Software Non-functional Assessment Process
SNAP
Beta Test Awareness

SNAP Project Team
&
ITPC
May 2011
Topics

- The Assessment Practices Manual (APM) – Beta version
- Q&A sheet – and how it will be used during Beta
- Feedback on Manual – Purpose & Form
- Beta Testing – Purpose & Form
- Next Steps and Milestones
SNAP started in 2008
Main goal was to create an Assessment Practices Manual based on the SNAP framework (see ITPC website under ifpug.org).
Board has approved and endorsed the work on SNAP
A lot of volunteer work – both project team and reviewers – THANKS FOR THAT
- And thanks to Bonnie from CPC for helping us with the layout
## Current SNAP Team

<table>
<thead>
<tr>
<th>Subteam</th>
<th>Name</th>
<th>Role/Workgroup</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMEA</td>
<td>Janet Russac</td>
<td>Board Sponsor</td>
</tr>
<tr>
<td>Chair ITPC</td>
<td>Dan Bradley</td>
<td>ITPC – Chair</td>
</tr>
<tr>
<td>Vice Chair ITPC</td>
<td>Christine Green</td>
<td>ITPC – Vice Chair □ TSF Project Manager</td>
</tr>
<tr>
<td>SNAP PM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>America¨</td>
<td>Wendy Bloomfield</td>
<td>ITPC – Member</td>
</tr>
<tr>
<td>EMEA</td>
<td>Talmon Ben-Cnaan</td>
<td>ITPC – Member</td>
</tr>
<tr>
<td>America¨</td>
<td>Steve Chizar</td>
<td>Project Team Member</td>
</tr>
<tr>
<td>EMEA</td>
<td>Ashwin Krishnamurthy</td>
<td>Project Team Member</td>
</tr>
<tr>
<td>EMEA</td>
<td>Jalaja Venkat</td>
<td>Project Team Member</td>
</tr>
<tr>
<td>EMEA</td>
<td>Luca Santillo</td>
<td>Project Team member</td>
</tr>
<tr>
<td>America¨</td>
<td>Lori Holmes</td>
<td>Project Team Member</td>
</tr>
<tr>
<td>America¨</td>
<td>Charles Wesolowski</td>
<td>Project Team member □ IFPUG NEC</td>
</tr>
<tr>
<td>America¨</td>
<td>David Garmus</td>
<td>Project Team Member □ IFPUG CPC</td>
</tr>
<tr>
<td>na</td>
<td>Peter Hill</td>
<td>Project team Member □ ISBSG</td>
</tr>
</tbody>
</table>
The SNAP Assessment Practices Manual

For consideration during test
Terminology, Look and Feel

- Reuse definitions or tailor definitions from CPM 4.3
- Same type of terminology and wording as CPM
- Reuse templates, format, etc from the CPM
- Not ISO compliant in first version
- Revised following the feedback from first round of Beta

SNAP is a stand alone process and the APM is a stand alone document that can be used without knowledge of the CPM.

Beta – Do you agree on this?
SNAP Purpose

Providing a quantifiable measure for the Non-Functional size of SW products and projects
By means of documented guidance, definitions and practices about non-functional software features and related sizing criteria

In order to allow:

- Building better benchmarks
- Improving software estimation
- Quantifying technical strategies
- Communicating non-functional issues between stakeholders
Benefits

Organizations can apply SNAP as:

- A process to determine the non-functional size of a purchased application package by assessing all the portions and categories included in the package
- A tool to help users determine the benefit of an application package to their organization by assessing portions or categories that specifically match their requirements
- A tool to measure the non-functional size of a software product to support quality and productivity analysis
- A vehicle to estimate cost and resources required for software development and maintenance
- A normalization factor for software comparison.
Framework Model - The size of an application is determined by its components
SNAP is not an estimating model – it is a sizing model

SNAP is not meant to assess organizational impact
  - Such as maturity, staffing skills, etc.

