Van Lang University

Software Measurement and Analysis course

**Productivity Measurement**

**Version number:** 1.0

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1. **INTRODUCTION**

*The purpose of this document is* *to specify the method to be measured productivity of team. The document develops a set of metrics that will assess fairly productivity of my team and* *provide some resolution to be used in improving productivity in future work.*

*The data provided in this assignment which is obtained from the Log Effort of team is collected weekly. In this Effort Log, team has added Team Assignment columns from the beginning this course to assess more accurate the productivity of team. Productivity of the team is evaluated based on team effort to develop team assignment in weekly, include to Team Assignment columns and Team Meeting*

*The metrics are provided and collected below that have been approved to apply by team. And, the team assumes that the difficulty of weekly tasks is the same because it has been shown through the size (Number of task) of the team assignment.*

*The below table is described in rules in data collection:*

|  |  |
| --- | --- |
| **Rule ID** | **Description** |
| R.01 | #Number of tasks = Number of team meetings + Number member tasks |
| R.02 | # Total actual time is described by hour, Total actual time = Actual time meeting + Actual time that member develops tasks |
| R.03 | Mark for Assignment team provided by Director |

1. **TEAM PRODUCTIVITY MEASUREMENT**

The GQM chart is described in this section to identify the metrics which uses to determine the productivity of team. Questions and answers are used to assess productivity in this GQM chart that developed by team.

|  |  |
| --- | --- |
| **Goals** | Evaluate the productivity of team in one week |
| **Question** | What is the workload that team developed in one week? |
| **Metric** | # number of tasks in one week |
| **Question** | What is the actual time (hour) completed all the tasks by team? |
| **Metric** | # Total actual time in one week |
| **Question** | How many will the average number of tasks be completed in an hour? |
| **Metric** | # of tasks/ Total actual time in one week |
| **Question** | What is the value (mark) that team get after completing all tasks in one week? |
| **Metric** | # mark of team assignment |

*Table\_1: Productivity QGM chart table*

The following is a table which to specify the method to be collected data to evaluate productivity of team in one week.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Required Data** | **Source** | **Rule** | **Periodic** | **Metrics** |
| # Number of tasks | Weekly Plan | R.01 | Weekly | Average # number of completed tasks in an hour |
| # Total actual time | Effort Log | R.02 | Daily |
| # Mark of assignment | Director | R.03 | Weekly | # Mark of team assignment |

*Table\_2. Data collection table*

The following is a table which to specify data collection to evaluate productivity of team in weekly.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week ID** | **Number of detailed tasks** | **Workload** | **Time (hour)** | **Number of tasks/hour** |
| Week 1 | 5 Meeting + 11 Member task | 16 | 25 | 0.64 |
| Week 2 | 2 Meeting + 2 Member task | 4 | 6.5 | 0.61 |
| Week 3 | 5 Meeting + 11 Member task | 16 | 31 | 0.51 |
| Week 4 | 5 Meeting + 4 Task Member | 9 | 18 | 0.50 |

*Table\_3. Number of tasks/hour table*

The following is line chart which to show the average number of tasks is completed and marks is gotten by team in under an hour for weekly.

*Figure\_1. Number of tasks/ hour line chart*

*Figure\_2. Mark line chart*

**Evaluation:**

*According to the number of task/ hour and mark line chart, the average number of tasks that are made in an hour that is from 0.5 – 0.6 (Figure\_1) and the average mark of team is 8 – 9 (Figure\_2). Therefore, the productivity is stably, but it also trends to decrease.*

*Number of completed tasks in an hour and mark in the week also reduced by the amount of workload in each week also increased (Table\_3).*

*Additionally, change in schedule also affects the team process working, team meetings take place in the environment that has the noisy, and communication of team member is not good.*

1. **INDIVIDUAL PRODUCTIVITY**

**Hiền Nguyễn**

|  |  |  |  |
| --- | --- | --- | --- |
| Week | Actual | Number of task | Number task/ hour |
| 1 | 8 | 14 | 1.75 |
| 2 | 3.5 | 9 | 2.56 |
| 3 | 5 | 13 | 2.6 |
| 4 | 6 | 19 | 2.1 |

**Evaluation :**

* Workloads of each week are not the same, its change wide. The Second Week is very little Workload. But the Forth Week is very much.
* Productivity of Hien is excellent, increase front up in three week, but week 4 is other. So :
* Week 4 have two Team Assignment and two Lectures. So, Hien cannot achieve the same productivity such as begin.

