What's New in SLIM-SUITE 9.0

SLIM-Suite Integration

SLIM-Estimate
Single Project or
Program

SLIM-Metrics
Project Analysis &
Benchmarking

SLIM-Control
In-Flight Project
Track & Forecast

SLIM-MasterPlan
Multiple Component
Project, Program, or
Portfolio

SLIM-DataManager
Historical Project
Database

Custom Trends

Project Plan

New Project

In-Flight

Project Actuals

Core &
Custom Metrics

Basis of Estimation

QSM®

SLIM-Suite Metrics Analysis

Master Database

SLIM-DataManager
Historical Project Database

.SMP File

SLIM-Metrics
Project Analysis & Benchmarking

.SMW File

Select One Database for Analysis
- Core Metrics
- Custom Metrics
- Demographics

Collection of
- Charts
- Reports
- Queries
- Data Set Definitions
Create & Export Trends
Create & Export Database Subsets

"Replay" Estimates used to Model Completed Projects

Trend Groups

SLIM-Estimate
Single Project or Program

.SEW File

SLIM-DataManager
Historical Project Database

.SMP File

Database Subsets

Major Themes for 9.0 Release

- Simplify and clarify data entry, UI

- Make it easier to collect/display/analyze data in SLIM-DataManager and SLIM-Metrics

- Database management/maintenance

- Improve quality/accuracy of sizing data in QSM Database

- Better Management of Queries/DSD in SLIM-Metrics

QSM®

Major Themes for 9.0 Release

- SLIM-DataManager
  - Keyword Management
  - Multiple Custom View Layouts
  - Sizing Detail Visible
  - Database Validation
- SLIM-Metrics
  - Data Set Definitions and Query Conditions
  - Median Value on Charts
  - View Multi-Select Metrics (Keywords)
- Multiple Apps and API

QSM®

Evolution of a Feature 8.2 Keywords

Version 8.2 (early implementation):

Keywords typed in by hand

Data entry is time consuming, error prone

Can't see/manage all keywords in database (keywords created at project level)

Can't globally reorder keywords (WYSIWYG)

Can't display keywords on project list

Keywords lost during data exchange with SLIM-WebServices

Copyright © 2015 by QSM, Inc.

QSM®

Streamlined and Simplified 9.0 Keywords
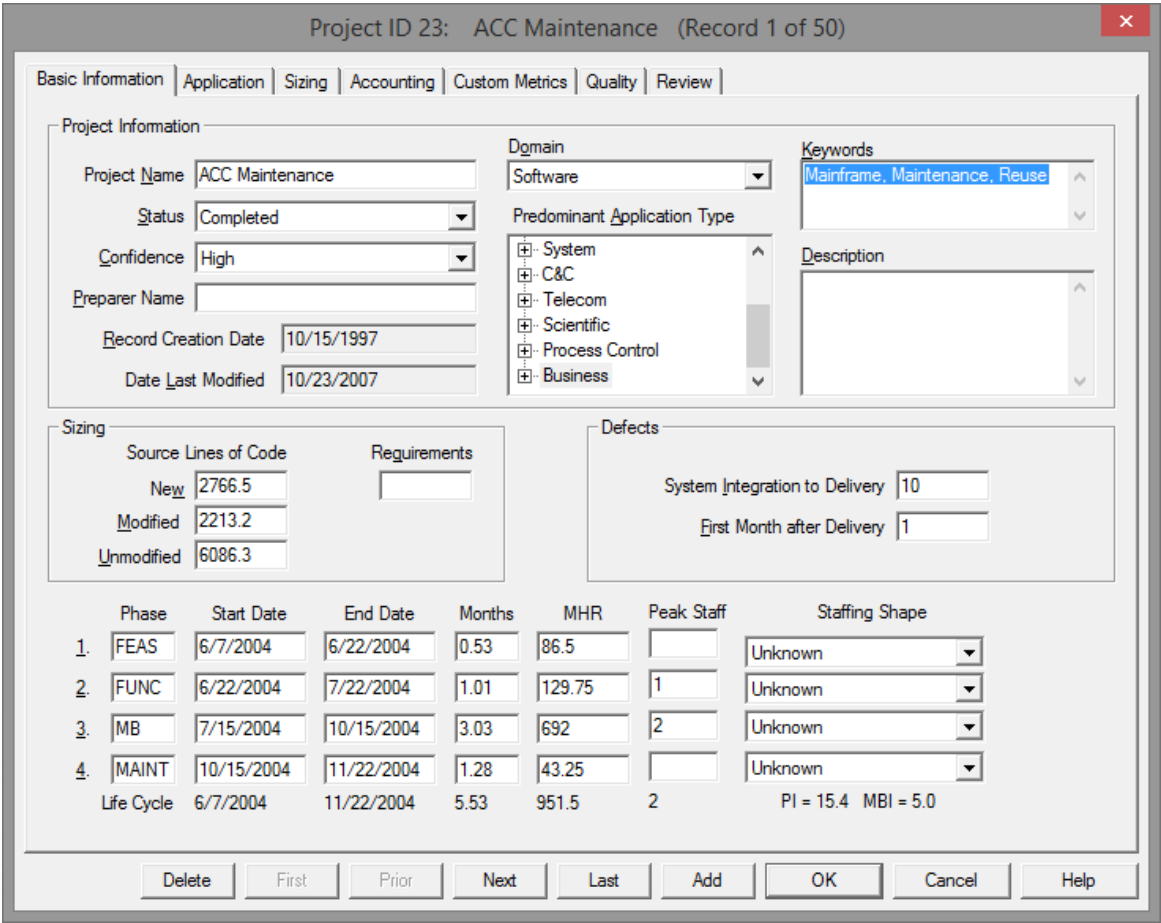
Version 9.0 (refined):

Easily tag projects by checking a box!

Define, manage, reorder master keyword list for entire database

On import, keyword lists merged

Display keywords on project list, SLIM-Metrics reports

Keywords will be preserved during data exchange with SLIM-WebServices

QSM®

Define and Reorder Keyword Master List

Define keywords at database level,
check/uncheck them at project level

Easily reorder items (order preserved on
project list view and reports in SLIM-
DataManager and SLIM-Metrics)

Edit existing keywords (update/correct
keyword names globally)

Delete unused, deprecated keywords

Customize Keywords

Use the list below to manage the keywords for all projects in this
database. Use the toolbar to add, delete, and change the order
of the keywords. Note that items in use in the database cannot
be deleted.

Fiber Optics
FP Sizing
Mainframe
Maintenance
Reuse
Web
ISDN
VISA

OK   Cancel   Help

QSM®

Display Keywords

When you reorder the Master List, new order is reflected on Project List grid and Database summary report as well as Keywords charts/reports in SLIM-Metrics.
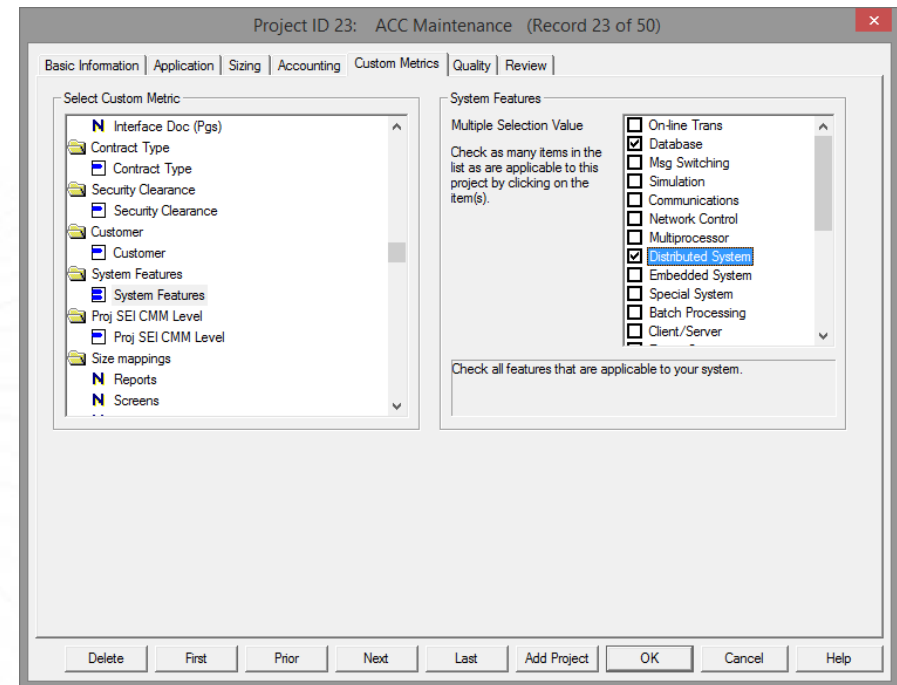
QSM®

