

MTAT.03.244 Software Economics, Fall 2016

Assignment 3: Software Release Planning

Background:

Definition of release planning projects:

Within a team, each member will assume once the role of Product Manager (PM). The PM is responsible for creating the product backlog of his/her dream product and for setting up the planning project in the ReleasePlanner™ tool (see www.expertdecisions.com).

PLEASE NOTE:

- To use ReleasePlanner™ you have to signup for a free trial account (see Quick User Guide). When creating the account, please use the e-mail address which you have used when registering for this course. For the password, use “TeamXX” where XX is the number of your team, i.e., 01, 02, 03, ..., 11, 12, ...

Tool guidelines:

For tool guidelines, please read the file “Quick user guide of ReleasePlanner™.” posted on the course wiki.

Team Organization:

Each team must consist of three (or four) students. Each team is performing release planning for one software project using incremental/iterative development. A project must have a set of features in the project backlog, different parameters for effort, weight of the stakeholders, effort estimates and resource capacities.

Each student performs EXACTLY once the role of a (coordinating) product manager (which includes voting as well) and is involved two (or three – for 4 student teams) times as a stakeholder for evaluating the features of the other projects. There are three (or four) roles to be performed in each team:

- Product manager role: Aiming at maximizing corporate value. This is when you are acting as a product manager. This includes voting (prioritizing features) as well.

- Marketing role: Aiming to influence the vote depending on what they feel current market conditions dictate.
- Customer 1 role (for teams of three and four students): Aiming to get the best feature for the use of the resulting software system.
- Customer 2 role (only for teams of four students): Aiming to get the best feature for the use of the resulting software system.

PLEASE NOTE: Please be cooperative and respond in a timely manner (i.e., within 24 hours) to the invitations received by email to prioritize the features of your teammates! Only if all votes are in, the release planning can start.

(B) Tasks to be performed:

For each release planning project (i.e., for each product), four tasks (T1 to T4 – see below) have to be performed. The maximum amount of points is 10 (8 for the Release Planning Report and 2 points for the reviews of other students' Release Planning Reports. The group's final amount of points will be the average of the three (or four) individual Release Planning Reports submitted. NB: This means that the group will automatically lose 33% of their marks, if one report is missing (in a team with three students).

T1: Data input (1 point):

Each team member's project must be set up in ReleasePlanner™, i.e., each team member is responsible to define the product features and enter the required data into the tool to create his/her release planning project. That means that there will be three (four) Release Planning Reports submitted in a team with three (four) students.

Each release planning project requires the following data to be entered into the tool:

- At least 20 features (they need to be understandable for your teammates, i.e., for each feature you must provide at least a one-sentence description). The features should be aligned with the type of product you have in mind¹.
- Distributed between at least 4 feature groups
- At least 3 dependencies between select features
- Minimum of 2 planned releases
- Minimum of three different types of resources (e.g., analysis/design, programming, testing)
- Capacity available for each planned release (per resource type)

¹ In case you have access to a real-world project, this should be your first choice!

- Effort estimates per feature and per resource type (the total effort required should exceed the total resource/capacity available for the planned releases by at least a ratio of 3:2). This means, for example, that the sum of the estimated required effort for each feature should be at least 1.5 times as much as the sum of the effort capacities available for all planned releases (e.g., Rel1 and Rel2).
- At least two planning criteria (e.g., complexity & value, or risk & value)
- Add your group members to the project as stakeholders and invite them for voting on the features (per criterion).

Hint: In order to document the set-up of your release planning project as well as the received voting data, use screenshots of the output produced by the ReleasePlanner™ tool. Make sure to provide brief explanations of the contents of the screenshots included in your report.

T2: Generate five optimized plans (3 points):

For your project, do the following:

- T2.1: Generate a set of (five) optimized release plans.
- T2.2: Compare the commonalities and differences between the plans! Interpret the results.
- T2.3: Determine the bottleneck resource(s) of Plan 1. A *bottleneck resource* is a resource that prevents additional features from being added to a release. Explain your results.

T3: Additional analysis (3 points)

- T3.1: Generate a solution that is optimal for each criterion in isolation (of you have defined more than 2 criteria, then pick only 2 criteria for your analyses). What do you see? Interpret the results.
- T3.2: Generate additional solutions for the following scenario: The five most expensive (in terms of effort) features of Plan 1 (from B2.1) actually need 20% more effort than originally planned. Explain your results.
- T3.3: For scenario T3.2, how could you achieve that the same features as of Plan 1 (of T2.1) are delivered?

T4: Discuss the overall project (1 point)

Discuss the following aspects:

- T4.1: Usefulness of the decision support tool (strengths, weaknesses), e.g., when compared to manual plan planning.

