PerMetrics™: An Analysis of Typical Research Project Workflows and Potential Cost and Time Savings

PerMetrics enables market research professionals to save significant amounts of time, effort and money by harnessing the power of modern computing at the reporting stage of quantitative research projects. As its central features, PerMetrics automates the creation of report presentations, pulls data (including base sizes) from cross-tabs to presentation charts, and performs a variety of slide formatting tasks.

Research reporting is a major undertaking. Consider the following project: A client has implemented a tracking study every six months in ten markets. Each market needs to be reported separately but with nearly identical PowerPoint™ presentations containing approximately 80 slides each. Created individually and by hand, each report could take approximately 30-40 hours to build, modify, populate with data and check. Assuming an average of only 30 hours per report, that adds up to 300 hours or 7.5 man-weeks to chart just one wave of the project.

With PerMetrics, the amount of labor required for the reporting stage of this project would be reduced dramatically. In this paper, we estimate that a total savings of almost 150 hours could be realized. Assuming a billing rate of $100/hour, this would mean $15,000 per wave or $30,000 per year of pure profit could be generated *on this one project*. Viewed from a broader perspective, the efficiencies are even more significant. We calculate that an average savings of 215 hours per year per analyst can be achieved with PerMetrics. Even for a small research firm employing ten analysts, this would add up to 2,150 hours saved per year and translate into profits of more than $200,000.

PerMetrics is a desktop software application that researchers can use to perform complex operations and manipulations on tabulated (not raw) data. It does not conduct statistical tests or procedures, although it can aid data analysis by helping researchers to clarify their analysis plans and explore the data. In fact it is a tool that allows researchers to concentrate more on analysis rather than on the mechanics of building presentations and pulling numbers from tabs. It was designed by market researchers for market researchers and is based on a deep understanding of the co-mingling of analytical and chart-building tasks.

This paper serves as a basic introduction to how back-office reporting tasks are typically conducted on the vendor side and how PerMetrics (or automation in general) might impact this. It describes what researchers currently do, how long it takes and how much time could potentially be saved.

An Overview of the Reporting Process

1) Process Description

As most researchers and managers are aware, the reporting stage of quantitative market research projects is very labor-intensive. While this is understood in broad

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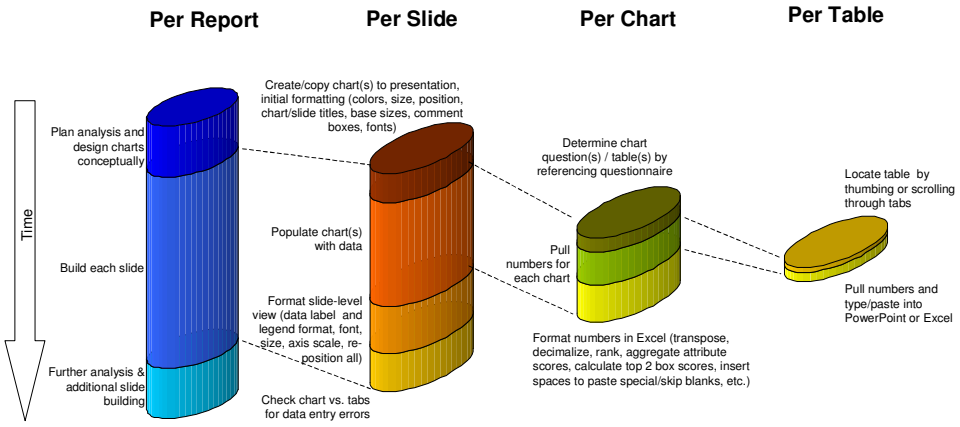
terms, it is useful to look at the processes undertaken at this stage in some detail. Not only will such examination reveal the surprising complexity of the tasks at hand, but it makes evident what parts of the process can and should be improved through software automation.

