Avoiding the Time Trap
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Topics

The time trap
Time that does matter
What makes “task” time so special
The Time Traps

The Traditional Approach

Scope

Cost Schedule

The Agile Approach

Value

Capabilities the user finds valuable

Quality Constraints

Deliver a reliable product by adapting to customer’s needs

(cost, schedule, scope)

How is time measured?

Ordinary time/money vs. story points/velocity

How are schedules derived?

Durations based on resource availability vs. sprint/time box and team’s velocity

What do the two approaches have in common?

A derived cost is needed to answer the question, “Do I have enough money to build a minimally useful item?”

Do I have enough money?

With either approach you must account for labor. Two options are available:

• Tracking the employees’ ordinary time, which is in essence a proxy for cost
• Associating employees’ salaries with projects

While using ordinary time or tracking salaries are very useful methods for accounting and payroll purposes, they are nearly impossible to use for creating accurate estimates or precisely tracking projects.

Why?
Why Ordinary Time Doesn’t Work

Unrelated activities are included.
• Includes a mixture of activities that contribute to costs, but are not directly related to project deliverables.

Detailed estimating is difficult to accomplish.
• Accounting systems do not generally track time at the level necessary for bottom-up, detailed estimating.

Precise project tracking is not supported by the data.
• The time data captured does not support the precise tracking that knowledge workers need to be repeatedly successful.

The Traditional Time Trap

The assumption of a relationship between effort and duration is fundamental to traditional project planning and tracking techniques.
Data shows that there is no correlation between the duration of a work package and the actual effort required to complete it, for knowledge-based efforts.
The Agile Time Trap

The use of story points and velocity (number of story points achieved in a sprint) are simply proxies for cost and schedule.

- Effort is performed using an iterative, time-boxed approach.
- Past performance is used to predict how many stories points can be implemented per sprint.

Problems with relying solely on story points

- Story points and velocity are subjective measures that are calibrated by each team based on previous team performance.¹
  - Team membership changes
  - The type of work and skills required changes over time
- Estimates are biased.²
  - Not based on actual historical data
  - Number can easily be influenced
- The use of story points is not objective and cannot define a standard practice for estimation of software size.³
  - The definition of a story point varies between teams

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The Basic Planning Framework

Regardless of whether you are using a traditional, agile, or hybrid approach to planning and tracking, you need to be able to represent cost and schedule.
Time That Matters – Task Time

Task time is defined as the actual time spent working on a specific task in the plan.

To determine task time, each individual working on the team is responsible for tracking the time spent working on each specific task they are assigned in the plan.

Actual Versus Planned Task Time for Completed Projects

There is a very strong correlation between the planned and actual task time required to implement an individual work package.

This high correlation enables very effective bottom-up estimating.

Data comes from 113 different development projects, which reported their results to the SEI through its Partner Network.

All projects in the data set used the same definition of task time and planning framework.
Actual Task Time Versus Plan Task Time

The use of task time in creating accurate estimates.
It plots actual task time against planned task time, in hours, for completed projects.
It demonstrates that there is a strong correlation between the bottom-up estimates for a project and the actual task time spent on the project.

Overcoming Deficiencies

**Traditional Approach**
Task time can be used to overcome the short-comings of using ordinary time or financial information alone to determine when a project will be completed.
Once you can determine when a project will be completed using a given set of resources, you can also determine cost.

**Agile Approach**
Task time can be used in place of a subjective story points approach to provide an objective measurement which can be used as a standard estimating practice across teams and organizations.
Applying Task Hours in Agile

Using historical actual task time, a relative table can be created for estimating future work. The table organizes your historical data into categories of types and ranges. You can then refer to the table to quickly develop estimates for your user stories in your plan.

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Constructing a Relative Table

A relative table is constructed using historical data on the effort of different components or effort types that you have developed in the past. From the data:

1. Calculate the mean ($\bar{x}$).
2. Calculate the standard deviation ($s$).
The Planning Game

INSTRUCTIONS
1. Each estimator gets a set of cards.
2. The item to be estimated is identified.
3. The item is discussed.
4. Each estimator privately selects a card representing his/her estimate.
5. Once each estimator has selected a card, all the cards are turned over at the same time.

Team Velocity Using Task Hours

Using actual data, you can determine what the velocity should be for the next sprint, even with changing and part-time team members.

Specialized resources can now move between teams without having to reset velocity calculations (project team membership should still stay relatively stable in order to maintain tacit knowledge).

Time-boxes can also be variable lengths based on project/customer goals and objectives.
A sprint is a time-boxed planning period.
Each sprint begins with a detailed plan and ends with a retrospective.
The current sprint is planned in granular detail by the team as they are about to execute sprint.
Future sprints are road mapped during the initial planning by the Project Lead and PMO, but not with the detail that the current sprint is planned. Road maps evolve with the project.
Releases are project-dependent. Sprints are based on the team’s cadence, and product delivery is on demand. A sprint usually ranges from 2-6 weeks in duration.

What Makes Task Time so Special?
Task time represents the project’s value chain and ignores the other activities, which skew predictability.
A value chain is the set of tasks directly associated with a work package that is carried out to create value for the customer or end user. These are the actual tasks that are part of the team’s plan.
Effort reports apply to both support activities and primary tasks.
Task time applies only to the primary tasks of a team’s value chain.
Understanding Variability

While the cost of project members can be predictable, the amount of task time individuals are able to commit to a project’s value chain is highly variable.

Understanding the variability at the individual and team level is key in producing accurate estimates and for precise status tracking.

Task time is measured in hours or minutes. Interrupt time, or off-task time, is not included in the time measure for a task.

Off-task time is not measured or tracked since it does not contribute to meeting the stated project goals.

Why do we focus our plans only on value?

http://www.youtube.com/watch?v=zn8bOC88QY
Why do we plan our tasks?

We need to schedule our important task or else they won’t fit into the bucket.

It is not to say that if we put the big rocks in first, the pebbles will still fit around the edges. Some just won’t fit.

“Urgent” things keep coming up and these pebbles can get in the way of achieving what is important. Not everything urgent is important.

Without building a detailed plan and tracking our progress against it, the important tasks will slip due to the urgent pebbles, mandatory sand, and overflowing distractions.

NAVOCEANO Project Sponsor Survey Results

All projects in the survey used task-time and an Agile planning and tracking framework.
Summary

Understanding the dynamics of your process in a quantifiable way provides these benefits:

- Increases the accuracy of estimates
- Improves reliability of status reporting
- Raises perceived customer quality and satisfaction

Task-time is an accurate, reliable, and repeatable measure of time.

The use of ordinary time or story points does not adequately meet the intended purposes of such measures.

Questions?

Reference Article:
“Not All Time Matters: Be Sure to Count What Does.” CrossTalk, July/August 2015: