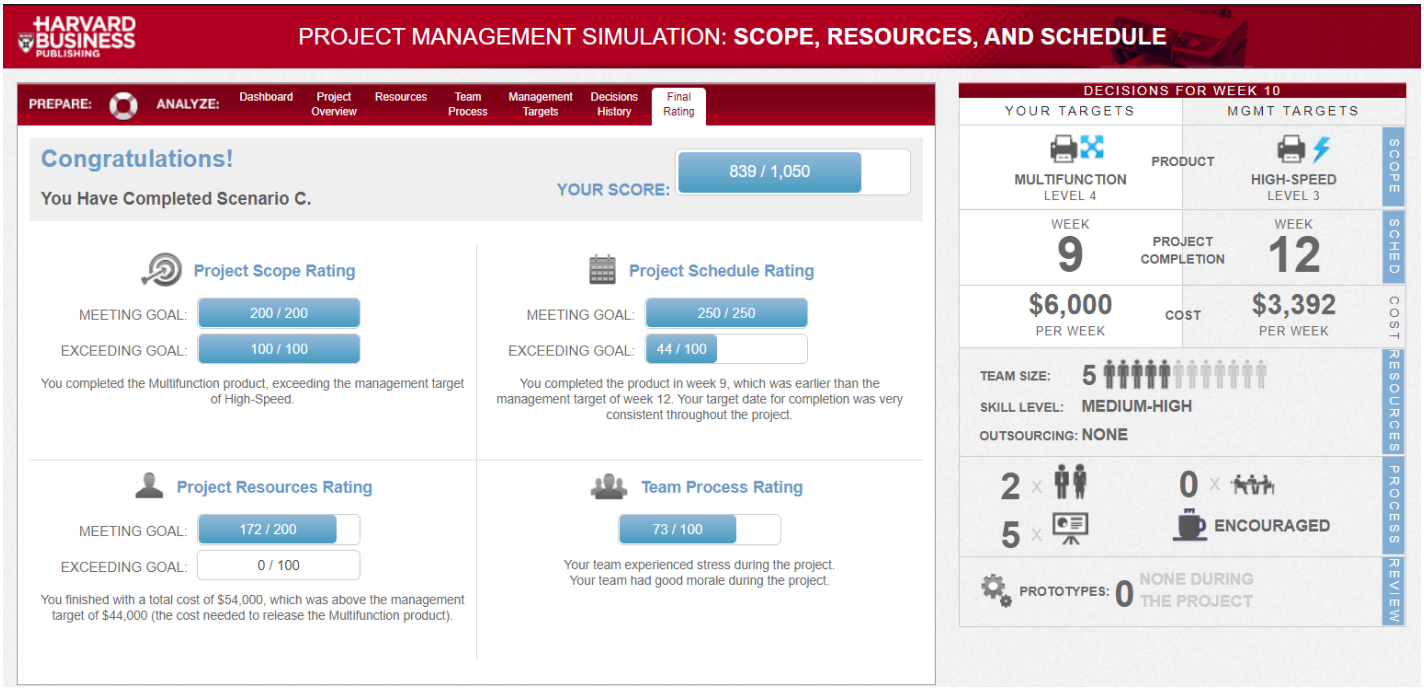

Figure c(i) – Scenario C – Final Rating

As shown, in the figure above. The approach working on one prototype gave more time to the team to actively complete the tasks. Also, first few weeks started with 6 hours of coaching and 1 daily stand-up. After properly communicating the team with project production– coaching was reduced by 2 hours to give extra time to the team for completing those tasks. Keeping the team encouraged for overtime helped reducing the stress by giving the team longer time constrain and thus made the project finish way ahead of the schedule. Despite having a large team – the resources were well managed as more output was obtained in shorter time frame.

As for the scope, for a budget friendlier approach this sounded straightforward to achieve Level 3 product but on the other hand releasing a better product with more functionality required more resources than expected goal. This was made possible compensating the higher budget involved for comparably shorter schedule and a greater scope as shown in the figure c(ii). Also, working ahead of time made sure to resolve any problems (if) faced achieving the management target wouldn't get effected as the release was earlier than expected. So, the final approach was more straightforward going high resource and shorter deadline than the initial budget oriented & longer deadline one, and resulted in a scoring higher for the simulation.