Custom Metrics Multi-Select

Version 8.2 – more steps required to tag project

Ctrl/Click multi-select items
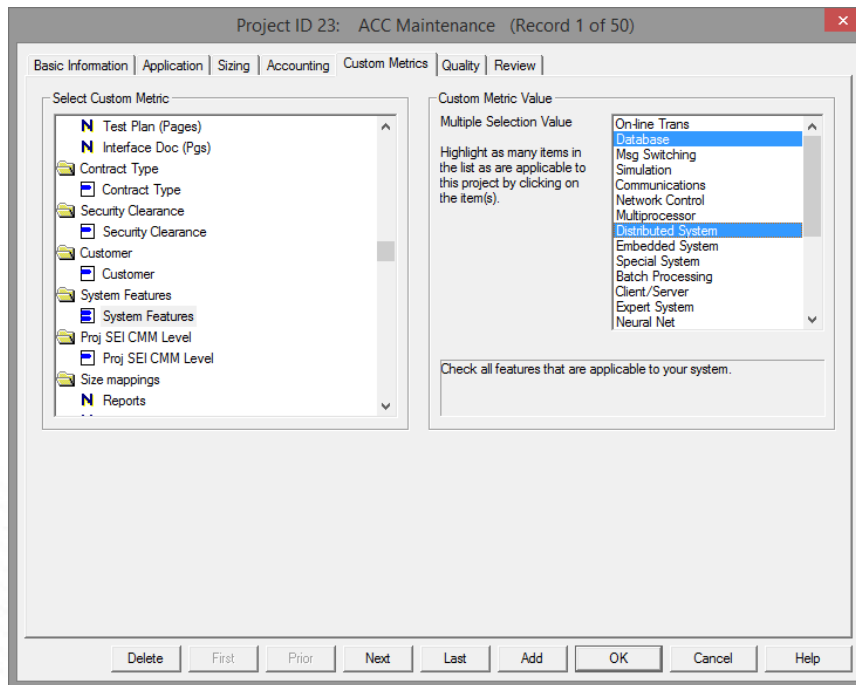
Version 9.0 – fewer steps required

Check/uncheck multi-select items

QSM®

Custom Metrics Multi-Select

Version 8.2

More clicks to add items, can't reorder list

Can enter data, but can't see it on Project List or in SLIM-Metrics!

Version 9.0

Fewer clicks, list easily reordered

Single, multi-select custom metrics now displayed on Project List view and in SLIM-Metrics!

QSM®

Manage Custom Metrics List

The Intelligence behind
Successful Software Projects

- Expand/collapse/deactivate unused custom metrics/categories

- Easily manage long lists

- Drag and drop items to reorder the list!

QSM®
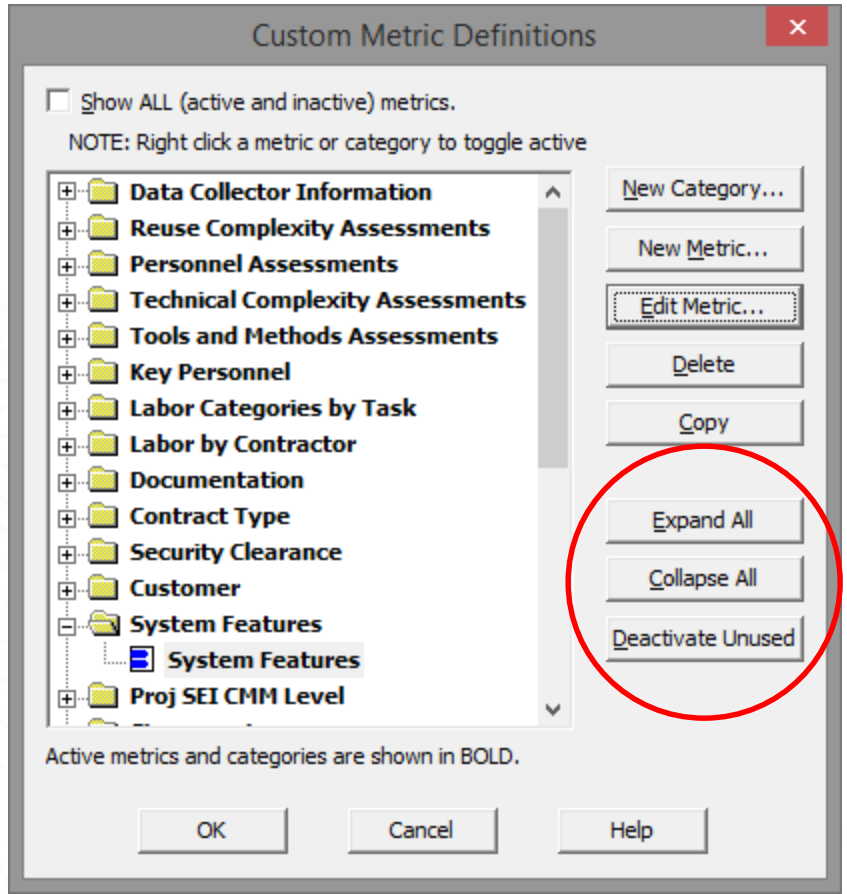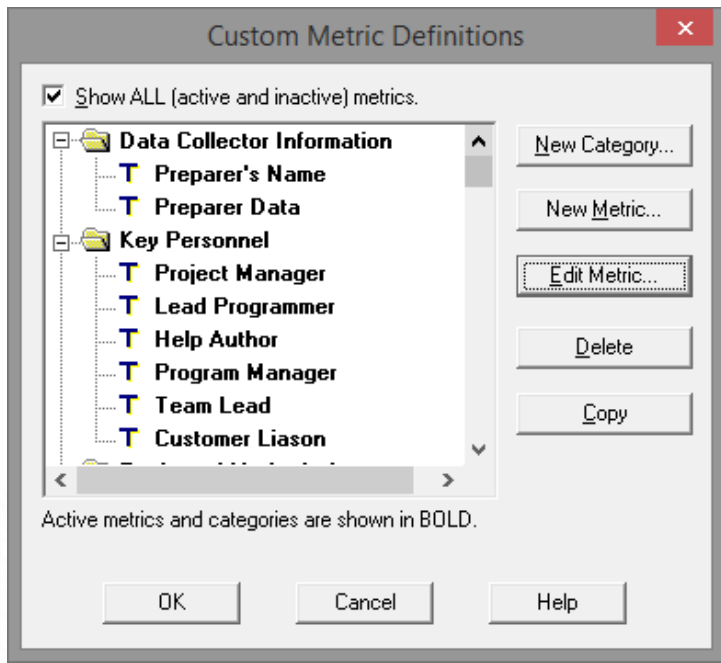
Size Data – Seen vs. Unseen

….an act, a habit, an institution, a law, gives birth not only to an effect, but to a series of effects. Of these effects, the first only is immediate; it manifests itself simultaneously with its cause - it is seen. The others unfold in succession - they are not seen…

*Between a good and a bad economist this constitutes the whole difference - the **one takes account of the visible effect; the other takes account both of the effects which are seen, and also of those which it is necessary to foresee.***

- Frederick Bastiat

Seen:

Function Unit
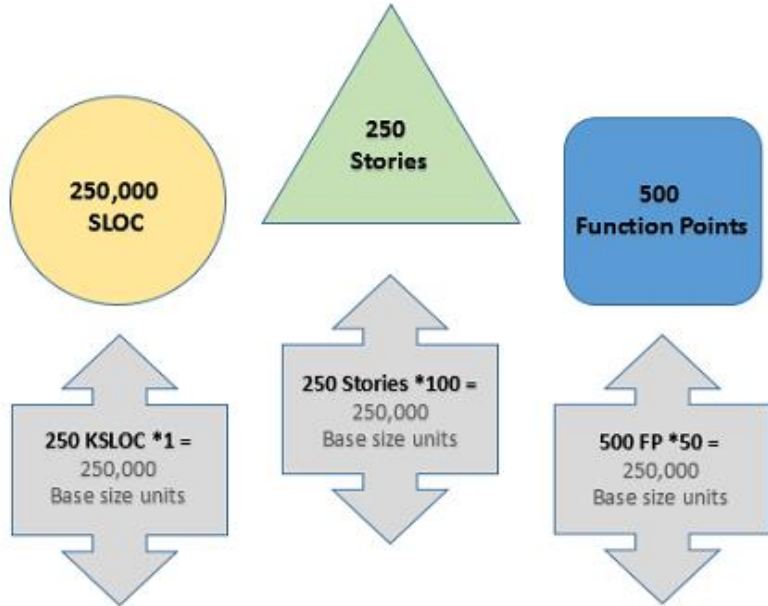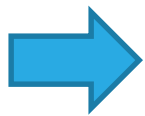
(maybe)
New/Modified/Unmodified

Hard to see/unseen:

(but they still matter!)

