Definition of the **On-Time Delivery Indicator** in Rapid Software Development

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Rapid Software Development

Develop → Release → Learn

- Git
- JIRA
- Redmine
The big picture: Q-Rapids
Definition and breakdown of the On-Time Delivery Indicator

6 steps
Step 1: Initial interviews
The need to define On-Time Delivery emerged
Step 2: Literature Review

- Time-to-Market in Software Development
- Software development time and effort
- Effort estimation in Agile Software Development
- Delivery capability in Agile Software Development
Step 3: Tentative proposal

Tentative On-Time Delivery indicator definition and its breakdown into factors and metrics
Step 4: Workshops

- Get feedback
- Add/modify/remove factors
- Vote those factors in terms of their relevance
Definition and breakdown of the **On-Time Delivery Indicator**

### Step 5: GQM Workshops

- Elicit metrics of process performance
Definition and breakdown of the On-Time Delivery Indicator

Step 6: Refining the proposal

Build-up the On-Time Delivery indicator definition and breakdown.
Definition and breakdown of the **On-Time Delivery Indicator**

**Definition:**

Capability of fulfilling the issues planned for a specific release, meeting internal and external delivery schedules.

Computed with values: [0..1]
Breakdown of the On-Time Delivery Indicator

Breakdown:

On-Time Delivery

- Issues’ Effort Estimation Accuracy
  - Accuracy of planning effort of issues
  - Percentage of issues larger than the size threshold

- Issues’ Development Status
  - Ratio of the average past velocity and the theoretical velocity of the available units
  - Ability to resolve the remaining allocated effort
  - Ability to resolve the remaining unallocated effort

- Issues’ Due Date compliance
  - Accuracy of planning issues’ due date

- Delivery Performance
  - Timely release delivery
  - Timely feature specifications delivery
  - Core component commits
  - Non-issue component commits

- Blocking
  - Blocking is actually a strategic indicator, acting as a factor impacting On-Time Delivery

Legend:
- Strategic Indicator
- Factor
- Metric
Breakdown of the On-Time Delivery Indicator

Breakdown:

How reliable the current tasks’ effort estimation is in terms of the differences between the past planned efforts and the actual tracked ones.
Breakdown of the **On-Time Delivery Indicator**

**Breakdown:**

Refers to the development status in terms of the planned tasks, the assigned and unassigned effort, the average velocity of the development team, and the remaining time until the release ending date.
Breakdown of the **On-Time Delivery Indicator**

**Breakdown:**

*Issues’ Due Date compliance*

Refers to the percentage of past due dates’ compliance.
Breakdown of the **On-Time Delivery Indicator**

**Breakdown:**

- **Delivery Performance**
  - Timely release delivery
  - Timely feature specifications delivery
  - Core component commits
  - Non-issue component commits

Constitutes metrics that measures a company’s adherence to delivery schedules
Breakdown of the **On-Time Delivery Indicator**

**Breakdown:**

- **Blocking**: Refers to the blocking situations that arise when developing. It includes
  - *Feature Definition Completeness*
  - *Delayed Tasks*
  - *Test Failing*
  - *Test Performance*
  - *Low Quality Features*
Conclusions and Future work

Conclusions:
- Definition of On-Time Delivery indicator
- Breakdown into factors and metrics

Future work:
- Evaluation using real data from industry partners
- Iterate/evolve our proposal
- A Method for assessing the indicator using Bayesian Networks
Thank you!