<u>S</u>oftware <u>N</u>on-functional <u>A</u>ssessment <u>P</u>rocess

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

ITPC SNAP

- ‣ 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

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

4

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

Beta – Do you agree on this?

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

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

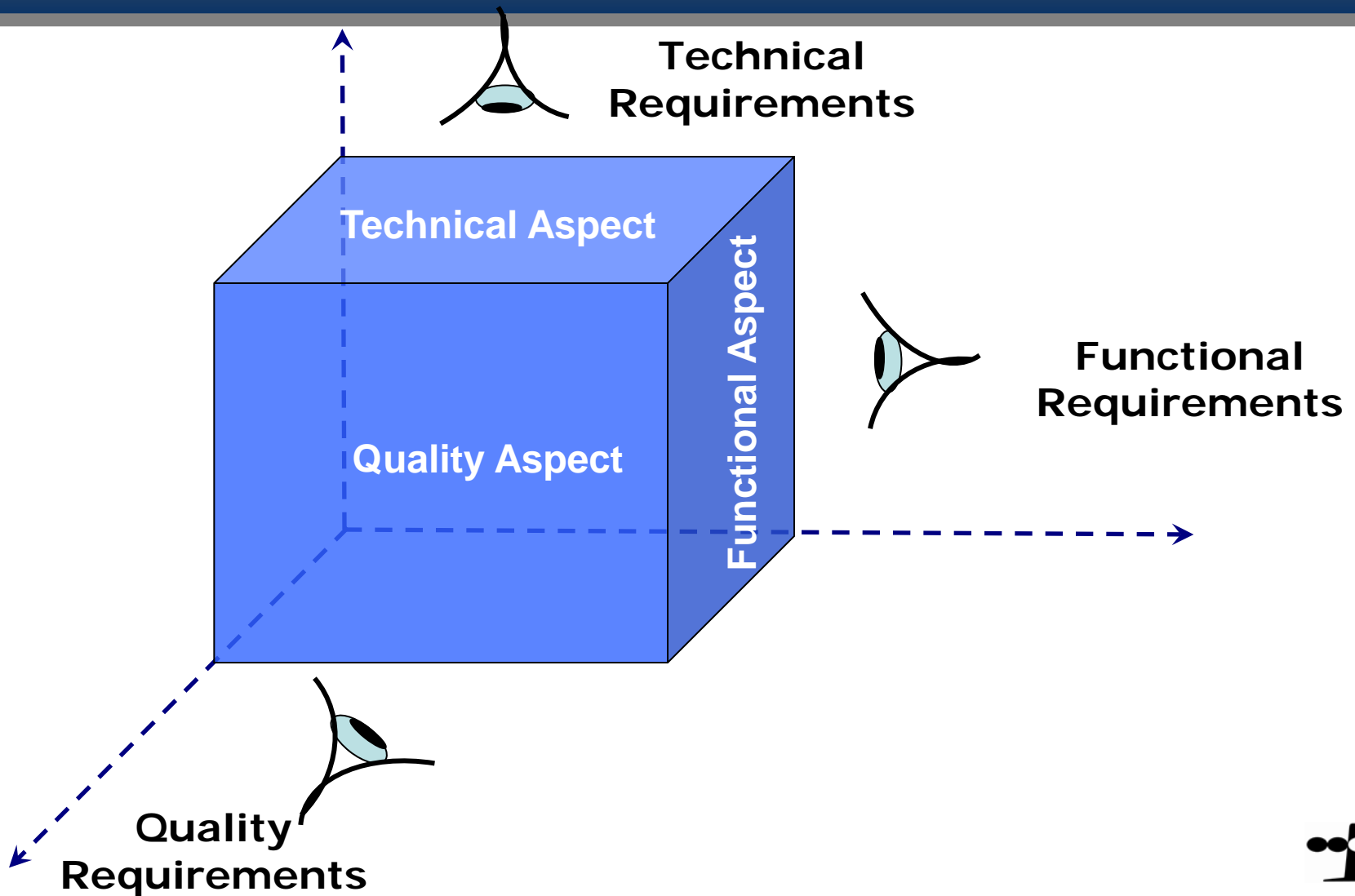▸ Communicating non-functional issues between stakeholders

