

SBO

SOFTWARE BENCHMARKING

Software Benchmarking Organization

"You can't fix what you refuse to measure"

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1. Software Industry Today

- ▶ The software industry still isn't doing a very good job at managing by the numbers

“Oftentimes, software projects are managed by just three metrics: schedule/effort and critical defects found during testing”

- ▶ This is a flatland view for a multi-dimensional terrain problem: "flying a plane using only a watch and a fuel gauge"
- ▶ Other metrics must be in the equation as well, representing what will be built (product scope/quality) and how it is built (process)

Problem Statement

*“You can’t fix
what you refuse to measure”*

- ▶ When quantitative information is missing:
 - Management is like an emperor without clothes: decisions are not based on facts
 - Improvement initiatives result in satisfying standards/models instead of tangibly improving measured capability

What is Improvement?

- ▶ It is NOT about
 - Satisfying a model/standard
 - Implementing the next hype
- ▶ It is about becoming
 - More predictable (performance)
 - Faster (efficiency)
 - More effective (scope)
 - Better (quality)

Questions ...

- ▶ Did you ever go after the world's next model/standard or hype?

If yes, how (much) did it help you?

- ▶ Are you able today to tell what targeted, actual and historical values of your main KPIs are?

If not, would you be interested to know?

Being Successful

- ▶ **Knowing the (performance) capability** of your organization through the collection and analysis of historical data
- ▶ **Making credible commitments** in terms of what will be delivered when against what cost
- ▶ **Managing development** once it starts; this requires earned value management, activity distribution management and effective scope and quality management
- ▶ **Analyzing the impact of new initiatives** by assessing how capability is affected in which areas; this prevents organizations from chasing hypes

2. Key Performance Indicators

“Getting too little or too much data is easy, identifying and extracting the relevant data and converting it to meaningful information for everyone is the challenge”

KPIs versus Metrics

- ▶ **KPIs (= meaningful information)** are meant to gauge progress toward or benchmark against vital, strategic objectives usually defined by upper management
- ▶ **Metrics (= data)** at a lower detail level are measured attributes of a process or a product
- ▶ The goal of KPIs is to foster greater visibility and faster reaction to opportunities and threats, hereby enabling informed decision-making

KPI Characteristics

1. A KPI echoes organization goals
2. A KPI is decided by management
3. A KPI provides context
4. A KPI creates meaning on all organizational levels
5. A KPI is based on legitimate data
6. A KPI is easy to understand
7. A KPI leads to action

KPI Selection Criteria

- ▶ Must support **project management** in analysing, planning and monitoring projects
- ▶ Must inform **management** where a project stands and in what direction it is heading
- ▶ Must support **business units** in measuring their capability improvement over time
- ▶ Must support **organisations** in comparing/benchmarking business units

















Questions to Answer

- ▶ **Project Performance**
 - What is the prediction of the performance of the project?
- ▶ **Process Efficiency**
 - How efficient is the development process?
- ▶ **Product Scope**
 - How large and stable is the scope of the planned effort in terms of features and size?
- ▶ **Product Quality**
 - What is the expected quality of the resulting product (reliability and maintainability)?

Derived KPI Categories

- ▶ **Project Performance (= how predictable?)**
 - Cost, schedule, staffing rate, productivity
- ▶ **Process Efficiency (= how fast?)**
 - Effort distribution (Cost of Quality model)
- ▶ **Product Scope (= how much?)**
 - Feature size, deferral ratio, size, re-use
- ▶ **Product quality (= how well?)**
 - Complexity, test coverage, removal efficiency, defect density

Typical Maturization Effects

Project Performance		Product Scope	
Schedule		Feature size	
Budget		Deferred	
Staffing rate		Size	
Productivity		Re-use	
Process Efficiency		Product Quality	
Core		Complexity	
Support		Test coverage	
Prevention		Defect density	
Appraisal/rework		Removal efficiency	

Key Points to Remember

- ▶ Assessing real software performance capability requires a **multi-dimensional view**
- ▶ Compliance to process models and/or standards is **no guarantee** for high performance capability, although it may help (pragmatism versus bureaucracy)
- ▶ The set of Key Performance Indicators allows measuring **real performance capability** improvements over time and benchmarking

Improving using KPIs

- ▶ Once management starts actively using such KPIs, projects are forced to bring and keep not only their measurement process in place, but many other processes as well ...
 - Requirements Management
 - Project Planning
 - Project Monitoring and Control
 - ...