Tasks at the reporting stage of a market research project can be broken down into "silos" of activities at the report, slide, chart and cross-tab level. Very generally, the researcher has two core tasks at this stage: First to analyze the data that has been collected and draw meaning from it by describing, explaining and predicting variable relationships contained within. Second the analyst needs to convey the results of this analysis through reporting. These tasks are very different. The former is a high-level, professional task that requires an enormous amount of skill, statistical expertise and judgment. The latter, once you get past the initial design of the report (the story-telling part) is really more of a production-level job. It is as if the analyst wears two hats – a top hat for the analysis and a hard hat for the chart-building tasks. The rest of this discussion will concentrate on the hard-hat portions of the job and the energy and time that it consumes. A breakdown of tasks is shown in the next slide.

Analyst Task Breakdown at Reporting Stage of a Typical* Project



*Based on Efficient Analytics sources

At the report level, the researcher first needs to plan the initial analysis and design the charts. This step takes relatively little time since the analyst has a very good idea of how s/he will analyze the data for common MR projects like product tests, customer satisfaction studies or advertising pre-tests. These study types are almost always done in accordance with general but widely accepted industry practices and standards. In fact, some research companies have so standardized their (in some cases

proprietary) approaches that they actually use boilerplate questionnaires and report charts.

After this initial planning stage the analyst starts the onerous task of actually building the slides to be included in the presentation. This is followed by further analysis (drilling down) and chart building once s/he can see the data in graphical form in the presentation.

As is evident in the preceding slide, the chart building process dominates the reporting stage in terms of the time it requires. To illustrate why, let's look at tasks on a ***per slide basis***. The analyst must actually create each slide in the presentation, adding the correct chart object(s), textboxes with titles, base sizes, etc. and then formatting everything with the proper fonts, font sizes, colors, positioning, etc. This lengthy task is followed by placing the numbers from the tabs into the charts. Based on how the slide looks then, the chart likely needs to be re-formatted in terms of axis scales, legend format and placement, data labels, etc. Finally, the chart needs to be checked versus the tabs to make sure that no data entry errors were made. The last task is likely done at the very end just before the presentation is submitted to the client, but since it is really a slide-level charting task, we have inserted it here.

The number pulling process, or the task of populating the charts with data, can be further broken down into ***chart-level*** tasks. For each chart on the slide (and there may be several) the analyst must first determine the question number and hence table number from which the data must be pulled. Even if the analyst is familiar with the questionnaire and tab layout, this may take time simply because s/he has likely not memorized this information and will have to literally read through the questionnaire to figure out where the data comes from. Or s/he may have included it on the slide in a textbox, in which case this task was completed earlier – but still took up the analyst's time.

Then the analyst pulls the numbers. Pulling numbers must be further broken down to the individual ***table level***. This is because some charts will draw data from more than one table within the tab set. For example, charts that show scores for a variety of attributes usually will do this. Numbers are thus pulled from each table individually. Physically, this is done entirely by hand, either by reading through the hardcopy tabs and actually keying in the data or by copying and pasting in the case of softcopy tabs.

In either case the numbers are likely going to need to be re-formatted in some way back at the ***chart level*** in order to fit into the presentation datasheet. For example, they may need to be transposed, ranked, decimalized or aggregated in some way. One particularly confounding task is the frequent need to reverse the order of stubs like "strongly agree" or "strongly disagree" in order that the chart legend shows the proper label on top. Such tasks are usually done at once for all data headed to a particular chart regardless of whether it came from one or ten different tables,

although we have seen analysts actually reformatting numbers as they type them in. The work is better conducted in Excel™, after which the numbers are pasted into PowerPoint.

As you have noticed by now, each silo in the reporting process contains tasks that may require several iterations before the analyst can move back up the ladder to continue with the next higher-level task. For example, if a chart draws from multiple tables, the analyst must repeat the tasks in the Table-level silo multiple times before moving onto the next chart. Similarly, each chart-level procedure (and subsequent Table-level procedures) may need to be carried out a number of times if a slide contains multiple charts. And so on.