**Mừng Nguyễn**

|  |  |  |  |
| --- | --- | --- | --- |
| Week | Actual | Number of task | Number task/ hour |
| 1 | 2.5 | 9 | 3.6 |
| 2 | 4 | 9 | 2.25 |
| 3 | 5 | 11 | 2.2 |
| 4 | 3 | 10 | 3.33 |

**Evaluation :** Individual productivity is maximum on week1 , week2 and week 3 is the same, week 4 is increase

**Reason** : Number of task of each week are not the same, it was changed by size of exercise. On every week, requirements are difficult, the time is limited.

**Dương Nguyễn**

|  |  |  |  |
| --- | --- | --- | --- |
| Week | Actual | Number of task | Number task/ hour |
| 1 | 4 | 9 | 2.25 |
| 2 | 8 | 9 | 1.125 |
| 3 | 3.5 | 11 | 3.14 |
| 4 | 3 | 10 | 3.33 |

**Evaluation: :** Individual productivity is maximum on week1 , minimum on week2, week 3 and week4 are increase

**Reason :** Number of task of each week are not the same, it was changed by size of exercise. On every week, requirements are difficult, the time is limited.

**Bình Nguyễn**

|  |  |  |  |
| --- | --- | --- | --- |
| Week | Actual | Number of task | Number task/ hour |
| 1 | 1.3 | 9 | 2.25 |
| 2 | 10.6 | 9 | 1.125 |
| 3 | 2 | 11 | 3.14 |
| 4 | 5 | 10 | 3.33 |

**Evaluation :**

|  |  |  |
| --- | --- | --- |
| **Week** | **Evaluation** | **Analysis** |
| 1 | Maximum productivity | - Teamwork 1 is quite simple, requirements are not so difficult |
| 2 | Minimum productivity | - Teamwork 1 and teamwork 2 are run at the same time, requirements of team work 2 are more difficult than those on team work 1, time is limited |
| 3 | Increased productivity | - Teamwork 3 have requirements that are less difficult than those teamwork 1 and teamwork2. Improved effort more than effort in week 2, time is flexible |
| 4 | Decreased productivity | -Teamwork 4 and team 5 are run at the same time, requirements are difficult, time is limited, no matter what decreased effort but did not increase productivity individual |

**Mạnh Nguyễn**

|  |  |  |  |
| --- | --- | --- | --- |
| Week | Actual | Number of task | Number task/ hour |
| 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 5 | 11 | 2.2 |
| 4 | 4 | 10 | 2.5 |

**Evaluation :**

|  |  |  |
| --- | --- | --- |
| **Week** | **Evaluation** | **Reason** |
| 1 | Not join team meeting yet | unidentified group |
| 2 | Not active in team yet | not master schedule group activities |
| 3 | Began operations in the group but not high productivity | Not familiar with group activities as well as communicate with other members |
| 4 | productivity growth but still not high | May promote the ability |

1. **PRODUCTIVITY IMPROVEMENT**

This table is described in this section to specify factor, issues affect to the productivity of team and provide solutions to improve.

|  |  |  |
| --- | --- | --- |
| **Factor** | **Issues** | **Solution** |
| People | Communication  Attitude  Morale | We improve relation between every member in team, clear communication, exact about time meeting.  Team member has top prepare team assignment at home when you implement meeting, finish all of assigned task. |
| Environment | Condition to meeting | Proposed improvements to the university about team meeting |
| Process | Plan, Schedule | Schedule :   * On Saturday : start from 12 to 13 Pm * On Monday : start from 15 to 16:30 Pm * On Wednesday : Start from 13 to 14:30 Pm * On Thursday : Start from 12 to 13 Pm |