SNAP sizes non-functional requirements

SNAP is a simplification of the real world. It will never be able to predict all types of non-functional requirements
SNAP Assessment Process

The Non-functional assessment process uses a series of questions grouped by categories to measure the size of non-functional requirements for the development and delivery of the software product.

- Categories are divided into sub-categories
- Within the sub-category, an SCU (Snap Counting Unit) is identified
- Questions are used to define the complexity of each SCU

The process can be used for Development Projects, Enhancement Projects, Maintenance Activities, and Applications.
SW Non-functional Assessment Process

1. Determine Assessment Purpose and Scope
2. Associate Non-Functional Requirements to Categories and Sub-Categories
3. Identify the SCUs
4. Determine the complexity of the SCU
5. Calculate the SNAP size of the SCU
6. Calculate the non-functional size

SCU ~ SNAP Counting Units
Assessment Scope

- Defines the set of non-functional user requirements to be included in the assessment
- Is determined by the purpose for performing the non-functional assessment
- Identifies the non-functional assessment categories and sub-categories that will be included in the non-functional size measurement to measure the size of non-functional requirements for the development and delivery of the software product
- Could include more than one application
Purpose of Non-Functional Assessment

- Determines the type of non-functional assessment and the scope of the required assessment to obtain the non-functional size
- Influences the positioning of the boundary between the software under review and the surrounding software
- Influences the partitions defined within the boundary

Note: The Purpose, Scope and Logical Application Boundaries need to be consistent between the FPA and SNAP process
Boundary (or Application Boundary)

- Is a conceptual interface between the software under study and its users
- Defines what is external to the application
- Indicates the border between the software being measured and the user
- Acts as a ‘membrane’ through which data processed by transactions pass into and out from the application
- Is dependent on the user’s external business view of the application; is independent of non-functional and/or implementation considerations
- FPA and SNAP is using same set of boundaries

Beta – Take care with boundary - document
Partition

A *partition* is a set of software functions within an application boundary that share homogeneous assessment criteria and values.

Within a boundary, partitions:

- Encompass all software functions that constitute the application being assessed
- May cooperate between themselves in order to provide complete software functions to the application user
- Shall not overlap

SNAP definition to ensure the technical view.

Beta – Document your view on Partition?
More about Partitions

A partition:

- May be used to meet non-functional requirements.
- Requires development effort, that may not be reflected when sizing the functional aspect of the project / product, using FPA.
- Can be sized using SNAP categories and sub-categories.
- Might coincide in simple cases with the overall application.

When identified, separate partitions may require different evaluations of categories and sub-categories. Different evaluations may be combined in order to provide the overall non-functional assessment for the whole application being assessed.
Definition:

- A Category is a group of components, processes or activities that are used in order to meet the Non-Functional requirement.
- A Sub-Category is defined as a component, a process or an activity executed within the SNAP Counting Unit (SCU), to meet the Non-Functional requirement.

Categories do not replace or redefine non-functional requirements; they define how these requirements are met.
Categories and subcategories

1. **Data Operations**
   - Data Entry Validations
   - Logical and Mathematical Operations
   - Data Formatting
   - Internal Data Movement
   - Delivering Functionality by data configuration (Added)

2. **Interface Design**
   - UI Changes
   - Help Methods
   - Multiple Input Methods
   - Multiple Output Formats

3. **Technical Environment**
   - Multiple Platform
   - Database Technology
   - System Configuration
   - Batch Processing System
   - Multiple Technologies

4. **Architecture**
   - Mission Critical (Real Time System)
   - Component Based Software Development (CBSD)
   - Design Complexity
Q/A Spreadsheet
Q/A Spreadsheet

