

Put Some SNAP in Your Estimating Model

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June 2015

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Agenda

- SNAP Purpose and Objectives?
- What is Non-functional size?
- How can FPs and SNAP be used together?
- How can organizations apply SNAP?
- What is the SNAP Framework?
- SNAP Counting Examples
- Summary

What is the SNAP Purpose?

- Provide a quantifiable measure for the Non-Functional size of software
- Size non-functional characteristics by means of documented definitions, guidance and practices
 - In order to:
 - Improve software estimation
 - Build better benchmarks
 - Better communicate non-functional issues among stakeholders

What are the SNAP Objectives?

- A consistent measure among various projects and organizations
- Measure the non-functional size of the software that the user requests and receives
- Measure software development and maintenance based on the non-functional requirements
- Simple enough to minimize the overhead of the measurement process
- To complement the function point methodology
- To cover characteristics and entities not countable with function points

What is Non-functional size?

- A non-functional requirement is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviors. This should be contrasted with functional requirements that define specific behavior or functions
- Describes not what the software will do, but how the software will do it
- A statement that identifies what a product or process must accomplish to produce required behavior and/or results [IEEE]

Relationship between SNAP and FPA

- Non-functional size should be used in conjunction with functional size to provide an overall view of the project or application including both functional and non-functional sizing.
- Assessing the effort impact on projects as a result of the non-functional size is not in scope of SNAP.
- Organizations should collect and analyze their own data to determine productivity.
 - At present, there is little or no benchmark data for SNAP productivity
 - Organizations can generate their own historical data for productivity comparisons and estimation

Guidelines (FP vs SP)

- A requirement may contain both functional and non-functional aspects. In such a case, the requirement will have a functional size, measured in Function Points (FP), and a non-functional size, measured in SNAP Points (SP).
- Such a requirement should be broken down into its functional components and non-functional components, the segregation should be agreed by both the users and developers. Use FP for FR related tasks and SP for NFR related tasks.

How can organizations apply SNAP?

- To determine the non-functional size of a purchased application package
- To help users quantify the non functional benefits of an application or project
- Useful when non-functional requirements are "out of the norm"
- To improve quality and productivity analysis
- To estimate cost and resources required for software development and maintenance
- As normalization factor for software comparison

Applying SNAP - Approach 1

- For most organizations, a normal amount of non-functionality is built into FP productivity historical data.
- If the amount of non-functionality is typical for a project or application then there is no need for SNAP.
- However, if productivity (hrs/fp) is significantly impacted by non-functionality, then SNAP should be used.

Challenge #1: What is typical non-functionality for your organization?

Applying SNAP - Approach 2

- In your estimation model have two separate estimates - non-functional (SNAP) and functional (FPs)
- SNAP will measure all of the non-functional requirements involved in the project; FPs will measure all of the functional requirements
- Challenge #2: You have to capture the effort for each part separately in order to measure non-functional and functional productivities to apply to the model
- Challenge #3: You have to build your historical data as your current productivity rates may have non-functional activities included in the fp/hr metric

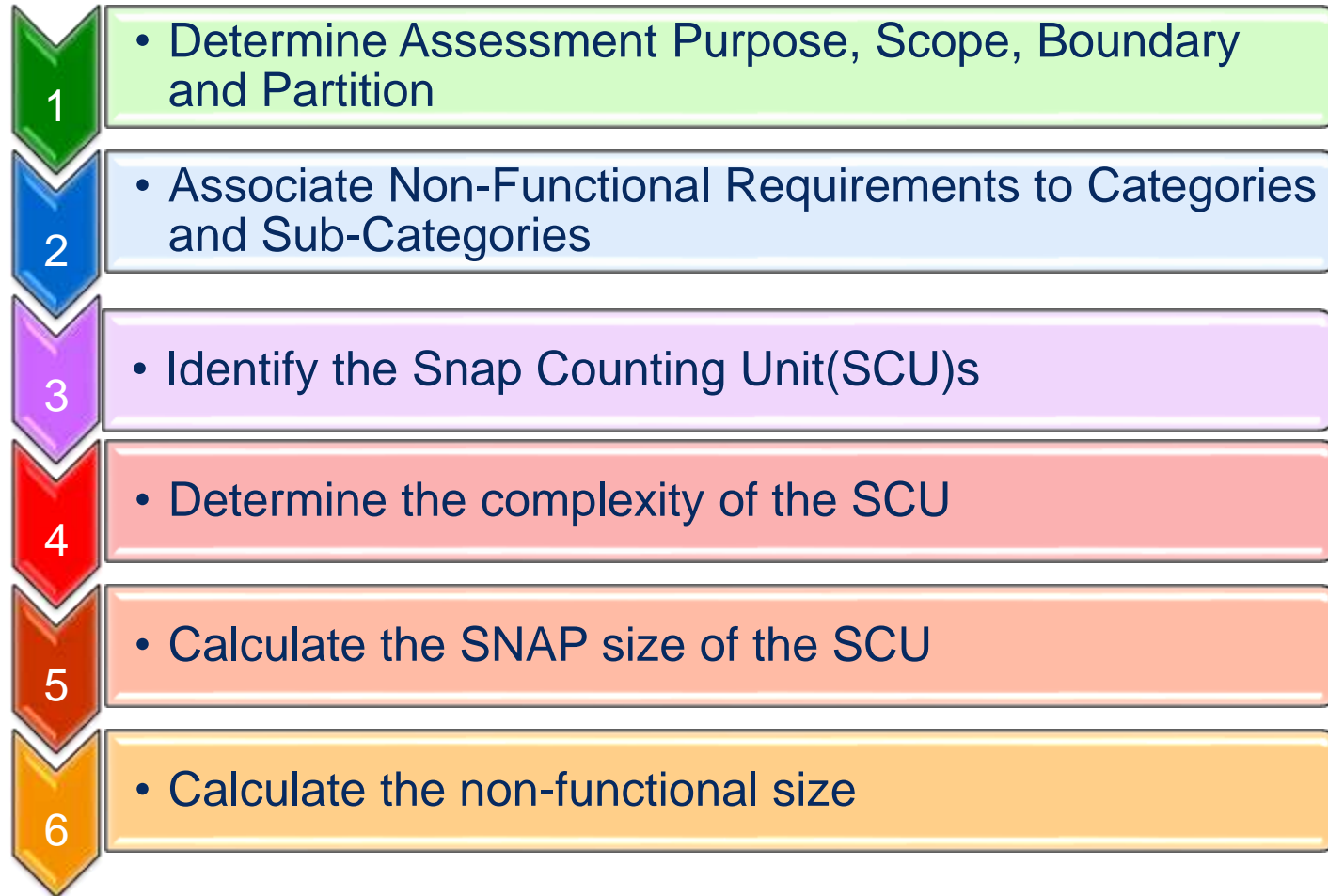
What is the SNAP Framework?