7

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

Technical Requirements

Functional Requirements

Quality Requirements

Technical Aspect

Functional Aspect

Quality Aspect

Beta – A few things regarding SNAP

▸ **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**
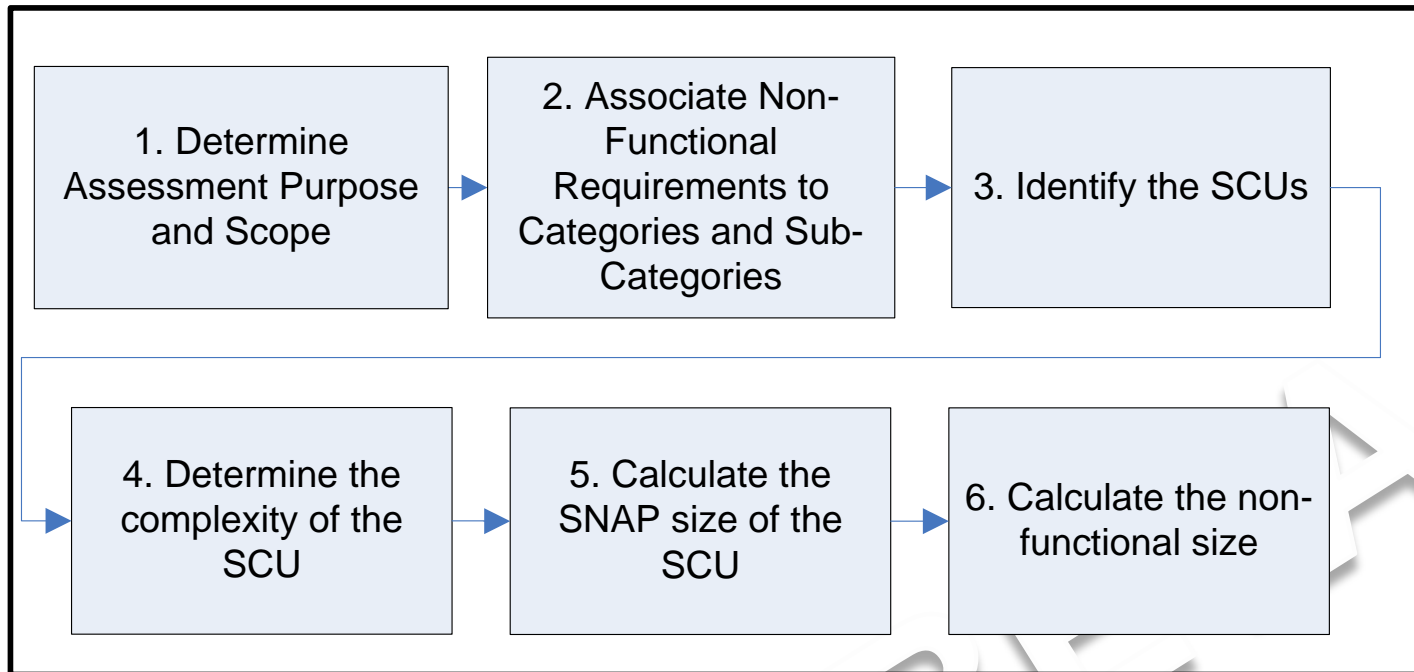
10

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  │    │ 2. Associate  │    │               │             │
│  │ Assessment    │ →  │ Non-Functional│ →  │ 3. Identify   │             │
│  │ Purpose and   │    │ Requirements  │    │ the SCUs      │             │
│  │ Scope         │    │ to Categories │    │               │             │
│  │               │    │ and Sub-      │    │               │             │
│  │               │    │ Categories    │    │               │             │
│  └───────────────┘    └───────────────┘    └───────────────┘             │
│                                                                           │
│  ┌───────────────┐    ┌───────────────┐    ┌───────────────┐             │
│  │ 4. Determine  │    │ 5. Calculate  │    │ 6. Calculate  │             │
│  │ the complexity│ →  │ the SNAP size │ →  │ the non-      │             │
│  │ of the SCU    │    │ of the SCU    │    │ functional    │             │
│  │               │    │               │    │ size          │             │
│  └───────────────┘    └───────────────┘    └───────────────┘             │
└─────────────────────────────────────────────────────────────────────────┘
```

SCU ~ SNAP Counting Units

Assessment Scope

Beta – put some effort into a good scope description.

▸ 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

13

Purpose of Non-Functional Assessment

Beta – Clarify your purpose.

▸ 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

14

Boundary (or Application Boundary)

Beta – Take care with boundary - document

▸ 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

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.

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.**

Categories and Sub-categories

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**

IFPUG SNAP internet forum

▸ **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

▶ **Feedback on the Assessment Practices Manual**

- 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.*

SNAP Assessment Scope, Purpose and Boundary
Please fill the colored cells

Project Scope:

SNAP Scope:

SNAP Purpose:

SNAP boundary:

SNAP Partition:

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

Project General   Information

Please fill the colored cells

What type of project is this project?

Type of Project:

Project Implementation Date:

Project Da...

What type of lifecycle is used?

What was the primary technology used
to build/enhance the software; i.e.,
that used for most of the build effort

Are Function Points used to measure the
functional size?

Count Approach:

Was it used for the entire project?

Industry:

Specify here if "other":

Architecture

What type of software application has the project produced, or is enhancing

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

Requirements elicitation:		Quality Assurance:	
Software architect:		End User Training:	
User Interface design:		Database administration:	
Graphic Art / Design:			
Development/ Programming:		IT System administration:	
Other: (Please specify below):			

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

Effort assigned to functional — Units

Project Effort

Convertion Units:

	8
Hours per week	42
Days per month:	21

Please update values

Total project effort — Units

Directly related to ISBSG benchmark data

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

Your Project's Conversion rate (hours/weeks/months)

SNAP Assessment

SCU Definition:	Data Entry Validation		
	SCU=The Functional Elementary Process		
SCU Description / ID	Number of data elements used for validation	Number of nesting levels	Additional parameter Units
Example 001	1	2	

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

Definition of SNAP counting unit

A placeholder for your input

One line per SCU

Assessment question or parameter to count

When asking "number of…" – insert a number. Other fields have valid values

Effort

No. SCU Description / ID SCU Definition: SCU Description / ID	Effort		
	Value	Unit	Type
0 Example 001	1	man*hours	Estimated
1	3	man*weeks	ROM
2	2	man*days	Actual

Effort without its units is meaningless…

Effort type will indicate the accuracy of the value entered

✖ Effort will help us to convert the parameters into size, with the understanding that more effort is correlated with more SNAP points

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

After the Beta Test – Iteration Two

▸ **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

Second iteration	Iteration #2 starts	2011.05.01	2011.05.31
	Assign Beta testers to Iteration 2	2011.05.15	2011.06.01
	Send out material for review	2011.05.15	2011.06.01
	Receive Beta test result & APM Feedback	2011.06.01	2011.06.15
	Review and Beta test consolidation and stastical analysis	2011.06.15	2011.08.15
	Review & Beta testing closed	2011.08.15	2011.08.15

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