Another Capability Model ...



3. Software Benchmarking Organization

- ▶ The **Software Benchmarking Organization** (SBO) was founded in 2009
- ▶ The objective is to provide benchmarking services to the software industry
- ▶ The **portfolio** includes assessments, workshops, and supporting products
- ▶ The portfolio is brought to the market through an international network with **accredited partners**

Founding Partners

- ▶ **SE-CURE AG (Switzerland)**
 - Has developed the best practice KPI set, based on research and industrial case studies
 - For more information: www.se-cure.ch
- ▶ **SolidSource BV (Netherlands)**
 - Has developed a powerful infrastructure to measure the best practice KPI set
 - For more information: www.solidsourceit.com

Why Benchmarking?

- ▶ For many years the lack of readily available benchmark data blinded software managers to the real economics of software
- ▶ Many (process) improvement initiatives resulted in satisfying standards/models instead of tangibly improving measured capability
- ▶ Now that data on thousands of projects is available to the software industry, it is becoming possible to make solid business decisions about software development practices and their results in terms of productivity and quality
- ▶ Benchmarking is a technique that makes use of external comparisons to better evaluate current performance and identify possible actions for the future
- ▶ As such, it is an important instrument to drive improvement efforts

Objectives

- ▶ Gain insight into an organization's capability by identifying the strengths and weaknesses of its current performance
- ▶ Relate these strengths and weaknesses to the benchmarked KPI set
- ▶ Prioritize improvement plans
- ▶ Focus on improvements (correct weaknesses that generate risks) that are most beneficial to the organization given its current performance level
- ▶ Compare performance against industry values (average, best-in-class)

4. Portfolio

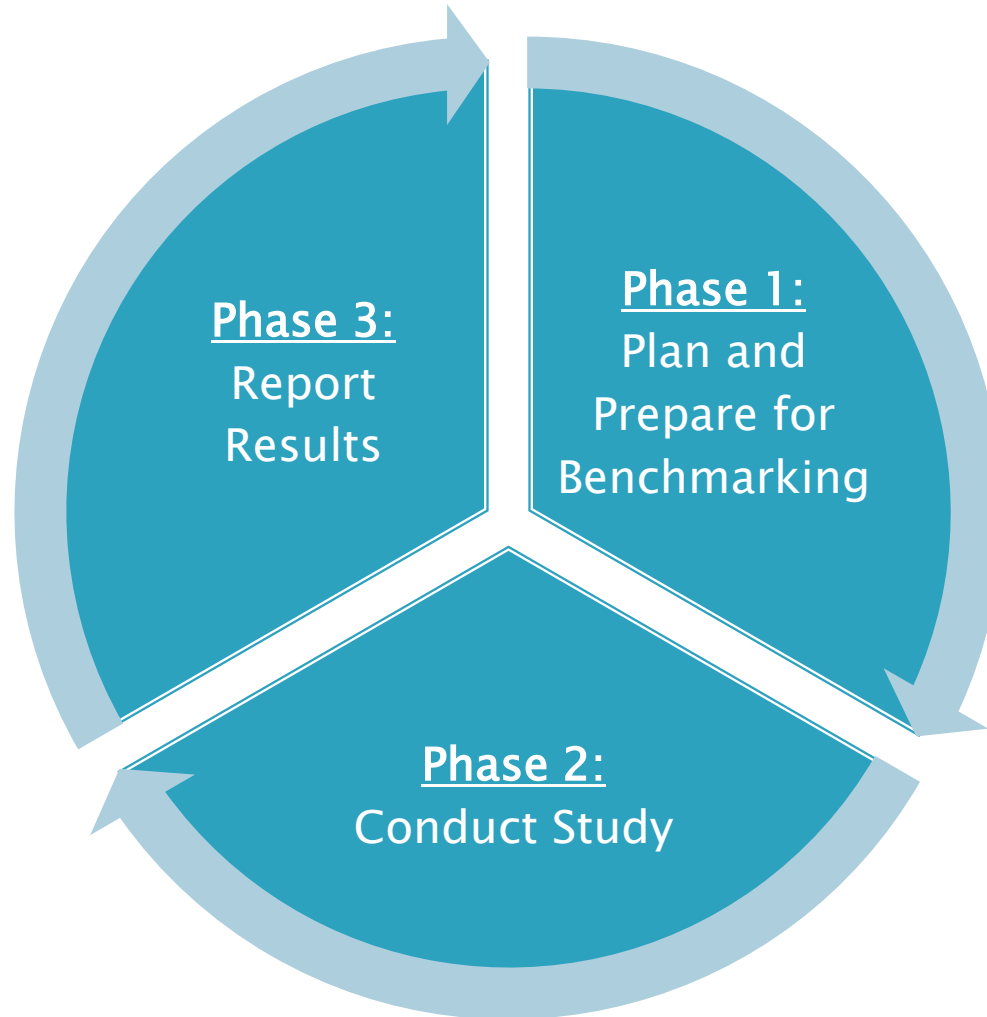
- ▶ Benchmarking studies
- ▶ Workshops
- ▶ Supporting Products