- Will be a live document during the Beta Test
- If you have questions to any part of the test sent us the question using the spreadsheet
- We will update the Q&A spreadsheet and sent out new versions as we receive them and answer them
- Expect a couple of days for turn around on questions
Share your thoughts and comments with SNAP community

http://www.linkedin.com/groups?home=&gid=1854919&trk=anet_ug_hm
SNAP APM Feedback Spreadsheet
Purpose of SNAP APM Feedback

  - There is some general questions on one worksheet
  - Your additional feedback on a second worksheet
- The process
- The wording
- The examples
- etc…
Follow the process

- Use the feedback spreadsheet for review comments
- Use the drop down list for all your feedback
  - Chapter and Section
  - In addition
    - x - General Feedback
    - x- Mistakes found several places
- Consolidate the feedback in your company
- Only one feedback on APM per company
SNAP Beta Test Spreadsheets
Beta Test Spreadsheet

- **Purpose:** Capture project data regarding non-functional requirement
  - General project data – to classify the project and capture general information
  - SNAP Assessment:
    - Answer the assessment questions, as defined at the header of each column
    - Assessment questions are sorted by categories and sub-categories
    - Add the effort (estimated, planned or actual) to complete the task

- **One spreadsheet per project**
  - *Do NOT put your company name or own name any place in the tool for confidentiality purposes.*
General Tab – SNAP Information

<table>
<thead>
<tr>
<th>SNAP Assessment Scope, Purpose and Boundary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please fill the colored cells</td>
</tr>
</tbody>
</table>

**Scope of the project.**
Tell us about your project – what is it about – for whom – technology - etc.

**Other fields are SNAP process fields – scope, purpose, boundary and Partition**
### General tab – General information

Please fill in the colored cells

<table>
<thead>
<tr>
<th>What type of project is this project?</th>
<th>Project Implementation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Project:</td>
<td></td>
</tr>
<tr>
<td>What type of lifecycle is used?</td>
<td></td>
</tr>
<tr>
<td>Are Function Points used to measure the functional size?</td>
<td>What was the primary technology used to build/enhance the software; i.e., that used for most of the build effort</td>
</tr>
<tr>
<td>Count Approach:</td>
<td>Was it used for the entire project?</td>
</tr>
<tr>
<td>Industry:</td>
<td>Specify here if &quot;other&quot;:</td>
</tr>
<tr>
<td>Architecture</td>
<td></td>
</tr>
<tr>
<td>What type of software application has the project produced, or is enhancing</td>
<td></td>
</tr>
</tbody>
</table>

 Fill in the general information for all projects.

Size is not mandatory – but could really help the team in setting directions for FP and SCU together.
### General tab - Metrics

#### Project Metrics

Please fill the colored cells

<table>
<thead>
<tr>
<th>Requirement elicitation:</th>
<th>Quality Assurance:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software architect:</td>
<td>End User Training:</td>
</tr>
<tr>
<td>User Interface design:</td>
<td>Documentation:</td>
</tr>
<tr>
<td>Graphic Art / Design:</td>
<td>IT System administration:</td>
</tr>
<tr>
<td>Development/ Programming:</td>
<td></td>
</tr>
<tr>
<td>Other: (Please specify below):</td>
<td></td>
</tr>
</tbody>
</table>

**What procedure, if any, was used to record effort spent on in the project?**

**Other: (Please specify):**

**Has all the work done been included in the effort figure?**

**How would you rate the quality of the work effort data?**

**FP counting standard:**

**Functional Size, Adjusted:**

**Value Adjustment Factor: (See Table):**

**Functional Size, Unadjusted:**

**Added Functionality:**

**Changed Functionality:**

**Deleted Functionality:**

### Project Effort

**Total project effort `**

**Units**

<table>
<thead>
<tr>
<th>Effort assigned to functional requirements</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**After which of the following activities was this Function Point count performed:**