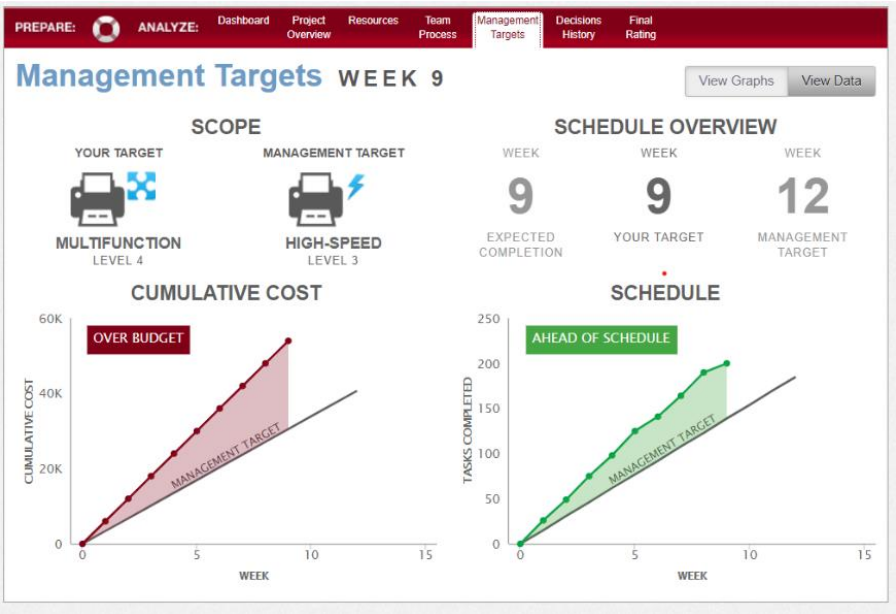

Figure c(ii) – Scenario C – Management Targets

And for the team process, the team dealt with mild stress for few weeks but showed a good morale keeping the project tasks finished actively and as planned. The coordination as mentioned through implemented communication constrains and meetings resulted to keep the status updated and well planned. In conclusion, the project had higher impact involving more team members and working ahead of time.

3. Scenario X (or F)

This simulation had a lot of inconsistency through the schedule. Again, starting with a cost first approach was helpful during initial project deployment. As the management target was already asking for best possible scope which was a fixed target to achieve. So, only option left to experiment were either resources or the schedule. There were a few complications which occurred after first few weeks of starting the project. When the project surpassed the Week 3 – the first problem occurred when the initial prototype which the team expected to work failed leaving with a lot of shortcomings and a drop in the task completed. To overcome this problem – prototyping more models helped in later project production cycle. The stress reduced as the targeted product with relevant solutions were produced during the initial phase and gave a spike to achieve the target when the competitor's product released their product description.