- Gearing Factor
- Effective vs. Total
- Base Size Unit
- Normalized Size Record
- Primary Size record
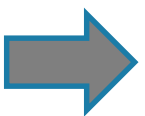- Secondary Size records

QSM®

Normalizing Size Data

Primary Size Record
(What the user entered/
How user thinks of size)

Function unit * Gearing factor

Normalized Size Record

Translates Size to Equivalent Base
Size Units (SLOC, Ius)

Secondary Size Records –
not shown in DataManager, user can
capture additional size measures
and calculate gearing factors for
them

250,000
SLOC

250
Stories

500
Function Points

250 KSLOC *1 =
250,000
Base size units

250 Stories *100 =
250,000
Base size units

500 FP *50 =
250,000
Base size units

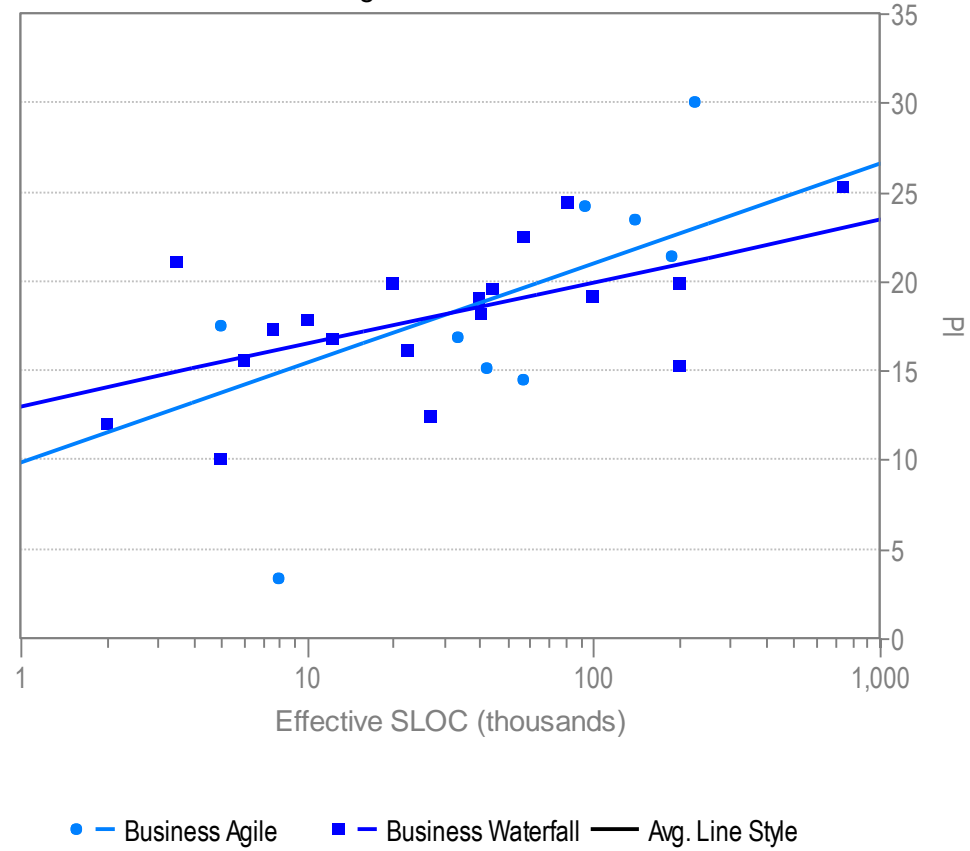QSM Database

QSM®

Normalizing Size Data

Did all these projects *really* capture size using SLOC?

Probably not – some counted SLOC, some Implementation Units, some Stories or Function Points.

Normalization to Base Size Units lets us compare projects sized in different function units on the same chart and measure their productivity on the same scale (PI).

TAKEAWAY:
"The Base Size Unit lends order and dignity to what would otherwise be a vulgar and unseemly brawl."
- Frederick the Great

PI vs Effective SLOC
Business Agile vs Business Waterfall

Effective SLOC (thousands)

PI

● — Business Agile   ■ — Business Waterfall   ▬ Avg. Line Style

QSM®

Streamline/Clarify Sizing Inputs
*Base Size Unit (Acronym)

Version 8.2

Version 9.0

1
2
3
4

Copyright © 2015 by QSM, Inc.

QSM®

DM Basic Info Tab
Entering Primary Size Records

Version 8.2

Change Function unit, gearing factor on sizing tab → **Edit/review all size inputs (function unit, gearing factor, new/modified/unmodified counts) in one place**
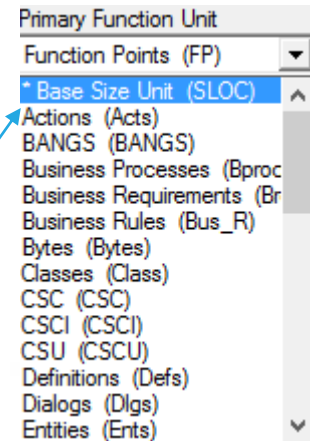
Gearing factor not shown → **Gearing factor is visible**

Base Size Unit can have gearing factor > 1 → **Cannot edit gearing factor when sizing in Base Size units.**

No visual distinction between base size unit and larger/more abstract function units → **Asterisk, list position, "Base size unit" create visual distinction between base size unit and larger/more abstract function units**
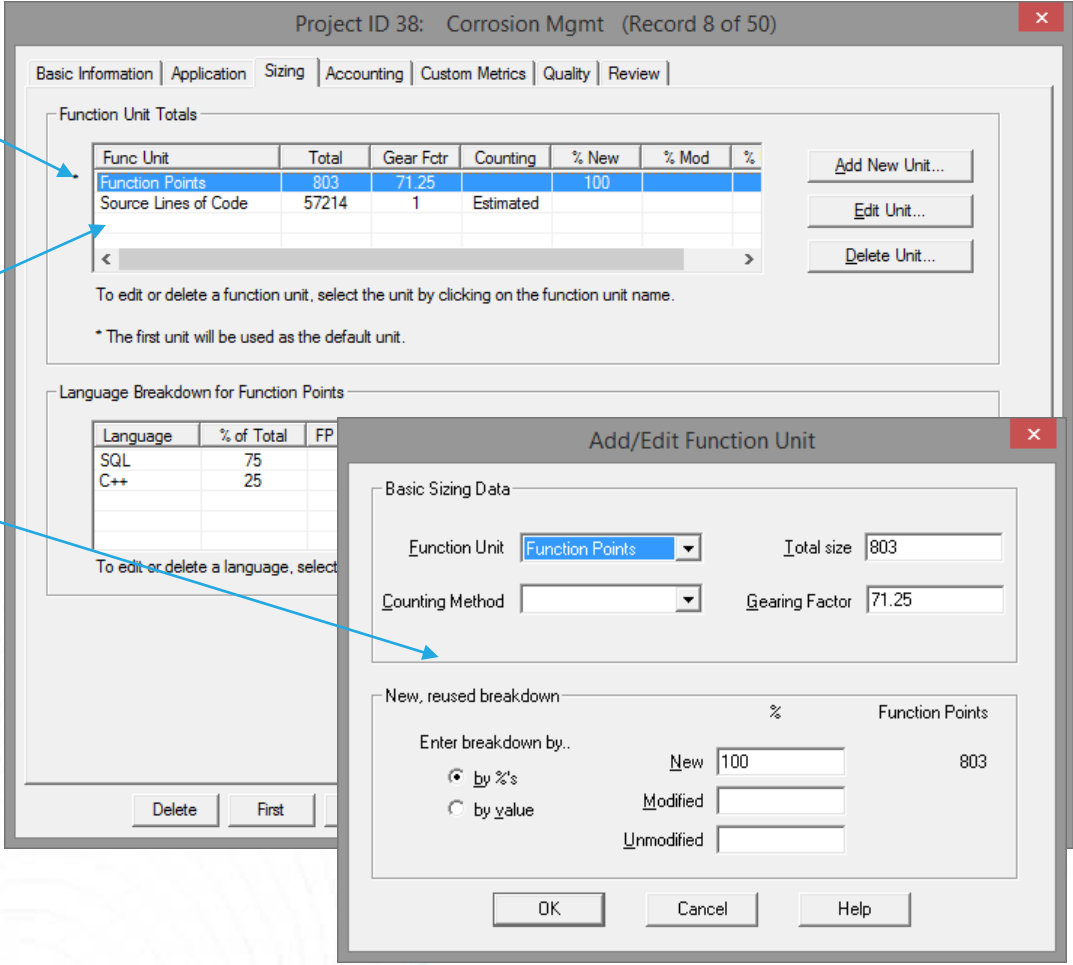
Version 9.0

QSM®

Version 8.2:

Mix of primary, secondary size records confusing

Normalized size record not visible (so users create unintended duplicates)

Must tunnel to create, edit size records

When primary size record changes, secondary records aren't recalculated

QSM®

Secondary Size Records in 9.0

Version 9.0:

Primary, secondary size records clearly labeled

Normalized size record displayed (prevents unintended duplicates)

Create, edit size records in place (right click to add row)

Primary/secondary records kept in sync (changes to primary size record immediately update secondary size records)

Project ID 38: Corrosion Mgmt (Record 38 of 50)

Basic Information | Application | Sizing | Accounting | Custom Metrics | Quality | Review

Primary Sizing

	FP	SLOC
Effective	803	57,213.8
Total:	803	57,213.8

The primary sizing data above reflects the total and effective size entered on the Basic Info tab.

Optionally, use the Secondary Sizing grid to add other sizing data that maps to this primary data (either the effective or the total size). This data can be used to calculate system gearing factors that can be helpful in sizing future projects.

If you choose to map your secondary sizing count to the total primary size, the effective value will be based on the same percentage breakout (new, modified, unmodified) as the primary unit.

In the Language Breakout grid, enter the details about the languages used to develop this project.

Secondary Sizing

To add or remove a secondary size record, right-click inside the grid below.

Function Unit	Count	Count Maps To...	Calc Gearing Factor

Language Breakout

To add or remove a language, right-click inside the grid below.

