



Metrics Framework

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Revision History

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Table of Contents

1. Purpose.....	4
2. Scope	4
3. Entry and Inputs	4
3.1. Entry Criteria	4
3.2. Inputs.....	4
4. Metrics Framework.....	4
4.1. Measurement Objectives	4
4.2. Metrics Definitions	5
4.3. Metrics Analysis	5
4.4. Data Sources.....	6
5. Exit Criteria and Outputs	6
5.1. Exit Criteria.....	6
5.2. Outputs	6
6. References.....	7

1. Purpose

The purpose of this document is to define the list of metrics, definitions and their analysis techniques to be used by the projects towards meeting the objectives.

2. Scope

This process is applicable for the projects that are executed in ePathUSA.

3. Entry and Inputs

3.1. Entry Criteria

This process will start as soon as the project plan is approved, and the sprint starts.

3.2. Inputs

- Project Management Plan
- Project workbook
- Sprint Backlog
- Product Backlog
- Data Sources – Effort Logs, Defect logs, Review Reports.

4. Metrics Framework

4.1. Measurement Objectives

- Project manager will use the measurements for project planning and estimations
- Measurements will help in understanding the past performance and help the project manager in committing the objectives for the new projects
- Measurements are needed to provide visibility to the scrum master on the status of the project and help him in identifying the problems early
- Senior management would like to have the visibility on the project performance and this will be achieved using metrics
- Measurements will also help in identifying the areas of weakness and improvement opportunities.

4.2. Metrics Definitions

Metric	Definition and Formula	Data and Sources	Units
Schedule Deviation	Difference between actual end date & planned end date expressed as % of planned duration = (Actual end date-Planned end date)*100/Planned duration	Data: <ul style="list-style-type: none"> Sprint & Release <ul style="list-style-type: none"> Planned Start Date Planned End Date Actual Start Date Actual End Date Source: <ul style="list-style-type: none"> Product Backlog 	%
Effort Deviation	Difference between actual and planned effort expressed as % of planned effort = (Actual effort- Planned effort)*100/Planned effort	Data: <ul style="list-style-type: none"> Sprint <ul style="list-style-type: none"> Planned Effort Actual Effort Source: <ul style="list-style-type: none"> Effort Log 	%
Productivity	Ratio of product size to total Actual effort = Total Actual effort / Story Point	Data: <ul style="list-style-type: none"> Sprint <ul style="list-style-type: none"> Actual Effort Size Source: <ul style="list-style-type: none"> Product Backlog Effort Log 	Hr/SP
Defect Density	Ratio of total defects to the size = Defect / Story Points	Data: <ul style="list-style-type: none"> Sprint <ul style="list-style-type: none"> Defects Size Source: <ul style="list-style-type: none"> Review Log Defect Log Product Backlog 	Def / SP
Velocity	Number of Story Points Delivered within a sprint of same duration	Data: <ul style="list-style-type: none"> Sprint <ul style="list-style-type: none"> Story Points Source: <ul style="list-style-type: none"> Sprint Backlog 	SP
Rejected User Stories	The number of user stories rejected by the customer during the sprint review = Number of User Stories Rejected / Number of user stories delivered	Data: <ul style="list-style-type: none"> Sprint Status Source: <ul style="list-style-type: none"> Sprint Backlog 	%

4.3. Metrics Analysis

- Scrum Master will identify the project objectives at the beginning of the project. Objectives can be derived from the organizational objectives, customer objectives committed in the contractual agreements.
- Based on the objectives the scrum master will identify the data capturing requirements and the tools where the data has to be captured. Update the tools and data requirements in the project plan.

- Collect the data periodically, verify and validate before publishing the metrics at the sprint or project level.
- Any issues with the data have to be addressed with the help of the team.
- Analyze the metrics at the below frequency
 - Sprint end
 - Monthly (for reporting)
 - Quarterly (for reporting)
 - Release End
- Understand the significant deviations and conduct the Root Cause Analysis to identify the actions to reduce the deviations.
- Update the observations from the metrics analysis in the metrics analysis report.
- Review the metrics with the senior management once in a month during the management review meetings.
- Analyze the trends and other patterns of the metrics, few of the analysis techniques include
 - Line Chart
 - Pie Chart
 - Pareto Chart etc.

4.4. Data Sources

Below are the data sources for the metrics analysis

- Defects – Review/Defect Log and Test Report
- Schedules – Project workbook
- Efforts – Effort Log
- Size – Product Backlog (Project Workbook)
- User Stories – Product Backlog / Sprint Backlog

5. Exit Criteria and Outputs

5.1. Exit Criteria

The metrics analysis will be continued till the project closure.

5.2. Outputs

- Metrics Analysis Report
- Root Cause Analysis
- Project Workbook

6. References

- Templates
 - Metrics Analysis Report
 - Root Cause Analysis Report
 - Project Workbook
- Guidelines
 - Metrics Analysis Guidelines