- General Description
- SNAP Framework Steps
- List of categories and subcategories for evaluation

What is the SNAP Framework?

- A set of evaluation and assessment steps that leads to a quantitative measure of SCUs (SNAP Counting Units), e.g. "SNAP points"
- List of categories and subcategories for evaluation
- Reused definitions or tailor definitions from CPM
- Same type of terminology as CPM
- Reused templates, formats from the CPM
- SNAP calculations are similar to FP formulas
- SNAP is a stand alone process and the APM it is a stand alone document
- However, knowledge of the CPM is required as APM uses several CPM terms & definitions and the reader can avoid duplicate sizing

SNAP Framework Steps



SCU: SNAP Counting Unit

Categories/Sub-Categories for SNAP Evaluation

Data Operations

- 1.1 Data Entry Validation
- 1.2 Logical and Mathematical Operations
- 1.3 Data Formatting
- 1.4 Internal Data Movements
- 1.5 Delivering Added Value to Users by Data Configuration

Interface Design

- 2.1 UI Changes
- 2.2 Help Methods
- 2.3 Multiple Input Methods
- 2.4 Multiple Output Methods

Technical Environment

- 3.1 Multiple Platforms
- 3.2 Database Technology
- 3.3 Batch Processes

Architecture

- 4.1 Component based software
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- 4.2 Multiple Input / Output Interfaces

SNAP Counting Example #1

There is a requirement is to change the account behavior so that the look up initial display will open with empty results grid and with blank search criteria (example: find and assign lookup in Client Group). Users can enter the search criteria and click on the GO button to perform the search and fetch the search results. Besides the display of empty results grid on initial display all other functionality within the lookup will be retained and will function as per current functionality.

Sub-category 2.1 UI Changes

Definition	Unique, user identifiable, independent graphical user interface elements added or configured on the user interface that do not change the functionality of the system but affect non-functional characteristics
SCU	Set of screens as defined by the elementary process
Complexity Parameters	<ol style="list-style-type: none">1. The sum of the number of unique properties configured for each UI element in the SCU2. Number of unique UI elements impacted

SNAP Counting Example #1 Results

- SNAP Counting Results
- There is one screen impacted and we are changing 1 UI element on that screen.
- Based on the above information – we can assess a Low Complexity change (<10 properties added or configured)
- So we have 1 Screen with 1 Unique UI Element added or configured $(2*1) * 1$
- Which equates to 2 SNAP Points for this requirement

SNAP Counting Example #2

We have a requirement to set the maximum height for each widget on a screen based on the data allowed within each widget. We also have an additional requirement that the links within a screen should be presented in a specific grouping and order on that screen. In all, there are 16 screens that are affected by both of these requirements.

SNAP Counting Example #2 Results

- SNAP Counting Results
- There are 16 screens impacted and we are changing 2 UI elements on each screen.
- Based on the above information – we can assess a Low Complexity change (<10 properties added or configured)
- So we have 16 Screens with 2 Unique UI Elements added or configured $(16*2)*2$
- Which equates to 64 SNAP Points for these requirements

Summary

- SNAP can be a useful tool for sizing the non-functional activities of an application, project or packaged software products
- Can be used in conjunction with function point sizing to give a complete assessment for your project or application
- Can be used for estimation and forecasting for future projects after enough data points have been gathered
- Training and/or pilot engagements are available for organizations wishing to proceed
- The APM and additional reference information can be found at ifpug.org website

Questions . . .

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