Language	% of Total	Language Type	FP Gear
SQL	75		
C++	25	Object-Oriented	

Delete | First | Prior | Next | Last | Add Project | OK | Cancel | Help

QSM®

Creating Secondary Size Records

1. Right-click to add row to grid

2. Choose Function unit

3. Enter Function unit count

4. Tell SLIM-DataManager whether count represents **Effective** (new, modified) or **Total** (new, modified, unmodified) size

5. Gearing factor calculated automatically (If count mapped to Effective, GF will NOT include modified code)

Project ID 38:   Corrosion Mgmt   (Record 38 of 50)

Basic Information | Application | Sizing | Accounting | Custom Metrics | Quality | Review

Primary Sizing

	FP	SLOC
Effective:	1,000	20,000
Total:	1,000	20,000

The primary sizing data above reflects the total and effective size entered on the Basic Info tab.

Optionally, use the Secondary Sizing grid to add other sizing data that maps to this primary data (either the effective or the total size). This data can be used to calculate system gearing factors that can be helpful in sizing future projects.

If you choose to map your secondary sizing count to the total primary size, the effective value will be based on the same percentage breakout (new, modified, unmodified) as the primary unit.

In the Language Breakout grid, enter the details about the languages used to develop this project.

Secondary Sizing

To add or remove a secondary size record, right-click inside the grid below.

Function Unit	Count	Count Maps To...	Calc Gearing Factor
Requirements	200	Effective Size	100 SLOC / Reqt

Language Breakout

To add or remove a language, right-click inside the grid below.

Language	% of Total	Language Type	FP Gear
SQL	75		
C++	25	Object-Oriented	

Delete | First | Prior | Next | Last | Add Project | OK | Cancel | Help

QSM®

Multiple Stored View Layouts
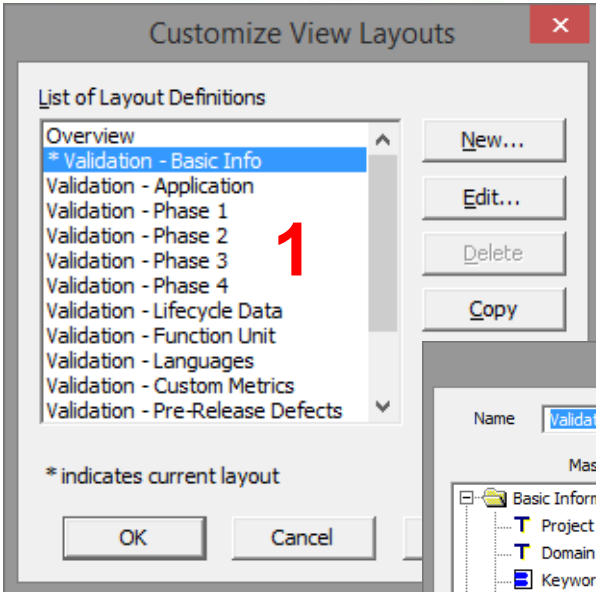
QSM®

Multiple Stored View Layouts

DM 8.2

- Create/Save 1 Project List view layout per database
  - Up to 15 metrics
- New files have 1 preconfigured view layout
- Display on Project Summary report
- Export Project Summary report to MS Office

DM 9.0

- Create/Save/Edit/ Reload multiple Project List view layouts per database
  - Up to 15 metrics
- New files have 14 Preconfigured view layouts
- Import View Layouts from other DataManager files
- Display on Database Summary report
- Export Database Summary report to MS Office

QSM®

Create, Edit, Import Stored View Layouts

| Copyright © 2015 by QSM, Inc.

QSM®

Database Validation – 8.2 vs. 9.0

Better Keyword Querying
(Select Single Keywords vs. Strings)

Version 8.2 – Keywords stored as text strings.

Version 9.0 – Keywords stored singly. Can select just the keyword you want to see.

Copyright © 2015 by QSM, Inc.

QSM®
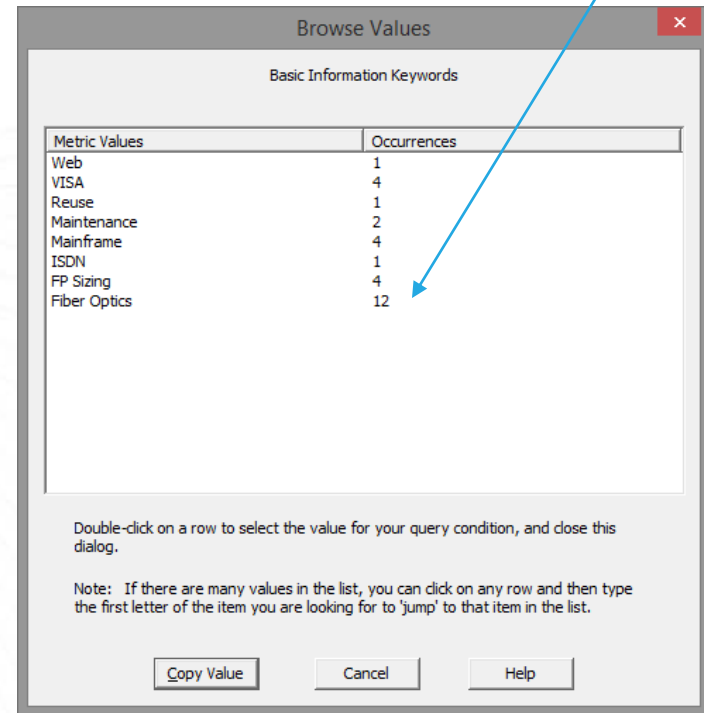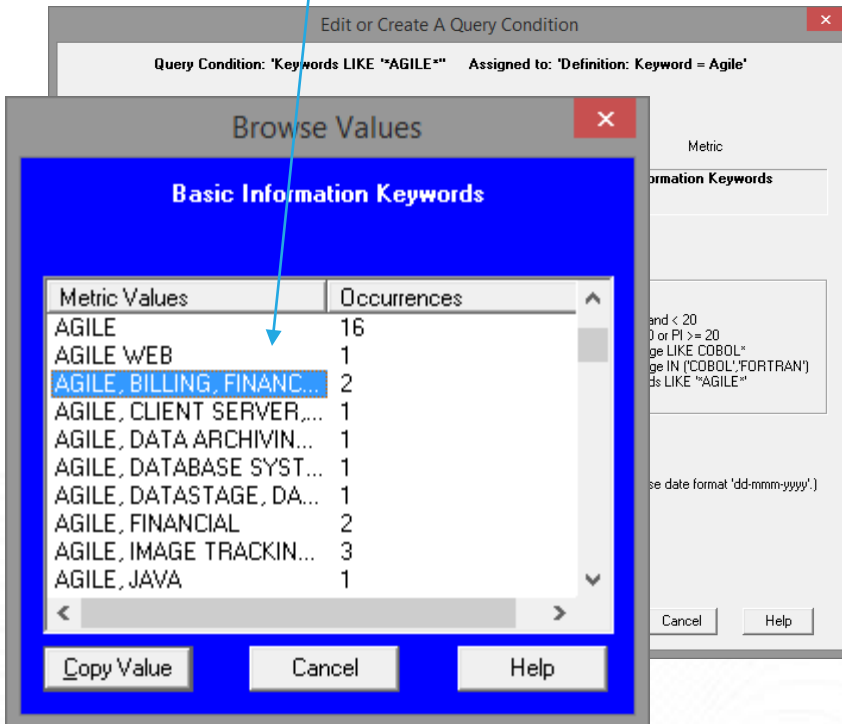
Version 8.2 – Keywords stored as text strings.

Because keywords were stored as text strings, you could query the database and find out how many projects had the "AGILE" keyword (Keyword LIKE *AGILE*).

But there was no easy way to display the results on charts or reports in SLIM-Metrics (see next slide).

QSM®
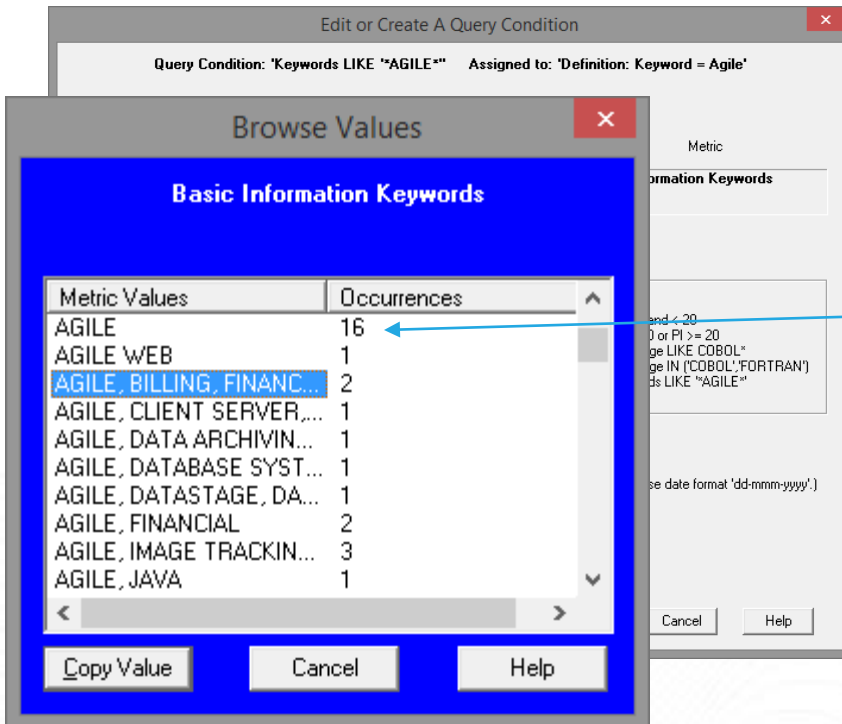
Better Keyword Handling
(Display Single Keywords vs. Strings)