**What training had the function point counter undergone?**

---

**Your Project’s Conversion rate (hours/weeks/months):**

**Hours per week:**

8

42

**Days per month:**

21

**Conversion Units:**

Please update values

---

Data needs to be completed in order to receive the ISBSG benchmark report

Directly related to ISBSG benchmark data
**SCU Definition:**

SCU=The Functional Elementary Process

<table>
<thead>
<tr>
<th>SCU Description / ID</th>
<th>SCU=The Functional Elementary Process</th>
<th>Data Entry Validation</th>
<th>Number of data elements used for validation</th>
<th>Number of nesting levels</th>
<th>Additional parameter Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example 001</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

**Sub-category name. Click on it to see the definition**

**Definition of SNAP counting unit**

**A placeholder for your input**

**When asking “number of...” - insert a number. Other fields have valid values**

One line per SCU

Assessment question or parameter to count

When asking “number of...” - insert a number. Other fields have valid values
Effort will help us to convert the parameters into size, with the understanding that more effort is correlated with more SNAP points.

<table>
<thead>
<tr>
<th>No.</th>
<th>SCU Description / ID</th>
<th>Value</th>
<th>Unit</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Example 001</td>
<td>1</td>
<td>man*hours</td>
<td>Estimated</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>3</td>
<td>man*weeks</td>
<td>ROM</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>2</td>
<td>man*days</td>
<td>Actual</td>
</tr>
</tbody>
</table>
Instructions in assessing the 5 projects during Beta Test

- Assess using the categories and sub-categories as if there were no other options.
- When all 5 projects have been assessed, give us your definition for any additional categories or sub-categories.
  - Use a 6th Beta test spreadsheet to document and assess any additional categories or sub-categories.
  - Recommendations for changes to existing categories and sub-categories are welcome as a part of the review of the manual.
ISBSG and confidentiality of your data
Confidentiality

- Main focus is on the SNAP Beta Test data
- All spreadsheet will be sent to IFPUG
- When received the spreadsheet will be given a number
- IFPUG will keep information of number and spreadsheet
- If a project is valid for benchmark report – ISBSG will contact you
Next Steps
During Beta Test

- Q/A will be sent out as we update the spreadsheet
Ratings for the sub-categories

- Detail ratings and SCU measures will be developed as a part of the Beta Test
- The assessment results will be used to calibrate the final model
- Projects will report their scoring in the Beta Test Spreadsheet
The SNAP Team needs some time to process the information and review feedback.

We will forward you a copy of the final manual and a copy of the final calibrated model.

We will forward to you a report related to benchmark starting point for the combination of SNAP & FP (if there are sufficient data points).
High-Level Schedule…

Subject to change due to process of data material

<table>
<thead>
<tr>
<th>Second Iteration</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iteration #2 starts</td>
<td>2011.05.01</td>
<td>2011.05.31</td>
</tr>
<tr>
<td>Assign Beta testers to Iteration 2</td>
<td>2011.05.15</td>
<td>2011.06.01</td>
</tr>
<tr>
<td>Send out material for review</td>
<td>2011.05.15</td>
<td>2011.06.01</td>
</tr>
<tr>
<td>Receive Beta test result &amp; APM Feedback</td>
<td>2011.06.01</td>
<td>2011.06.15</td>
</tr>
<tr>
<td>Review and Beta test consolidation and statistical analysis</td>
<td>2011.06.15</td>
<td>2011.08.15</td>
</tr>
<tr>
<td>Review &amp; Beta testing closed</td>
<td>2011.08.15</td>
<td>2011.08.15</td>
</tr>
</tbody>
</table>

This means that we need your feedback no later than 15th of June
How to sent feedback...

- Please send the APM feedback directly to Christine.Green@Hp.Com [subject: ITPC SNAP – APM Feedback)

- Please send assessment tool filled in to IFPUG@IFPUG.ORG [subject: SNAP]  
  - See Beta test submission document for details...
Questions

Contact
The ITPC
Dan Bradley - msb_2@sbcglobal.net
Christine Green – Christine.Green@hp.com