You Can't Fix What You Can't Measure:
Toward Better Content Metrics

By Hans E. Fenstermacher, *Associate Fellow*

In the localization business, we live and die by metrics. Whether it's word count, price, engineering hours, percentages of translation memory leveraging, or number of pages, every step of our work is carefully measured. Costs and resources are allocated precisely to match those metrics, and we are regularly challenged to substantiate the business case for our services through objective and verifiable metrics.

Whether they know it or not, technical writers and content authors are in exactly the same boat. The fewer metrics technical writers have, the leakier the boat will be, and no amount of vigorous rowing or shouting protests against offshoring will keep it from sinking. Corporate financial decision-makers know little (and care nothing) about usability, user experience, and other "intangibles"; their thumbs-up or thumbs-down is based on things they can measure, like money. Only by playing the game according to the financial rules can writers expect to win any of the daily battles over budgets. Writers must adopt a global set of content metrics that objectively measure content on a more granular level, so they can make smarter decisions about content globalization and localization.

Why Do We Collect Metrics?

Historian E. H. Carr once wrote, "A fact is like a sack; it won't stand up until you've put something in it." Metrics are just a bunch of useless facts unless they are placed in context and used to guide actions. The kinds of metrics we collect, and the ways we interpret them, inform our decision-making. Multiple metrics and metrics types create broader choices; fewer metrics limit the actions that can be taken.

To illustrate different types of metrics, let's take an example of a process: my son Sam's effort to touch the top of his soccer goal box. Figure 1 shows Sam in mid-jump. This is a *static* metric, a snapshot state of the process at a point in time. Static metrics are of limited value, but they become useful when there are more of them. Multiple static metrics become *comparative*, because we can compare the state of the process at several points in time. By collecting static metrics throughout the process (Figure 2), we can create a set of *descriptive* metrics that characterize the entire process from start to finish.

These metrics haven't "stood up" yet, though. They describe what is, but their value truly lies in being a guide for what *should be*; in other words, they need to be *prescriptive*. We can now review the process and decide what changes to make to improve results (in Sam's case, push off harder, bend the right knee more, and so on). Then, as we repeatedly adjust, perform, and measure, we create a set of *normative* metrics designed to guarantee repeatable results (Figure 3). The results themselves constitute *probative* metrics that validate the reason the process was performed in the first place (Figure 4).

Measuring Localization Costs

Now, when it comes to localization, we collect lots of metrics. Most are static, like volume (word count, page count, graphics count), time on task, and cost; but there are also comparative metrics like translation memory (TM) leverag-

Table 1. Content Building Blocks for Original Content

Original			
Cost	Building Block	Words	Percent
$$$$	No Matches (new words)	47,800	41 percent
$$$	Low Fuzzy Matches	11,785	10 percent
$$	High Fuzzy Matches	17,677	15 percent
$	Exact Matches (100 percent)	23,450	20 percent
$-$$	Internal Repetitions	17,138	14 percent
	Total	**117,850**	**100 percent**

Figure 1. Static Metric

Figure 2. Descriptive Metrics

ing from project to project, and normative metrics like budget and turnaround time. But the value of the globalization and localization business cases we are all regularly called upon to make rests on the ratio of two kinds of metrics: costs versus benefits. To optimize value, we can either reduce costs or increase benefits, or both.

The benefits of improved, fully globalized content are obvious to those of us who produce it, but it's tough to come up with hard metrics on usability, user experience, the effect of the availability of localized versus unlocalized content, and so on. Even if we manage to assemble some metrics in these areas, they may ultimately fall on the deaf ears of corporate decision-makers anyway. Let's face it, the most convincing metric we have at our disposal is cost, and the lower the better.

In the localization services business, cost reduction is a nonstop objective and usually the top priority. Strategies to reduce multilingual costs abound (Figure 5), but they always represent a trade-off between the real cost reduction and its likelihood of success on several levels (ability to actually achieve the reduction, quality of the outcome, pro-

cess performance). The best strategies score high on both fronts, but these are rare. One successful metric of this type that has become a standard in our business is TM technology, because it has demonstrated high performance results and cost reductions over time.

Localizers have been using TM for years to provide static and comparative metrics, and these, in turn, have been driving decision-making on the buy side (budgets). But the vast majority of buyers have yet to take real advantage of TM as a normative and probative metric for content development. By internalizing TM metrics on the source side of content, technical writers could significantly enhance the business cases for their content globalization efforts.