Version 8.2 – Bar charts display **entire keyword string**. *# of occurrences applied to entire string.*

Version 9.0 – Bar charts/reports **list keywords singly,** show *# of occurrences for each keyword.*

Number of Projects vs Keywords

Project Characteristics
Business vs. Telecom
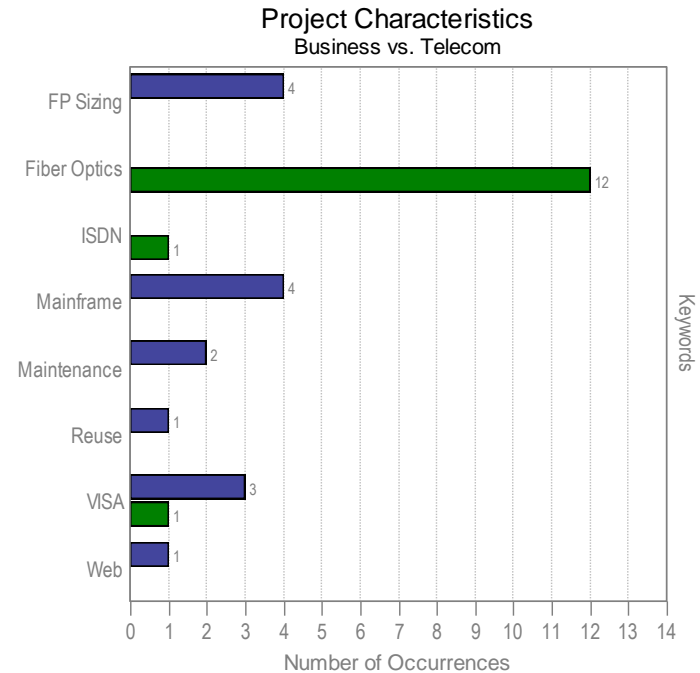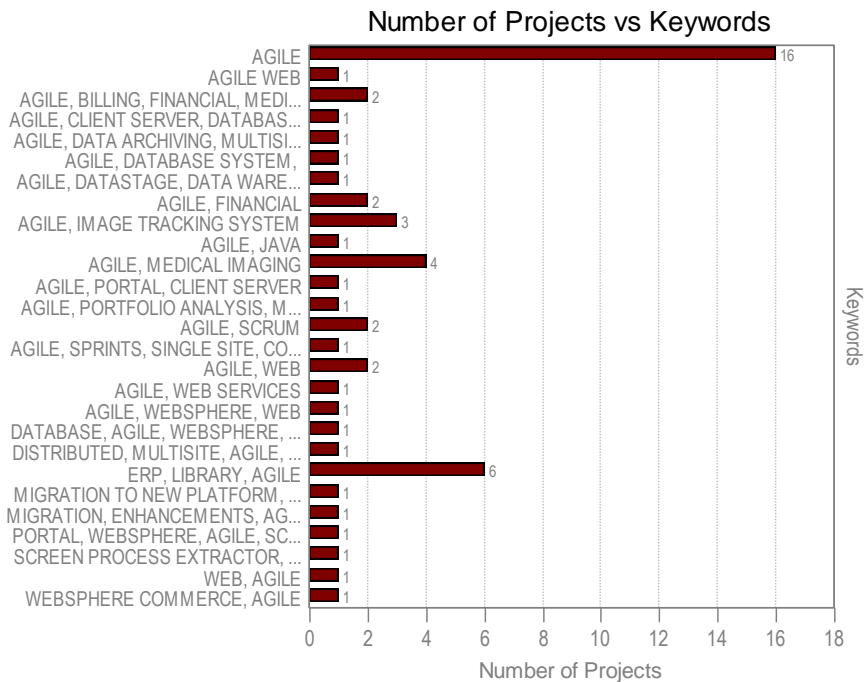
■ Business Systems   ■ Telecom Systems

QSM®

Better Handling of Multi-Select Metrics (Querying)

Version 8.2 – Users could enter Multi-Select custom metrics in SLIM-DataManager, but could not use them in queries in SLIM-Metrics.

Version 9.0 – Users can query on Multi-Select custom metrics and display them in SLIM-Metrics.

QSM®

Display Multi-Select Custom Metrics

Version 8.2 – Multi-select custom metrics not available for display on charts/reports.

