1-day Workshop
"Software Estimation by Numbers"

Introduction
The ability to accurately estimate the schedule and effort taken for a project to come in to its successful conclusion is a serious problem for software (project) managers.

It always takes longer than you think, even if you take this into account

As many software (project) managers know, this is especially true in the case of software development projects. The ability of software projects to overrun both time scales and budgetary requirements is now so notorious that it hardly bears repetition. Why is it that software projects overrun so often? Many have addressed this problem, and some factors do appear to be emerging from this searching: the importance of clearly specifying requirements and understanding the technical difficulty involved on one hand, and the avoidance of overestimated expectations what can be achieved in the available time scale with the available resources on the other hand. Estimation based on solid numbers is crucial, but poorly understood and practiced.

Estimation categories
In software project estimation, it is important to balance the relationships between effort, schedule and quality, which form the three essential aspects of the famous ”magic” triangle. It is widely accepted that simply estimating one of these aspects without considering the others will result in unrealistic estimations. It is like getting a building constructed, you need a blueprint to estimate a price for the construction, whether the blueprint is custom designed or "off the shelf". The blueprint puts in scope whether it is a house the customer wants or maybe it turns out to be an apartment complex or skyscraper that the customer really wants, hence the blueprint. Estimating software is no different, you need a blueprint. Once a blueprint is available, three top level estimation categories are available:

- Expert estimation: the estimation is based on judgmental processes.
- Analogy estimation: the estimation is based on analogous proxies.
- Formal estimation model: the estimation is based on mechanical processes, e.g., the use of a formula derived from internal and/or external historical data.

In this workshop, best practice models and techniques are presented to support the estimation process.

Target Audience
Software measurement and metrics specialists, project managers, functional managers, testers, quality engineering, developers, and other software project stakeholders involved in estimating and planning software projects.

Duration
1 day (08:30 – 17:00).

Program

1. Introduction.
    a. Schedule/effort trade-offs.
    b. Blueprints.
    c. Proxies (systems, components, function points, lines of code, story points).
    d. Confidence levels.
2. Expert estimation.
    a. Wideband Delphi.
    b. Planning poker.
3. Formal estimation models.
    a. Putnam SLIM Model.
    b. COCOMO II.
    c. Others.
4. Lessons learned from industry.
    a. Rules of thumb.
    b. Benchmarking data.
    c. Best practices.

Focus on exercices and quantitative techniques
This workshop is taught through (limited) lecture and interactive discussion. Actual examples from the software industry are utilized to make the information relevant. The focus is on team exercises (one case study), in which learned skills are practiced. The emphasis of this workshop is on *quantitative* techniques that allow the attendees to transition the skills learned in this workshop to their own work environments. Solutions to all exercises will be provided.

Customization
Software Benchmarking Organization can also customize this workshop or any of our other standard workshops or develop unique software engineering, quality and project management workshops to meet your exact in-house training needs and specifications. For example, class exercises can be tailored to include actual examples from your organization in order to make the workshop more relevant to your environment.

Further information
In case you are interested in this workshop, contact Dr. Hans Sassenburg:

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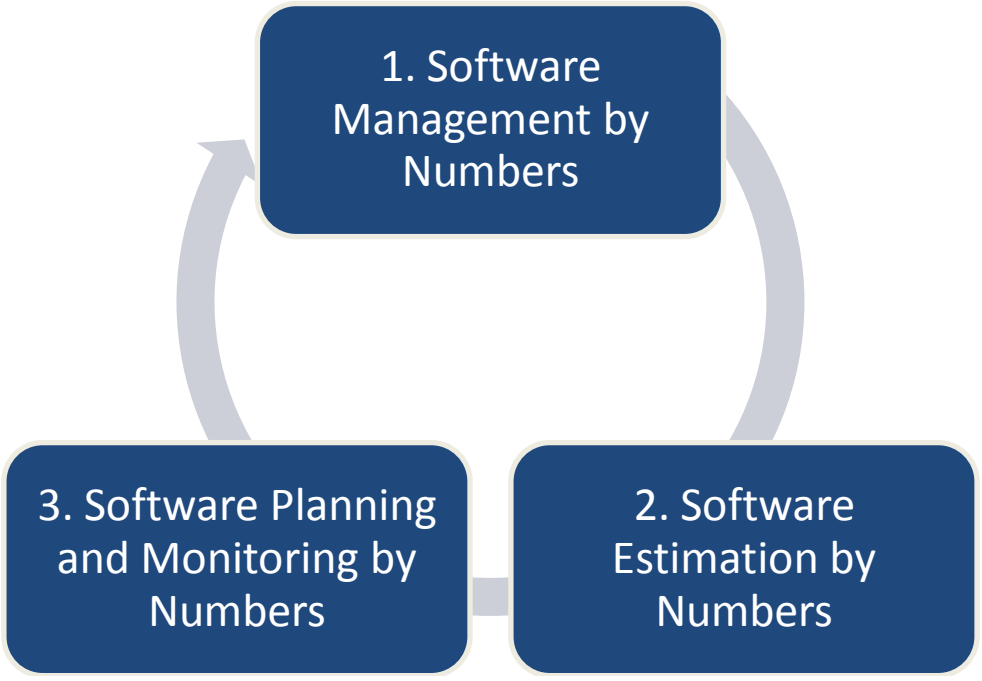
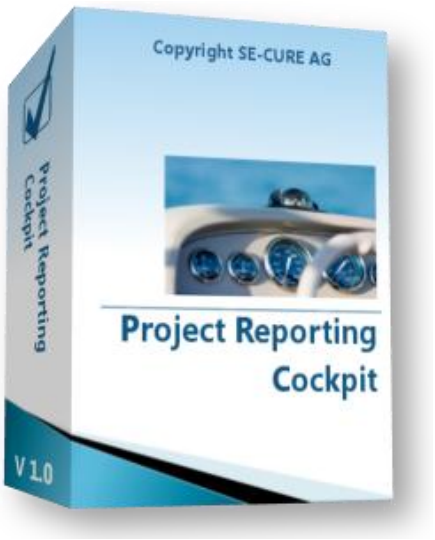
In the series **"Software Management by Numbers"**, 3 powerful workshops are available. The preferred order of taking these workshops is given below; however each workshop can also be taken independently.



These workshops are based on two developed products by SE-CURE AG:



This product enables you to define and monitor a set of Key Performance Indicators (KPIs) for your software project. Historical, target and actual values are displayed in overviews and charts, from which information can be consumed at a glance.

This product provides powerful instruments to project managers and measurement specialists to plan, monitor and control their projects, using the same Key Performance Indicators.

Download a free trial version at www.se-cure.ch/Downloads.html!