2) Time Requirements

So how much time does this process take? In an effort to quantify exactly how labor intensive the chart-building process is, we need to determine how prevalent the instances of repetitive tasking are. Based on a survey of 14 fairly typical market research presentations, we calculated redundancy rates for each silo:

- Table-level silo: 2.32 Tables per chart on average
- Chart-level silo: 1.21 charts per slide on average
- Slide-level silo: 77 slides per presentation on average with an average of 60 slides containing one or more chartable objects (e.g. PowerPoint charts or Word tables of some kind)

The sample of reports we used contained a variety of project types including A&Us, New Product Development research like Product Tests, a Pricing study, a Branding study, etc. and was gleaned from 5 different research organizations (both client- and supplier-side).

Further, we estimate based on experience and conversations with numerous suppliers that an average research analyst/project manager-type worker will handle approximately 15 reports per year.

Using these estimates we can now fill in the length of time it takes to conduct all the tasks in all the silos for an average or typical research report. What follows are our estimates of an average amount of time necessary to perform each task on slides, charts and tables of mid-range difficulty. The figures are shown on the next graphic:

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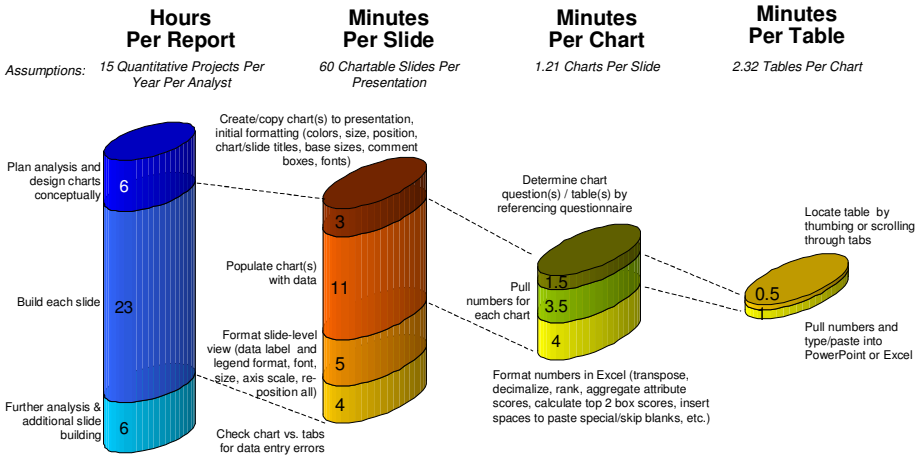
Task Time Requirements for a Typical* Project



→ Or 525 Hours Per Year Per Analyst On Reporting

*Based on Efficient Analytics sources

Based on our redundancy rates, we estimate a typical project presentation will take 12 hours to analyze and 23 hours to report. In other words, slide-building accounts for about two thirds of an analyst's time at this stage. That adds up to a total of 525 hours per year on reporting for each analyst, with 345 hours of that spent exclusively on the slide-building process. We also find that a typical slide will take 23 minutes to complete. This corresponds nicely with our experience with temp workers who have been hired to handle charting in the past. They typically will be able to handle 3-4 slides per hour. Since a typical temp will not be handling the slide set-up or checking functions in the Slide-level silo, our estimates appear to be accurate.

3) Time Requirements with PerMetrics

From the preceding sections, it becomes immediately apparent that the slide-building part of the reporting phase is both extremely complicated and extremely time-consuming. It is also cognitively very difficult for the analyst to switch back and forth between a creative (analytical) task and production (reporting) work. S/he really must literally switch hats constantly.

Further, the chart building process is very prone to error. Consider that most researchers will not handle all of these tasks in the logical fashion that they have been presented above. More likely, tasks will be performed simultaneously or out of order. For example, the slide set-up phase would more likely be handled at the planning and design phase of the Report-level silo than anywhere else, even though setting up slides entails a discrete set of tasks not related to analytical thinking.