Content Building Blocks

The hands-down most powerful content metric we have is word count. This metric tends to be viewed very differently by localizers than it is by content developers (see Figure 6). TM tools filter source content through a digital prism that parses content for localization. When content is broken down into these granular building blocks, it can be measured more effectively. The building blocks then become powerful prescriptive and normative metrics for cost savings in localization.

Before discussing how these building blocks work, let's review what TM tools do. As human translators translate each segment (usually a sentence) in a TM tool, the source-language segment and its translated counterpart are stored in a TM database. Each subsequent source segment is then compared to the TM database to determine how similar it is to translated segments. If a segment is 100 percent the same as one in the TM, it is considered an *exact match,* and the translation can be reused as is. (There is no room here to go into the pitfalls of an over-reliance on 100 percent matches. Suffice it to say, let the buyer beware.) If the words and syntax, punctuation, tagging (e.g., formatting), and other things vary from the segments in the TM, the amount of variance is measured as a percentage, called *fuzzy matching*; the closer to 100 percent the match is, the higher the match is considered to be. If the fuzziness falls below a certain percentage (this number varies depending on whom you ask and what time of day it is), or if it is 0, the segment is considered to be *new words* and must be translated from scratch. For a TM tool to work, there must, of course, be translated segments in the first place. However, new words, once translated, immediately become reusable if a matching segment recurs in subsequent new words. (These

Table 2. Post-globalization Metrics

Post-Globalization			
Cost	Building Block	Words	Percent
$$$$	No Matches (new words)	23,937	27 percent
$$$	Low Fuzzy Matches	11,525	13 percent
$$	High Fuzzy Matches	2,660	3 percent
$	Exact Matches (100 percent)	37,236	42 percent
$-$$	Internal Repetitions	13,299	15 percent
	Total	88,657	100 percent

Table 3. Localization Costs

Building Block	Original Cost	Post-Globalization Cost
No Matches	$11,950	$5,984
Low Fuzzy Matches	$1,768	$1,729
High Fuzzy Matches	$1,768	$266
Exact Matches	$586	$930
Internal Repetitions	$1,714	$1,330
Total	$17,786	$10,239

Figure 3. Normative Metrics

Figure 4. Probative Metrics

exact matches in new words are termed *internal repetitions*.)

Each TM building block is associated with a different level of localization cost. The dollar signs in Figure 6 show the relative costs of each type, with new words being most expensive and 100 percent matches being least expensive. The cost of 100 percent matches is relentlessly being driven down, but there is almost always still some cost associated with them. Only one type of content truly costs nothing: content that isn't there. (Eliminating content is the most effective cost-saving strategy of all; see Figure 5.)

In short, from the cost-savings perspective, the most effective content globalization strategies are to create content entirely from 100 percent matches (every bit reused from content that is already written and translated) or to have none at all (don't laugh—it's possible).

Lowering Costs through Content Globalization

With these extremes in mind, technical writers can actually build a sound multilingual content business case using the content building blocks. A case study using real data demonstrates how this works.

Suppose a software maker is about to release its long-awaited version 2.0 in multiple languages. Like most docu-

mentation sets, this release is a combination of legacy content (version 1.0), new documentation (added features), and edits (corrections, changes, arbitrary rewrites). TM analysis shows the content building blocks for this original content in Table 1.

These building blocks now form the basis of a content globalization strategy with three goals: (1) increase the number of reused words, (2) decrease the number of new words, and (3) maximize the consistency of the words that remain. To increase reuse, the main focus is on exact matches (100 percent). Where can more of them come from? The most likely place is the high fuzzy matches because, by definition, they are very close to exact matches to start with. Strategically editing the high fuzzy segments can shift them to the 100 percent type.

Next, the aim is to reduce the number of no matches (new words) as much as possible. Since there is no Translation

Memory to be concerned about here, these words can be freely rewritten and reduced. Some of the reduction in new words will inevitably reduce internal repetitions (exact matches within the new words), which are less expensive than new words. But don't forget that the only words that cost less than reused words are words that aren't there at all. Finally, the content globalization strategy aims to maximize the consistency of the remaining content by increasing the number of internal repetitions and shifting low fuzzy matches to high fuzzy matches wherever possible. The prime motivation is always to turn higher-cost content building blocks into lower-cost ones. The metrics post-globalization are shown in Table 2.