T4.2: Usability of the tool (strengths, weaknesses) and applicability of results.

T5: Review of two release planning reports (2 points)

T5.1: Make a thorough review of each of the two reports you receive and assign the number of marks (up to 8 marks) applying the following criteria:

- For T1.1: Check whether all data (including the votes) is provided/described in the report. Give a maximum of 1 point if everything is correct. Subtract 0.1 point for each mistake (or omission) you detect.
- For T2.1: Check whether the 5 plans have been generated and are presented in the report. Give a maximum of 1 point (i.e., 0.2 points per generated plan) if everything is correct. Subtract 0.1 point for each small mistake (or omission) you detect.
- For T2.2: Check whether differences and communalities of the 5 generated plans are sufficiently well presented and discussed (interpreted). Use your judgement to decide what “sufficiently well” means. Give a maximum of 1 point if everything is correct (e.g., max. 0.5 points for presenting/describing the differences/communalities and max. 0.5 points for the discussion/interpretation). Subtract 0.1 point for each small mistake (or omission) you detect. Give 0 (out of 0.5) points if the discussion/interpretation is missing or completely wrong. Give 0 (out of 0.5) points if differences/communalities are not described or completely wrongly described.
- For T2.3: Check whether the bottleneck resource(s) has/have been identified correctly and the explanation is sufficient/clear/correct. Subtract 0.1 point for each small mistake (or omission) you detect. If the explanation is missing or completely wrong, give 0 (out of 0.5) points. If the bottleneck resources are missing or complete wrong, give 0 (out of 0.5) points.
- For T3.1: Check whether the new plans (optimizing for two select criteria in isolation) have been produced and the differences to the original plan and between the two new plans have been pointed out. Give 0.5 points for each criterion-specific plan if everything looks good. Give 0 points for each missing criterion-specific plan. If a criterion-specific plan is presented and discussed but not sufficiently well described/discussed then subtract (per criterion-specific plan) 0.1-0.3 points according to the seriousness of the flaw identified.
- For T3.2: Check whether the new plan has been generated. Give a maximum of 1 point if everything is correct. Subtract 0.1-0.5 points for mistakes (or omissions) you detect depending on the number and seriousness of the mistakes/omissions. Give 0 marks if no new plan has been generated or the plan is completely wrong.

- For T3.3: Give a maximum of 1 point if the proposed solution is there and sufficiently well described and everything is correct. Give 0 marks if no solution is presented or the presented solution is completely wrong. Subtract 0.1-0.5 points for mistakes (or omissions) depending on the number and seriousness of the mistake/omission.
- For T4.1: Give 0.5 points if a discussion is provided and reasonable. Give 0 marks if no discussion is provided or the provided discussion is not reasonable at all. Subtract 0.1-0.3 points if the discussion is there but is too shallow or has minor flaws.
- For T4.2: Give 0.5 points if a discussion is provided and reasonable. Give 0 marks if no discussion is provided or the provided discussion is not reasonable at all. Subtract 0.1-0.3 points if the discussion is there but is too shallow or has minor flaws.

NB: In your review, for each task, justify your grading, i.e., say why you gave 0 points, or maximum points, or you made subtractions of points from the maximum.

NB: I will grade your reviews according to the following criteria: completeness (all elements of the report have been graded) & thoroughness (= level of detail and correctness).

(C1) Submission of Release Planning Report:

What to submit:

Prepare one PDF document answering all questions formulated for tasks T1 to T4. Please explain and justify your observations (if applicable). In addition, please enclose screenshots, graphs and other artifacts from the tool (if applicable), with the relevant answers. Remember that each student is requested to perform voting his/her teammate's projects in a timely manner (in the role as a stakeholder).

When to submit: Due date is Tuesday, Dec 06, 2016 at 23:59 – **This is a sharp deadline. Late submissions will not be looked at and you will receive 0 marks.**

How to submit: Go to “Submit” on the course wiki page. Select “Assignment 3 – Release Plan” and submit your report.
Note: Each student must submit his/her report individually.

Format: PDF file.

(C2) Submission of Reviews:

What to submit:

Prepare one PDF document containing your detailed reviews (Task T5) showing the marks for each of the tasks T1-T4 separately (with justification) per reviewed report. The document should contain the reviews of both reports you received. Make sure that you clearly state to which report each of your reviews refers.

When to submit: Due date is Monday, Dec 12, 2016 at 16:00 – **This is a sharp deadline. Late submissions will not be looked at and you will receive 0 marks.**

How to submit: Go to “Submit” on the course wiki page. Select “Assignment 3 - Reviews” and submit your report. Note: each student must submit his/her review report individually.

Format: PDF file.