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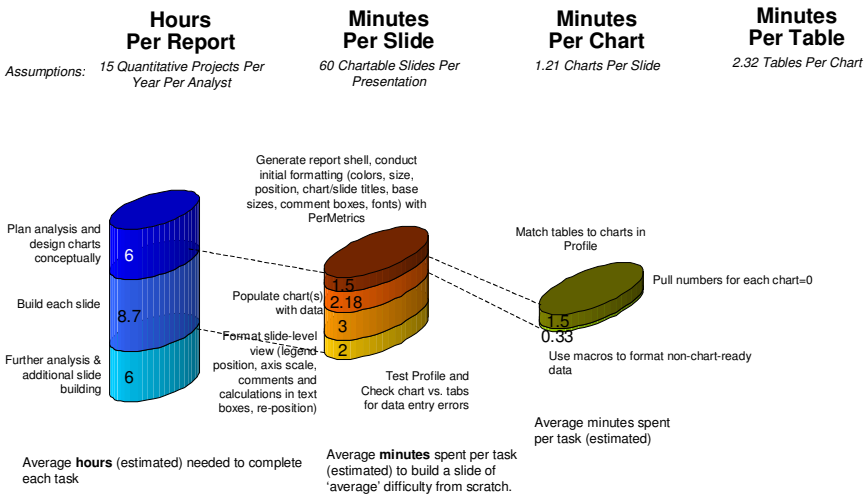
(Conceptualizing a chart or drawing a picture of it is analytical – but transferring that picture into PowerPoint format is not.) While mixing and matching tasks may create some efficiencies, it is much more likely that it will contribute to chaos. The researcher is always trying to keep track of what tasks have been performed and what tasks have not. Some jobs will likely be overlooked until the report is given a final check before submission. Other tasks may be performed badly – that is, mistakes may be made. This in turn creates a need to re-do tasks that were thought to have already been done before. Add to this the fact that in many cases *several* researchers will work on a given report and it becomes clearer still how difficult it is to perform all the tasks in an orderly, coherent and accurate manner.

PerMetrics ameliorates this situation. By automating much of the slide-building process, PerMetrics saves time, money and effort. Compare the graphic in the previous section with the slide below that shows how PerMetrics impacts time requirements.

Task Time Requirements with PerMetrics



Total Time:	20.7 Hours	@8.7*60=522 Min. or 8.7 Hours	@1.8*1.21=@2.2 Minutes	0 Minutes

→***Or 310 Hours Per Year Per Analyst On Reporting***

→***A savings of 215 billable hours per analyst per year (includes PerMetrics Profile set-up time)***

As you can see, harnessing a computer to automate the bulk of the slide-building tasks can make a dramatic difference. This is principally because the Chart- and Table-level silos can be virtually eliminated. However, PerMetrics also performs a number of other tasks – like setting up the initial presentation and various formatting chores – that also eliminate time requirements. On average, we estimate a savings of

215 billable hours[1] per year per analyst – and that includes PerMetrics' Profile set-up time and testing.

The 'sweet spot' for PerMetrics, however, is on projects such as the one cited at the beginning of this chapter. For that project, which requires 10 almost identical reports, the savings can be multiplied by all ten reports and then again by each successive wave of the project. Additionally, a savings of even more than 14 hours per report can be realized after the first report is completed. This is due to the fact that PerMetrics affords an even greater bump up in efficiency for subsequent reports than can be gained when reports are done by hand (Subsequent report efficiency typically goes up since, both with and without PerMetrics, a report shell already exists, the researcher does not have to match question numbers for each chart, etc.) PerMetrics affords this bonus productivity because it automates formatting tasks for decimal places, data labels, transposed or reversed data labels in the datasheet, etc. that must always be performed by hand when not using PerMetrics. With this in mind, we calculate a total savings of almost 150 hours per wave.[2]

[1] Chart building time requirements from the "Task Time Requirements for a Typical Project" graphic on page 5 are estimated at 525 hours per analyst/year. With PerMetrics this is reduced to 310 hours/year for a savings of 215 hours.

[2] With PerMetrics, 1 hour (for planning analysis and designing charts) + 3 (for building charts) + 3 (for subsequent analysis) = 7 hours per subsequent report times 9 reports = 63 hours + initial report at 6+9+6 (see the 1st silo in the chart on page 5 to see how 6+9+6 was derived) hours=21 hours for a total of 84 hours on reporting. Without PerMetrics the same workload might take 6+23+6 hours for the initial report and then 1+18+3 times 9 or 233 hours. 233 – 84 = 149 hours in savings.