Version 9.0 – Can display on bar charts/reports in SLIM-Metrics

QSM®
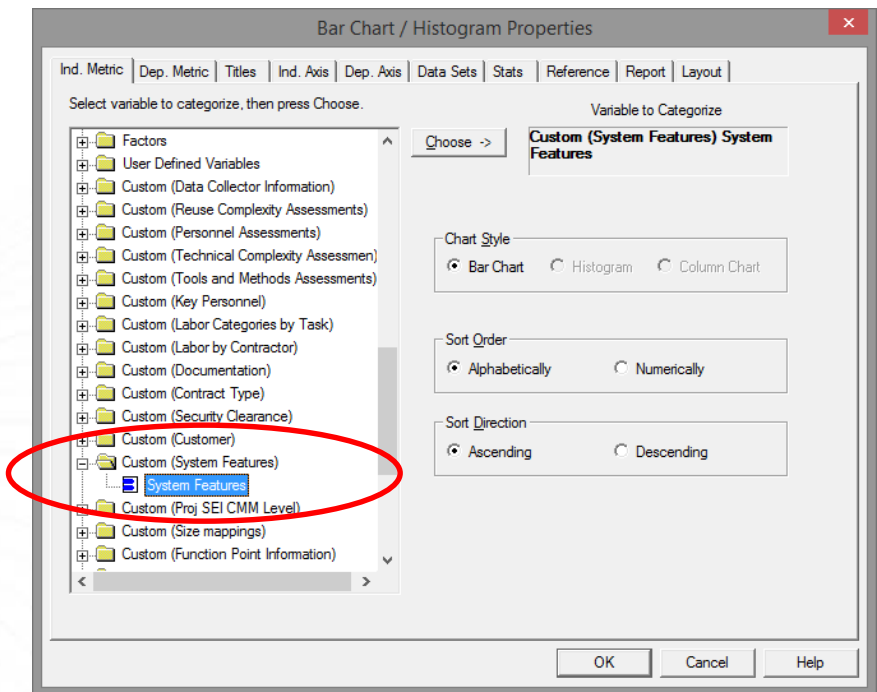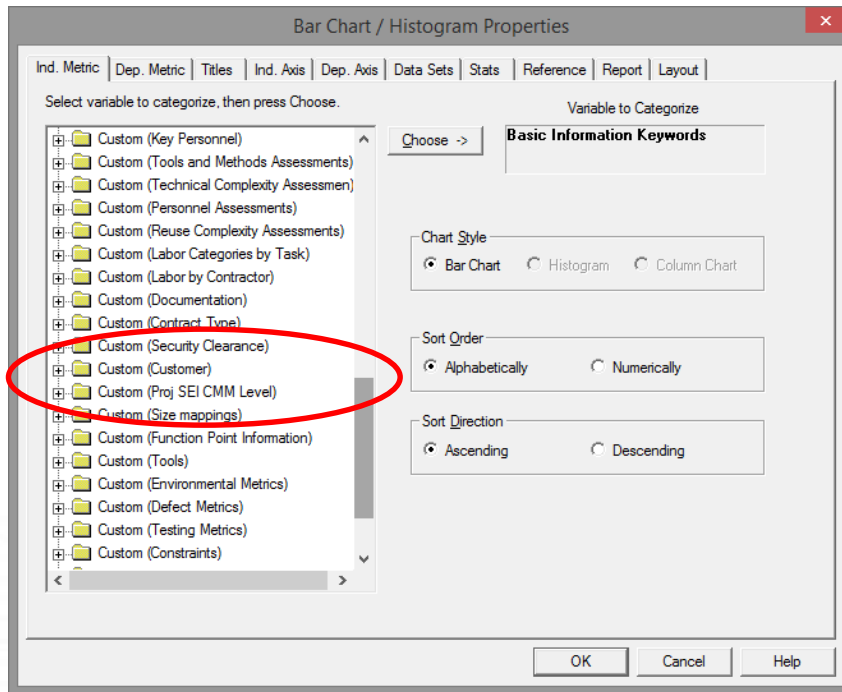
Managing Data Set Definitions and Query Conditions
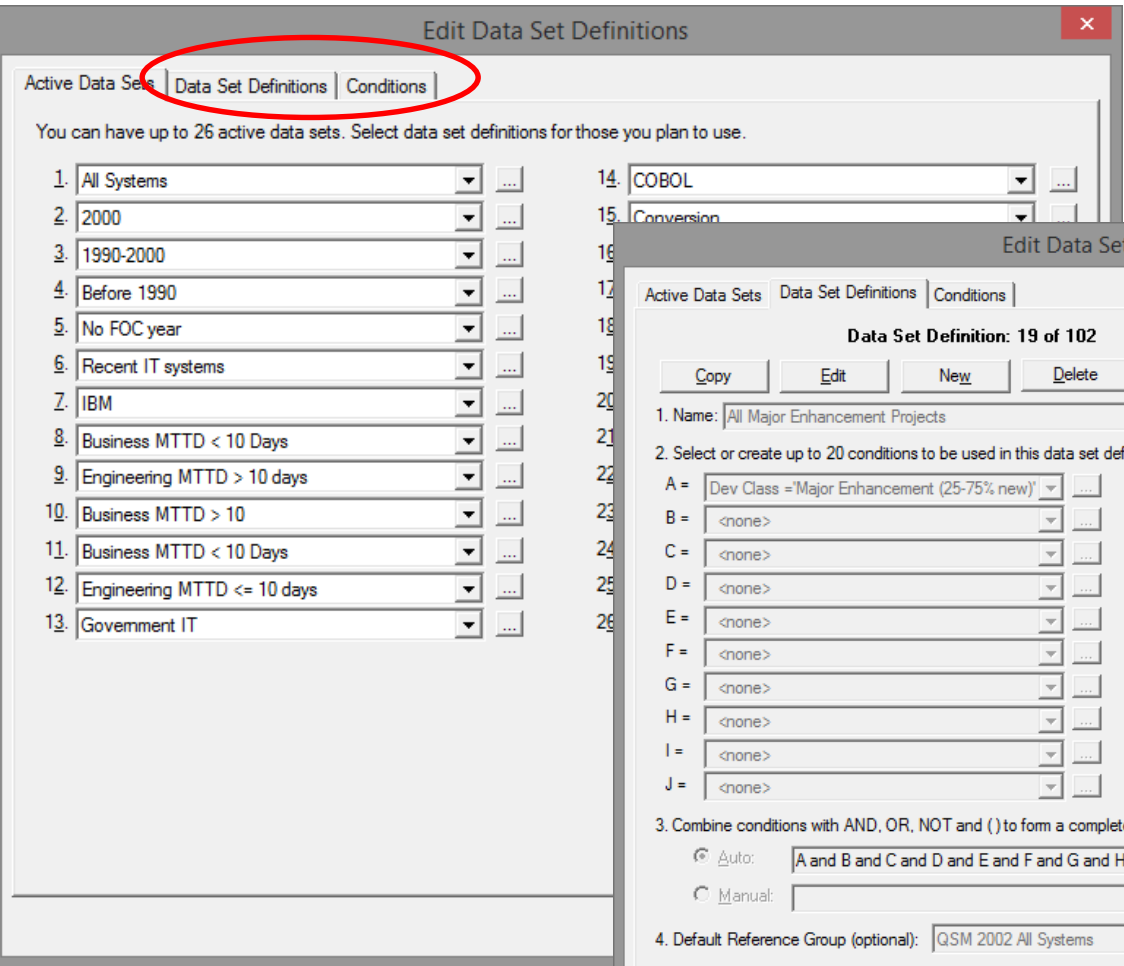
Version 8.2: Can only see 1 DSD or QC at a time. No way to review all existing items.
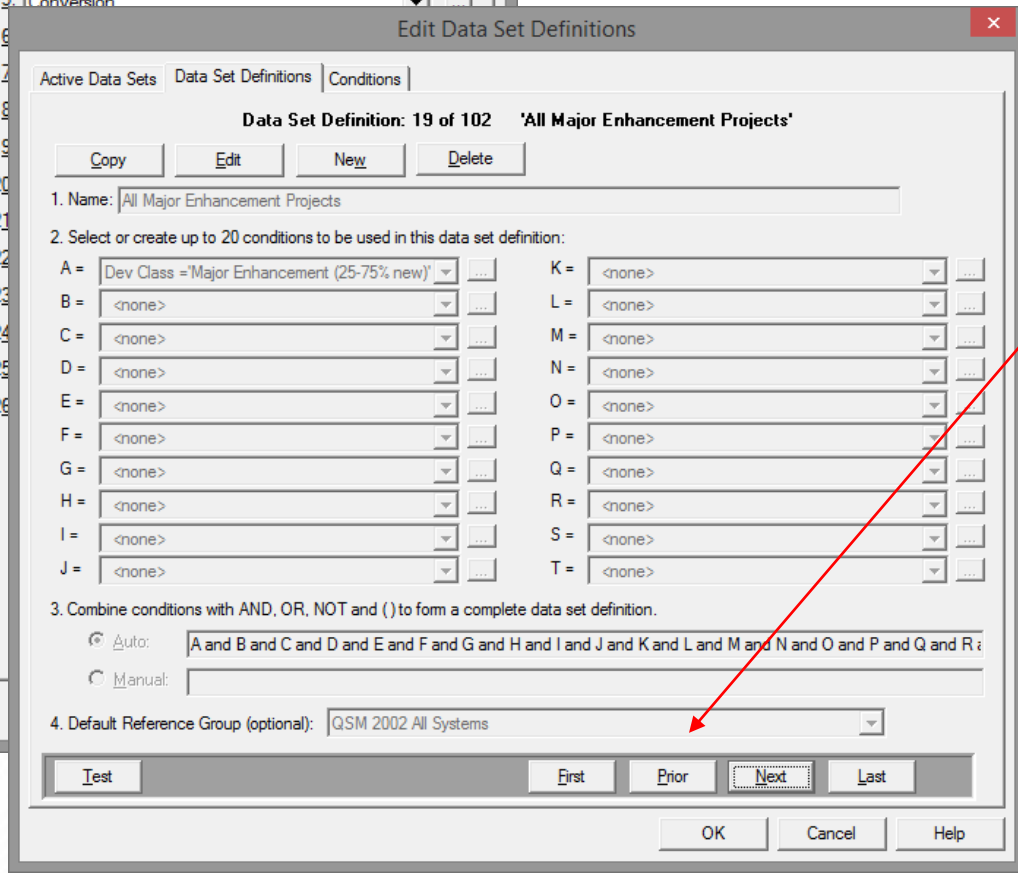
Page through items one by one using buttons at bottom of dialog.

Making it Easier to Create Query Conditions

Version 8.2: UI presents static/generic options that don't always apply to the metric you're working with.

Version 9.0: Streamlined, context-sensitive UI.

Copyright © 2015 by QSM, Inc.

QSM®

What's Being Used, Where
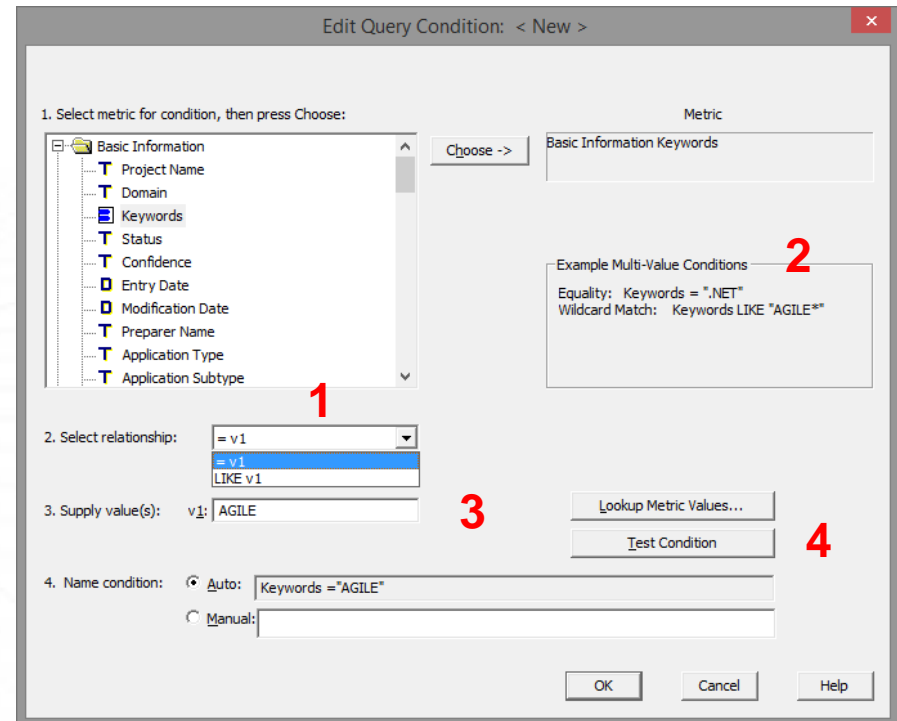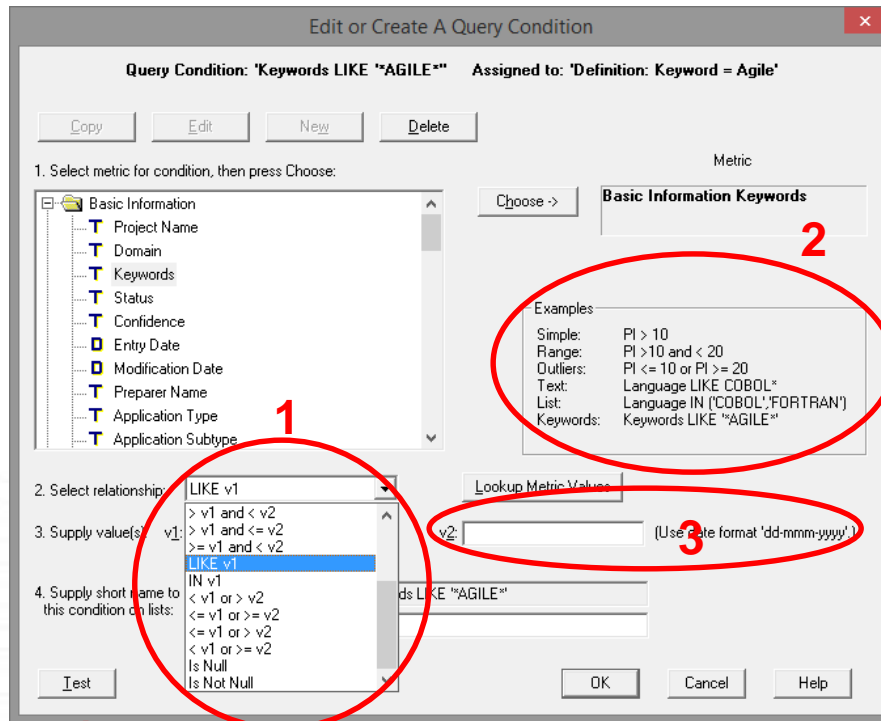
Version 9.0: Easily edit/review all dataset definitions in current database.

