COVER PAGE

SS ZG622 – Software Project Management

2023-24 Semester I

Individual Assignment #1 (10 marks)

[Software Project Estimation]

*I certify that this report submitted towards the Software Project Management course assignment is my own work. I also certify that I have not copied the work of other students or the material from any other sources (books, online documents, etc.) and/or other students’ work.*

*I understand that if this report scores a similarity score above 50% then zero marks will be awarded for this assignment.*

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**1 - Real-life Scenario**

*Notes:*

* *four or five pages long; written entirely by you*
* *anonymize names of the company and project(s) in the description*
* *must be a real-life scenario from the current company (or any previous company where you were employed)*
* *follow the outline given below*
* *delete all the text presented in italics from your submission*
* *you are expected to collect relevant and related information from project managers/team leaders of the projects*
  1. **Company and the projects:**
* **Company XYZ** – is a healthcare and well-being company with a mission to help people live healthier lives and help make the health system work better for everyone.
* A subsidiary of the company, ABC, delivers care aided by technology and data, empowering people, partners, and providers with the guidance and tools they need to achieve better health.
* **Project Polaris** – is a critical health-care administration platform that manages product definition, employer case installation, member management, pricing and claim adjudication.
* The project is organized into domains that allow different users to manage individual parts of the business. The different domains/modules are used as building blocks that work together to form one integrated system. A user is given permissions to view or configure the different domains.
* I am part of IT Quality team and I manage system integration testing, UAT, End-to-End testing and regression testing of Polaris project.
* These different types of testing involve collaboration with other upstream and downstream applications.
* The team follows agile methodology for the project. Multiple domain teams are involved in development and local branch testing of the features.
* Separate testing features are created to combine development features as per functionality.
* In this assignment, I will discuss software effort estimation for testing features.
  1. **Software Effort Estimation**
* Software effort estimation is the process of forecasting the amount of effort in story points and hours required to complete a project from start to finish.
* In our organization, as part of agile process, software is delivered in PIs (Program Increment). Each PI consists of 5 sprints of 10 days each.
* As a quality lead, I am involved in assessing the time and cost required for testing the features being delivered per PI.
* **Approach** - For Software test estimation, bottom-up approach is followed.
* Effort is estimated in terms of testing features and story points for each user story in the feature.
* A story point is a unit that measures the amount of work required in testing a user story.
* Features are further split into one or many user stories.
* Every testing feature & user story are analyzed and based on the complexity, & tester experience, story points are added at user story level.
* **Technique** – We follow T-Shirt sizing technique for assigning story points to the features.
* In T-Shirt sizing technique, story points are added to user stories, and the total story points are used in the form of T-shirt sizes at feature level:
  + Extra-Extra-Small (XXS)
  + Extra-Small (XS)
  + Small (S)
  + Medium (M)
  + Large (L)
  + Extra-Large (XL)

|  |  |
| --- | --- |
| **Feature Size** | **Story Points** |
| XXS | 5 |
| XS | 13 |
| S | 20 |
| M | 40 |
| L | 80 |
| XL | 160 |

* 1. **Typical results:**
* In the above steps, each story point amounts to 8-10 hours.
* 1 resource has around 65 hours capacity per sprint (6.5 hours a day \* 10 days = 65 hours)
* 1 resource has 65 hours \* 5 sprints = 325 hours of capacity per PI.
* Based on the total effort estimated for PI vs available capacity, we are able to conclude if our testing team can meet the demand in upcoming PIs.
* Software effort estimation exercise is done for future PIs to verify demand vs capacity.
* If demand (estimated effort required) is high as compared to available capacity, we present a case to leadership asking for more resources or manage the work so as to accommodate the available capacity.
* If demand is less as compared to available capacity, we discuss with product owner to take up extra work such as defects in backlog, tech debt stories, or share the available resources with other teams where demand is high.
* Please see below grid as example:

|  |  |
| --- | --- |
| **PI46 - Final** | **Points** |
| **SIT Demand** | **304.00** |
| **SIT Capacity** | **275** |
|  |  |
| **Automation Demand** | **80** |
| **Automation Capacity** | **100** |

* 1. **Challenges:**
* Estimations are generally based on tester experience, which may not always result in correct values.
* Different users may come up with different estimates.
* After initial estimation, requirements may change, leading to re-estimation. In agile, this becomes a continuous process which is time consuming.
* Team may also get redirected to work on urgent incoming tasks such as production defects, that can impact the estimated effort.
* These may result in under-estimation or over-estimation, leading to loss to business.

**References**

1. Project documents