Has the strategy worked? And how! Figure 7 shows the results. Exact matches have more than doubled from 20 percent to 42 percent; no matches are down from 41 percent to 27 percent; internal repetitions and low fuzzy matches are up slightly, from 14 percent to 15 percent and from 10 percent to 13 percent, respectively. Still, the proof of the pudding, as they say, is in the eating. Let's examine the effect of this globalization strategy on cost reduction, which was the overall goal to begin with. Using identical tiered per-word pricing for the content building blocks, Table 3

Figure 5. Cost-reduction Strategies
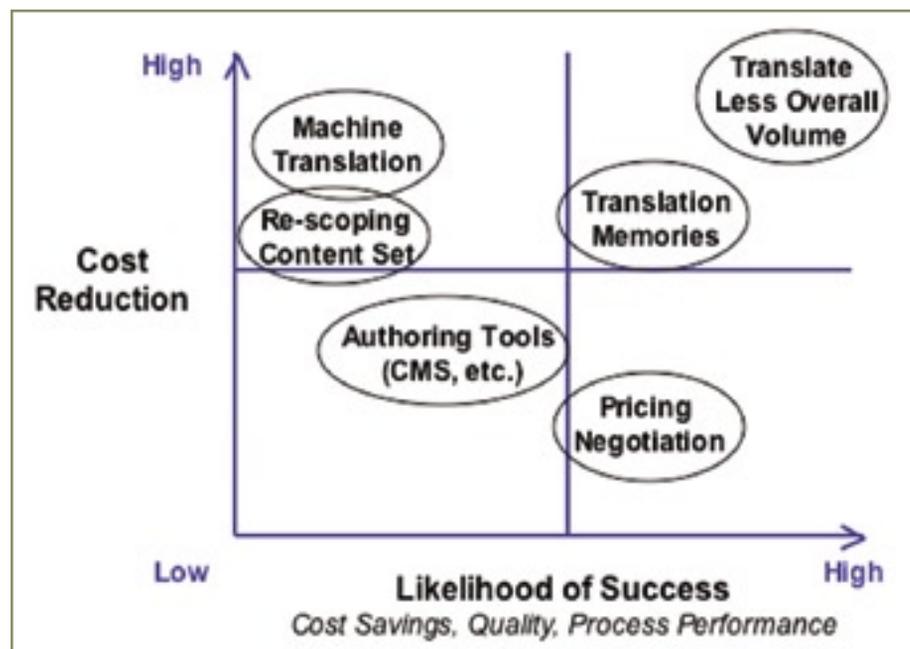
compares localization costs for an average language of the original and post-globalization content.