1. # of projects matched.

2. Is DSD in use? How often?

3. Associated default trend group.

4. Review query conditions that make up selected DSD.

5. Edit/New/Copy/ Delete buttons

6. Block select/delete unused DSC

QSM®

What's Being Used, Where

Version 9.0: Easily edit/review all query conditions in current workbook.

1. How many DSD use each query condition?

2. # of projects returned.

3. Edit/New/Copy/ Delete buttons

4. Block select/delete unused query conditions

QSM®

More visibility into *what you've already created* helps clients avoid creating duplicate data sets and query conditions.

Select DSD -> review queries -> clone DSD -> refine query conditions.

No more 26 active data set limit!

Avoid "breaking" charts/reports when you delete a DSD (or inactivate it b/c you ran out of active data set slots).

QSM®

Display Median on Bar Charts/Reports

Many software metrics have a skewed distribution (there are many more small values than large values). In these cases, the median is often a better measure of central tendency than the average.

Average MTTD 1st Month (Days) vs Development Paradigm

Development Paradigm	Average MTTD 1st Month (Days)
Agile	10.7295 / 10.9063
Object Oriented	11.8618 / 10.3611
Waterfall	9.4833 / 4.0000

Median MTTD 1st Month (Days) vs Development Paradigm

Development Paradigm	Median MTTD 1st Month (Days)
Agile	6.500 / 3.500
Object Oriented	10.000 / 2.000
Waterfall	7.500
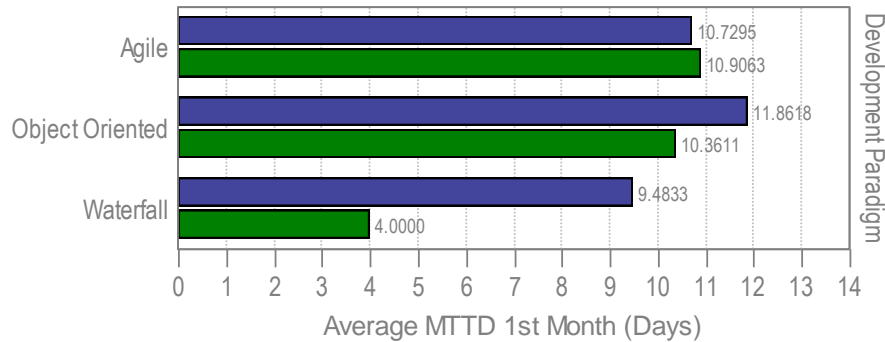
At left, average MTTD for Agile Telecom projects is 11 days.

The median is only 3.5 days.

When analyzing small samples with one or two very large data values, the median provides a better picture of "typical" project behavior. Displaying the average and median together shows the degree of skew.

QSM®
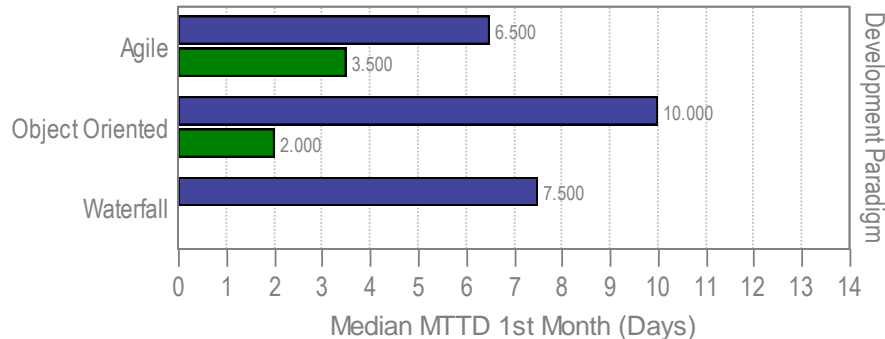
Display Median on Bar Charts/Reports
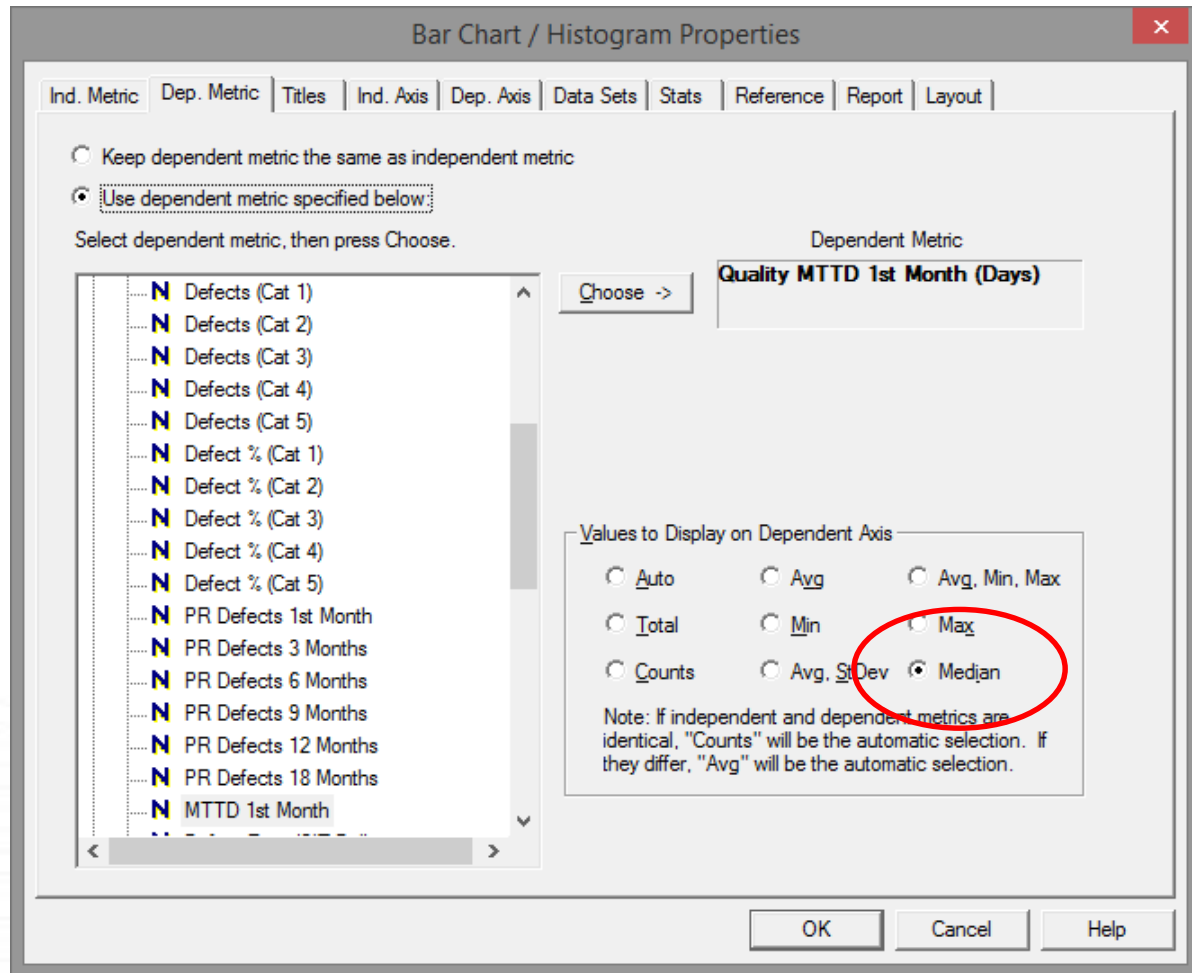
To display median values on bar charts, use the "Median" radio button on the Dependent Metric tab of the bar chart property page.

You can view the average, median, 1st and 3rd quartile values, and max/min values on the Stats tab.