Benchmarking Studies

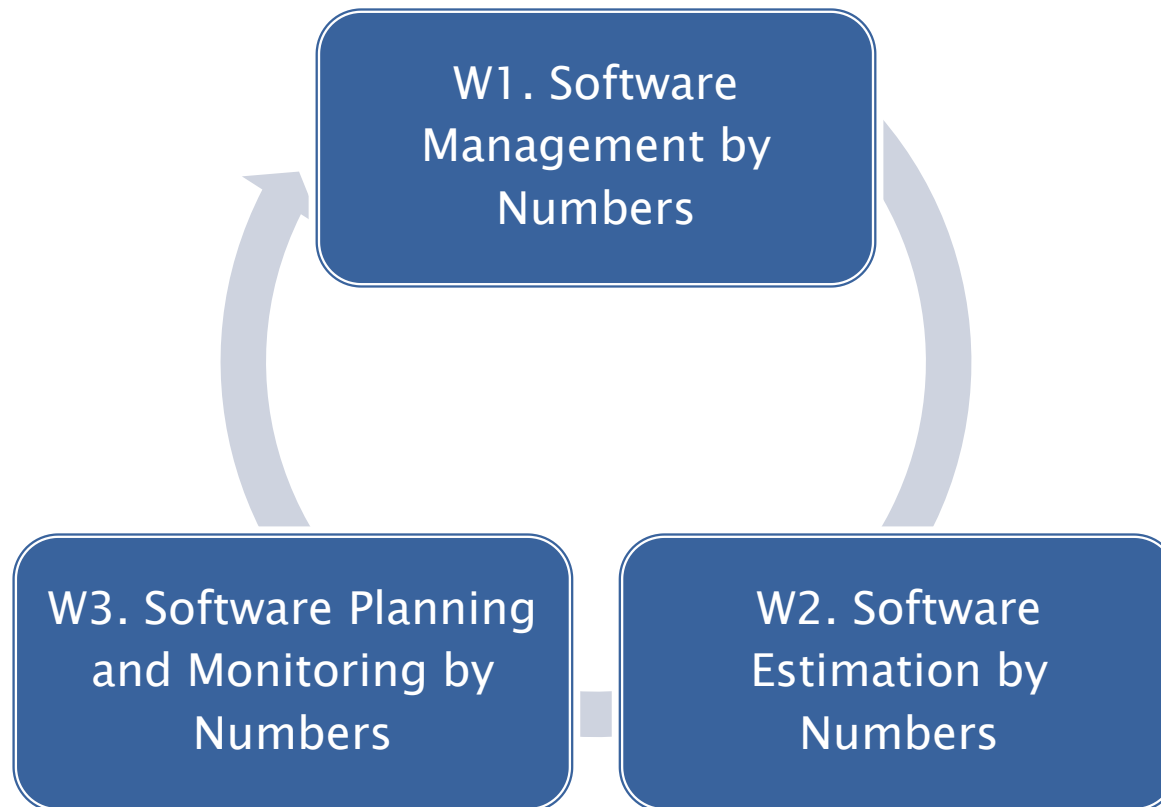
- ▶ In these on-site studies, an organization's capability is analyzed in quantitative terms and benchmarked against industry values (average, best-in-class)
- ▶ The established baseline can be used to derive improvement areas and to measure progress made over time