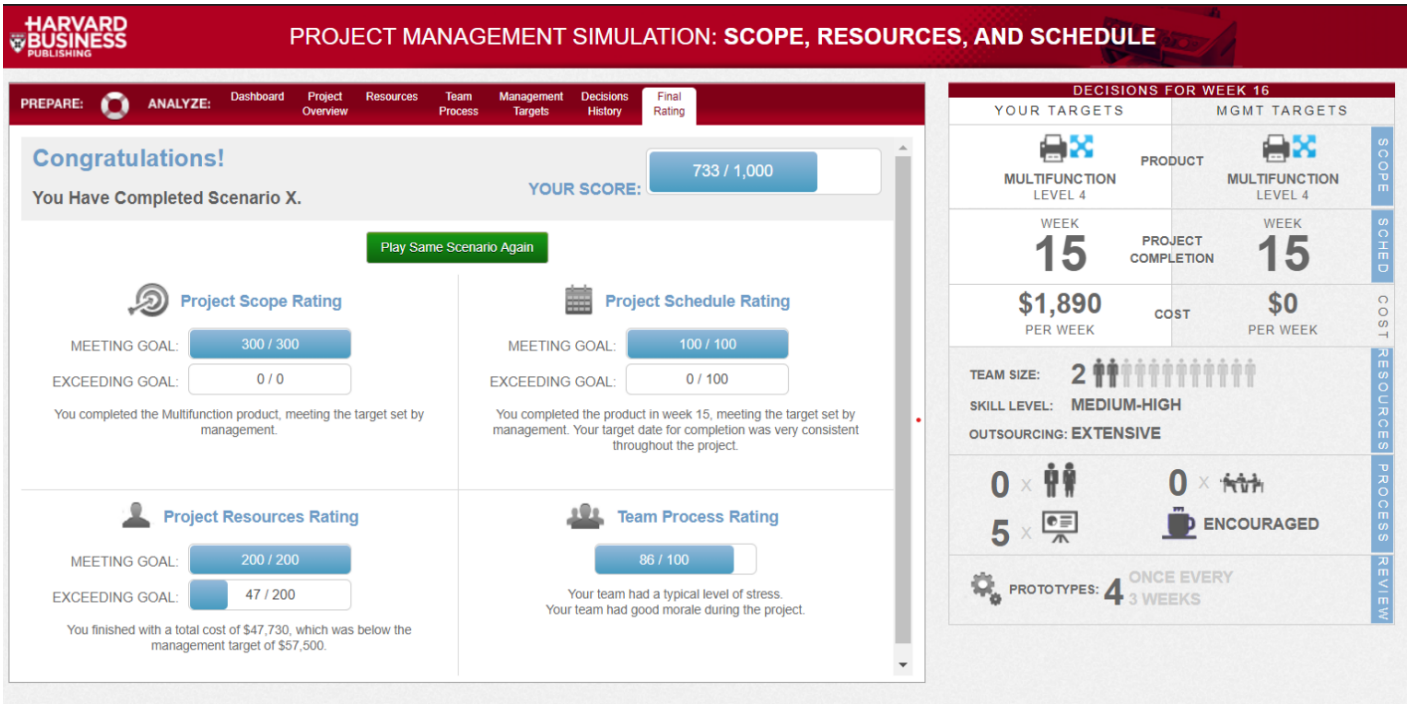

Figure x(i) – Scenario X – Final Rating

As for the figure x(i) – the project ended with a rating of 73.3% - achieving exceeding goal for the resources used. For this simulation the resource management factor had a bigger impact on the scoring parameter compared to the schedule constraint. The project in the Week 7 suffered from key members getting into an accident which led for the replacements to contribute at a lower capacity. So, till the time key members returned – the idea of extensively outsourcing the project helped with the resources available. Team process rating resulted higher due to the workload managed extensively by external sources and proper coordination on the task completion.

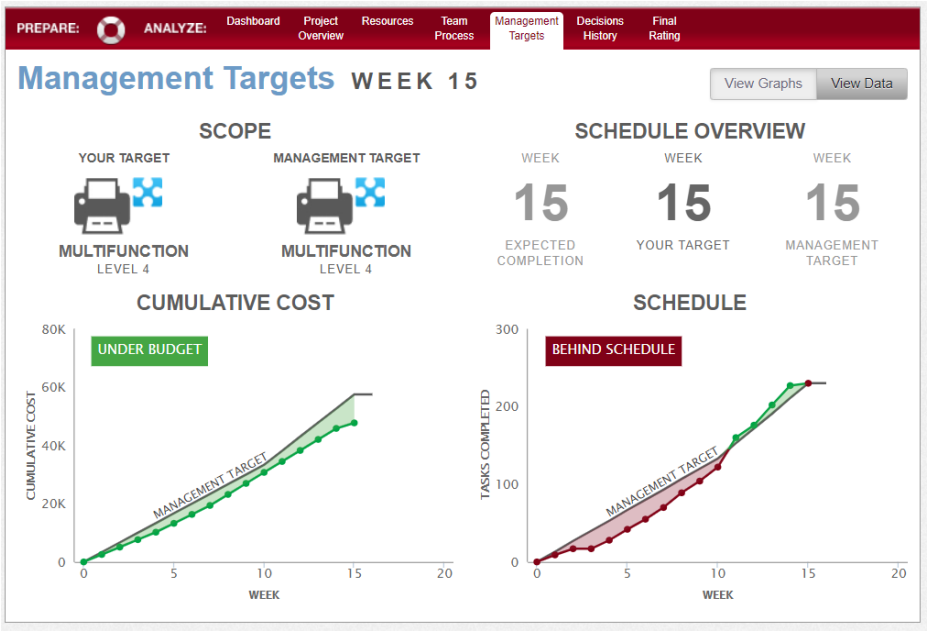

Figure x(ii) – Scenario X – Management Targets

As shown in the figure x(ii) – despite having a rough start with being on schedule, keeping a good team morale and lower stress helped completing the tasks consistently with time and overcome the prototype problem faced in the ideation phase. The budget was the key in this project – releasing the product 20% less than the management budget resulted in compensating the delivery time.

The employees were encouraged for overtime at the same time a lot of work being outsourced helped achieve the goal by having comprehensive solution set from various point of view. The deadline was firm as expected by the management – keeping the progress consistent was the goal. Also, competitor made this more achievable as the budget was bumped up by the management reaching Week 10 which helped manage resources more conveniently. Reaching the end of the project ended with supply shortage which again hindered the progress but due to actively scheduled task, even with team reduced to single person in the Week 15 resulted in timely delivery.

Conclusion

The most important thing from the simulations I have learned is – With great power comes great responsibility. The proceedings and re-runs for every simulation took place with a lot of decisions involved at every step of the project. During the planning phase – initial approach with designing a prototype and time invested in it took toll on resources. It was a hit or miss in this situation to either go with it or rather choose working straight onto the product production. Keeping a higher scope always helped in better results – as achieving more than the management target compensated for resources consumed or the time taken in production. We can never plan it all ahead of time. There is always room to make a change in decisions for scenario X a substantial change in approach was required to meet the goal as depending on the third party won't always go right. Weekly decision update based on the team process and project status helped in keeping the pace of completion uptight. As for meeting the team process – morale and stress levels were monitored weekly for which whenever team felt frustrated about the progress – more coaching and less meetings helped the team to lighten the mood. Better team morale is equal to better progress. Another important learning is as we studied during our lectures – keeping the project resources in control took a toll on meeting the target. So, to compensate this either parameters required adjustments and with every run this turned out to have a different result. In conclusion, the simulations helped me analysed variety of decision making and its consequences. Every decision has its pros and cons. Always expect the unexpected.