This comparison shows a reduction in cost not only overall, but in virtually every category of building block. Why? Because the globalization strategy used detailed metrics to target maximum content reuse and volume reduction *simultaneously*. This approach also creates a useful aggregate metric we can 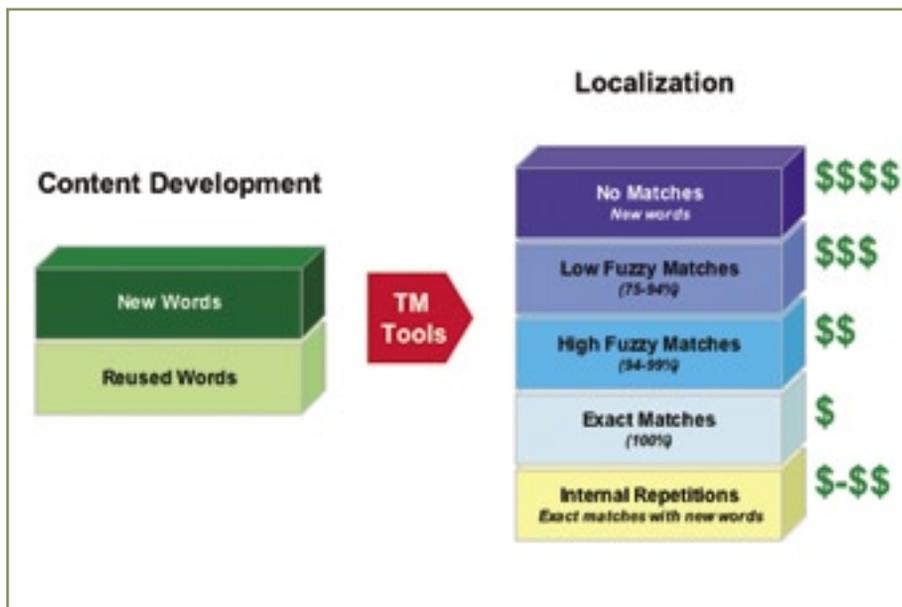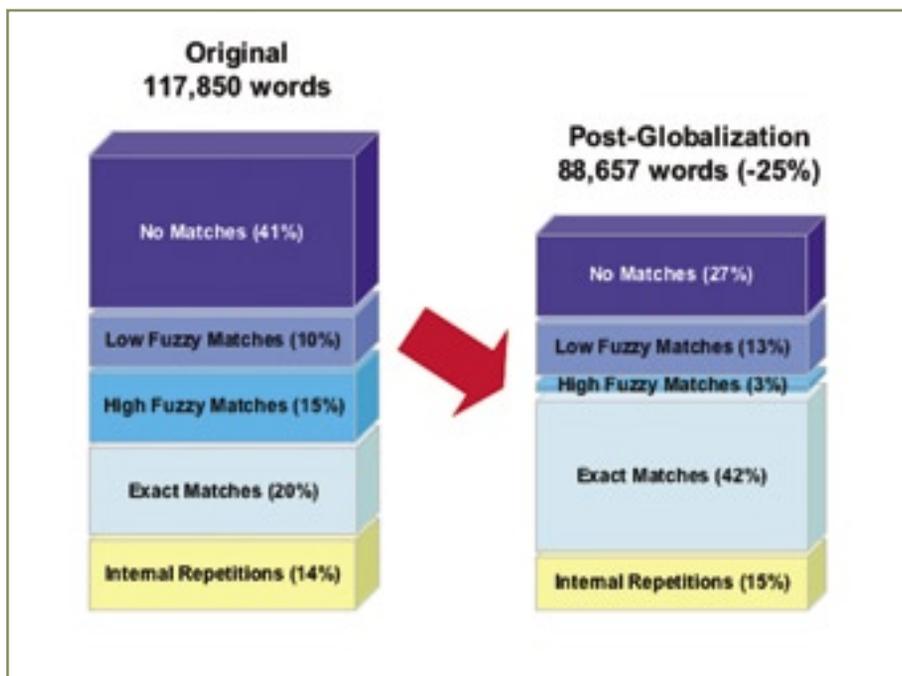call the *cost per leveraged word*, that is, the overall cost per word taking into account discounted localization pricing for various types of building blocks as well as the total number of words. In this case the cost per leveraged word dropped from 15.09 cents to 11.55 cents.

Toward Better Content Metrics

Many localization cost-savings approaches are based on one or two isolated metrics. Those approaches are flawed because they ignore the effects of changing one or more building blocks in content. For example, a singular focus on overall word count assumes that all content types are equal (but, as we have just shown, some are more equal than others). Indiscriminately cutting the number of words—whether by removing certain content subsets in the localized versions or chopping text—runs the risk of destroying significant value from low-cost, reused words, which may be lost along the way. On the other hand, a pathological fear of "damaging" Translation Memories and the consequent unwillingness even to touch legacy or partial-legacy content can leave money on the table (as our case study showed in terms of the high fuzzy matches).

A content globalization strategy based on content building blocks and on granular metrics represents a better approach. In terms of this case study, indiscriminate cutting might have left most of the new words intact, removing only the lowest-cost exact matches; leaving the content untouched would have meant overspending for localization. Instead, even though the original content contained a substantial number of leveraged words in translation (over one-third were either exact matches or high fuzzy matches), careful globalization work on the building blocks produced the optimal result—and, by the way, a much higher value TM for future releases.

Every piece of content is different and results will vary, but a content globalization approach based on these granular building blocks and metrics promises a far better localization value than virtually all other strategies. ❶

Figure 6. Content Building Blocks

Figure 7. Original vs. Final Metrics

*Hans Fenstermacher is president and founder of ArchiText Inc., a provider of localization and content globalization services. He has developed the ABREVE® methodology (patent-pending) for globalizing content and reducing its volume. Hans speaks six languages, and has been in the translation and writing business for twenty-five years. A former president of the Boston Chapter STC, Hans was recently named STC Associate Fellow. He welcomes comments and inquiries at **hansf@architext-usa.com**.*