QSM®

SLIM-Estimate Changes

- Streamline File | New from template handling
  - "No Solution" solution method
- Show Average Staff on Solution Panel
- Make arrow color on Risk Panel configurable
- Remove Rational Focal Point integration
- Restore missing Effort x Skill x Phase charts
  - Simplify/clarify settings

Copyright © 2015 by QSM, Inc.

QSM®

- New "No Solution" solution method bypasses global options, import history, project environment dialogs.

- Can use with or without a template (i.e., with QSM default settings).

- Charts/reports have no data b/c there's no solution to display.

New Project Options

Project Environment Options
- ○ QSM Defaults
- ● Import settings from existing template.   [Browse...]
  C:\Users\kate\Documents\QSM\Tools90\Templates\Agile-Story-Pt-Estimation.sew

Solution Options
- ○ Detailed Method
  Allows complete control over the project environment and solution assumptions. Requires the most information from you.
- ○ Quick Estimate
  Generates a quick baseline estimate that can be refined later.
- ○ Level of Effort Estimate
  Given a specified level of effort, determines the amount of functionality that can be built.
- ○ Solve for PI
  Calculates the PI needed to build a given system within a specified time frame and effort/peak staff.
- ○ Solve for Size
  Calculates the amount of functionality that can be built given time, effort/peak staff, and PI.
- ○ Solve from Trends
  Generates a baseline estimate based entirely on phase 3 time and effort averages from your selected trends.
- ○ Create Solution from SLIM-DataManager
  Creates a solution based on a SLIM-DataManager project.
- ○ Create Solution from SLIM-Control
  Creates a solution based on an existing SLIM-Control project plan.
- ● No Solution
  Creates a new empty project. All solution input dialogs are bypassed. Charts and graphs are displayed without data.

[OK]   [Cancel]   [Help]

QSM®

Average Staff on Solution Panel

- Average staff now displayed on solution panels in addition to peak staff.

| Copyright © 2015 by QSM, Inc.

- Total effort/cost by skill by phase or lifecycle charts and reports now available again.

- UI has been simplified

Breakout Chart Properties

| Data | Titles | Vert. Axis | Horz. Axis | Report | Layout |

Select the solution and type of breakout to display.

Project-solution to display
- ⦿ Current Project, current solution.
- ○ Selected project-solution (from Solution Log).

Breakout Selection
- ⦿ Effort by Skill Category
- ○ Cost by Skill Category
- ○ Effort by WBS Task
- ○ Cost by WBS Task

☑ Show data as percentages   ☐ Show data labels

Options

Select Phase   Life Cycle ▼

Phase 1
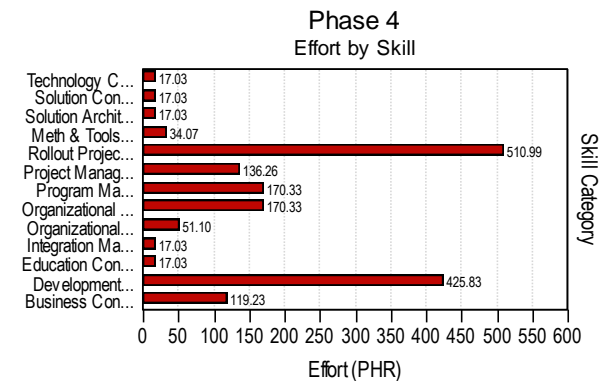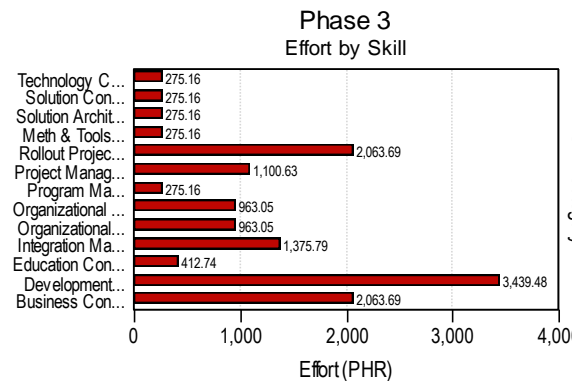Phase 2
Phase 3
Phase 4
Life Cycle

OK   Cancel   Help

QSM®

Restore Effort x Skill x Phase Charts/Reports

- Produces bar charts showing total effort/cost by skill for each phase, either as a % of total phase effort or as a simple total.

Effort Detail
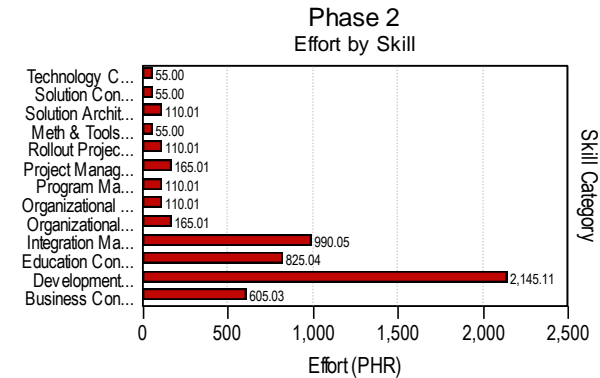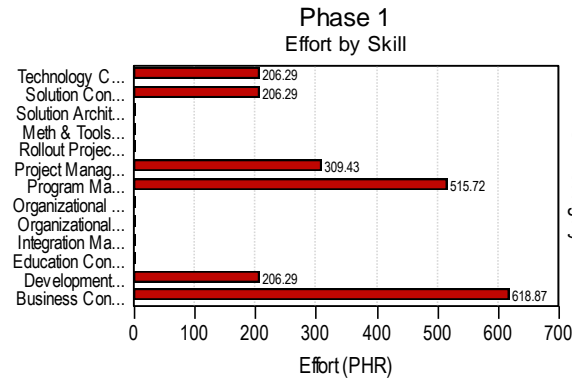
Project: Package ImplementationTe...

QSM®

SLIM-Control Changes

- Changes to SLIM-Control Agile template (backported to 8.2):

  - Change attributes on burndown metrics
  - Add Plan/Actual data to SC Agile template

- Consider missed Milestones in Forecast
  - Missed actual MS dates now reflected in "# of data points used in forecast" column

- Increase font size on Solution Panels

QSM®

- Can now retrieve list of trends in workbook.

- New API Call to retrieve Calculated PI (including PI calculator adjustments) from SLIM-Estimate workbook.

- SLIM-Estimate API now accessible as COM component from C#.

- Better data validation for data imported via API now available in SLIM-DataManager (new Database Validation report).

QSM®

Multiple Apps

- Export to MPX removed from all menus (SLIM-Estimate, SLIM-MasterPlan export to MS Project MPP format)

- Architecture changes:
  - Migrate SLIM to Unicode
  - Data Access Layer changes

- 9.0 Sample/Template updates
  - Project dates updated
  - Workbooks upgraded to newer Access version (can open in Access 2013)
  - New features highlighted in SLIM-DataManager/SLIM-Metrics samples and templates
  - Several samples discontinued (archived on SharePoint). QSM Corporate | Samples and Templates folder.

QSM®

Multiple Apps

- "Newer Version Available" message on splash screen when application launches
  - Countdown to expiration
  - Help | Check for Updates
- Base Size Unit
  - Clarify UI in all apps
  - Blank out gearing factor when changing function unit
  - Disable editing of gearing factor when function unit = base size unit
- Documentation
  - Guided tours for SLIM-Estimate, SLIM-DataManager, SLIM-Metrics revised/expanded
  - Step by step instructions for creating new extension menu items

QSM®

Release Notes and Install Information

Download release notes from Installation and Upgrades page on QSM web site.

- Reporting:
  - Create, Save, Reload Multiple View Layouts
    - Import View Layouts from other SLIM-DataManager files
    - 14 Default, Preconfigured View Layouts
    - Ad hoc report capability via Database Summary report
  - New Database Validation Report

- Redesign of Keywords
  - Checkbox interface
  - Master Keyword list – global editing, reordering
  - Display Keywords on project list view/database summary report

QSM®

Feature Recap

- Redesign of Single/Multi-Select Custom Metric Interface
  - Checkbox/radio button GUI for data entry
  - Reorder and manage selection items
  - Display Single/Multiple select CM on DM Project List and in SLIM-Metrics

- Manage Custom Metrics & Categories
  - Reorder list of categories and metrics (drag n' drop)
  - Collapse/Expand All
  - Deactivate Unused items (Show/Hide to keep list manageable, speed up data entry)

QSM®

- Streamlined Data Entry for Sizing and Language Data
  - Base Size Unit (the size unit formerly known as "The Basic Work Unit")
  - Primary, Secondary Size records
  - Simpler UI for Data Entry
  - Clearly show whether gearing factors include unmodified code
  - Better Feedback to user about normalized size record, calculation of gearing factors
  - Changes to primary size record update all secondary size records

- Sample, Templates files updated/enhanced
  - Upgraded Access dbase version
  - Updated dates in Sample/Templates files
  - SLIM-DataManager, SLIM-Metrics samples/templates consolidated and updated to show off new features (keywords, effective and total gearing factors, multi-metric and single select metrics, stored view layouts)
- SLIM-Estimate, SLIM-DataManager, SLIM-Metrics guided tours revised and updated
  - More thorough coverage of new features
  - Show off updated samples, templates

QSM®