- ▶ Planned studies:
 - Q4.2009 – Q2.2010: Embedded software industry (NL)
 - Q1.2010 – Q3.2010: Finance industry (Western Europe)
 - Q2.2010 – Q4.2010: Automotive industry (G, F, I)

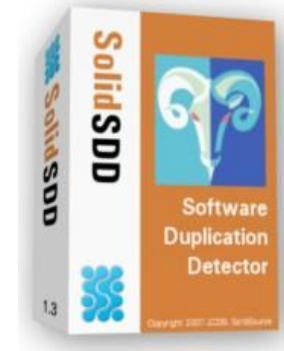
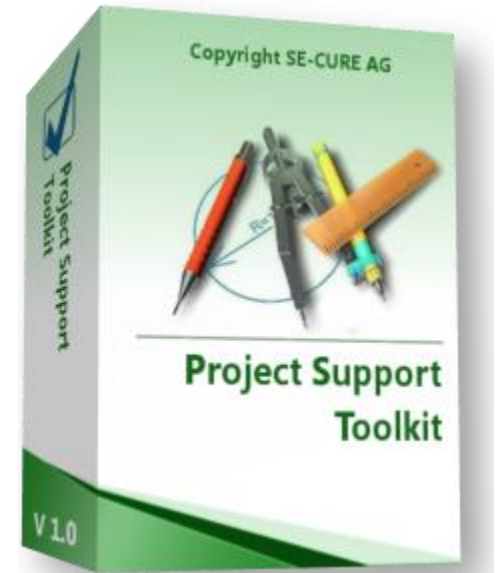
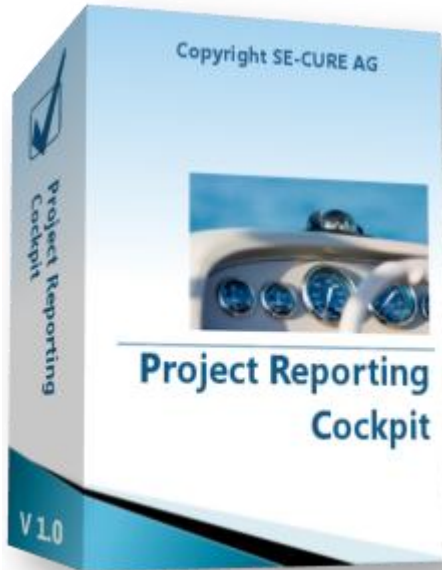
Phases



Workshops



Supporting Products



5. Partner Network

- ▶ The **Software Benchmarking Organization** is currently setting up a global network of accredited partners
- ▶ Each partner will get **non-exclusive rights** or **exclusive rights** exploiting the portfolio in specific regions and/or markets after **successful accreditation**
- ▶ By establishing and maintaining an **excellent reputation**, each partner will highly benefit from generated business in the partner network
- ▶ Focus in 2010: **Europe**
- ▶ Focus in 2011: **USA, Asia**

6. Further Information

- ▶ In case you are interested collaborating with us, contact Dr. Hans Sassenburg:

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