The Measurement of Quality in Translation Using Statistical Methods

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Riccardo Schiaffino – President – Aliquantum

Franco Zearo – Worldwide Director, Language Services – Lionbridge Technologies

Overview

- Measuring Quality
- Translation Quality Assessment
- Quality Assurance Forms
- Error Categories
- Sampling
- Translation Quality Index
- Questions and Answers

"You cannot measure quality"

This is not true:

- There are certain components of translation quality that will always remain **subjective**.

However,

- There are other elements that can be **objectively** measured.
- By concentrating of these, we believe we can achieve a satisfactory measurement of translation quality.

Why is Quality Measurement Important?

- It is difficult to **improve** something if you cannot measure it.
- Such measurement should be **repeatable** and **objective**.
- Different evaluators should arrive at similar assessment for the same piece of translation.

Who Benefits from Reliable Translation Quality Measurement?

- Professional Translators
- Translation Companies and In-House Translation Departments
- Translation Customers and Users

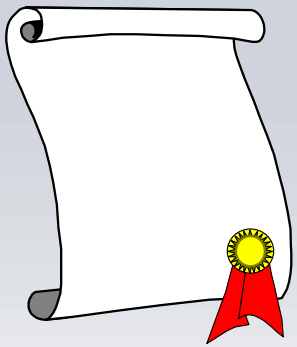
Our Definition of Quality

Functional approach to quality

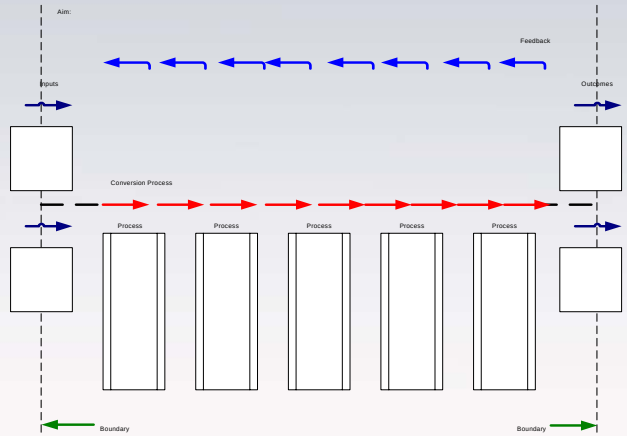
Quality is defined as
consistently meeting
the needs and expectations
of the customer or user

Product & Process Assessment

Translation quality assessment must apply to **both**:



The translated text
(the “product”)



The translation process
(the “process”)

QC vs QA

Quality Control (QC)

- Quality verification over the **whole** text.

  Example: Editing.

Quality Assurance (QA)

- Sampling techniques, control of quality over a (statistically significant) **sample** of the whole text.

  Appropriate use: Quality measurement.

Ideas from other disciplines

- Software project management techniques
- W. Edwards Deming and other quality assurance experts

Real Life Examples

- Development of translation quality measurement at J.D. Edwards
- Use of sampling techniques for quality assurance at Lionbridge

Development of Translation Quality Measurement at J.D. Edwards

From the concept of checklists to a spreadsheet of measurements

- Checklists are appropriate to control whether a certain action has been performed or not (e.g., spell check done or not – as opposed to a measurement of how many spelling mistakes were found)
- Based on LISA model (www.lisa.org)
- Flexibility (different settings for different languages)

Use of Quality Assurance Forms

- The LISA Quality Assurance Form

Quality Assurance Form

Language:	Reviewer:	Date:	Result: *Pass*	Comments:

Client Name	
Project Name	
Project Number	
Project Manager	

		Critical	max. error points + 1
Number of words	0	Major	5 points
Max error points allowed	0	Minor	1 point

Error Category	Minor	Major	Critical	total	max. allowed
Mistranslation	0	0	0	0	0
Accuracy	0	0	0	0	0
Terminology	0	0	0	0	0
Language	0	0	0	0	0
Style	0	0	0	0	0
Country	0	0	0	0	0
Consistency	0	0	0	0	0
			Total	0	0

More elaborate descriptions of the error criteria can be found in the LISA QA model version 1.0 Reference Manual.

The J.D. Edwards' QA Form Language Customization

- Weighting the major categories

Language Setup			
1 - Give appropriate weight to the four following categories (total must add up to 100%)			
Categories	Accuracy	50%	
	Style	15%	
	Grammar	30%	
	Formatting	5%	
	Total	100%	

The J.D. Edwards' QA Form Language Customization

- Weighting the items within the major categories

2 - Within the **Accuracy** category, give appropriate weight to the four following items (total must add up to 100%)			
Accuracy	Incorrect meaning	40%	
	Non-standard terminolgy	20%	
	Inconsistent terminolgy	20%	
	Untranslated SL	20%	
	Total	100%	
3 - Within the **Style** category, give appropriate weight to the three following items (total must add up to 100%)			
Style	Wrong register	40%	
	Inappropriate anglicisms	30%	
	Inappropriate use of passive/active voice	30%	
	Total	100%	
4 - Within the **Grammar** category, give appropriate weight to the five following items (total must add up to 100%)			
Grammar	Spelling errors	20%	
	Typos	15%	
	Grammar errors	35%	
	Syntax errors	25%	
	Punctuation errors	5%	
	Total	100%	
5 - Within the **Formatting** category, give appropriate weight to the five following items (total must add up to 100%)			
Formatting	Layout errors	50%	
	Font errors	40%	
	Double spaces	10%	
	Total	100%	

The J.D. Edwards' QA Form Language Customization

- Weighting the items within the major categories (detail)

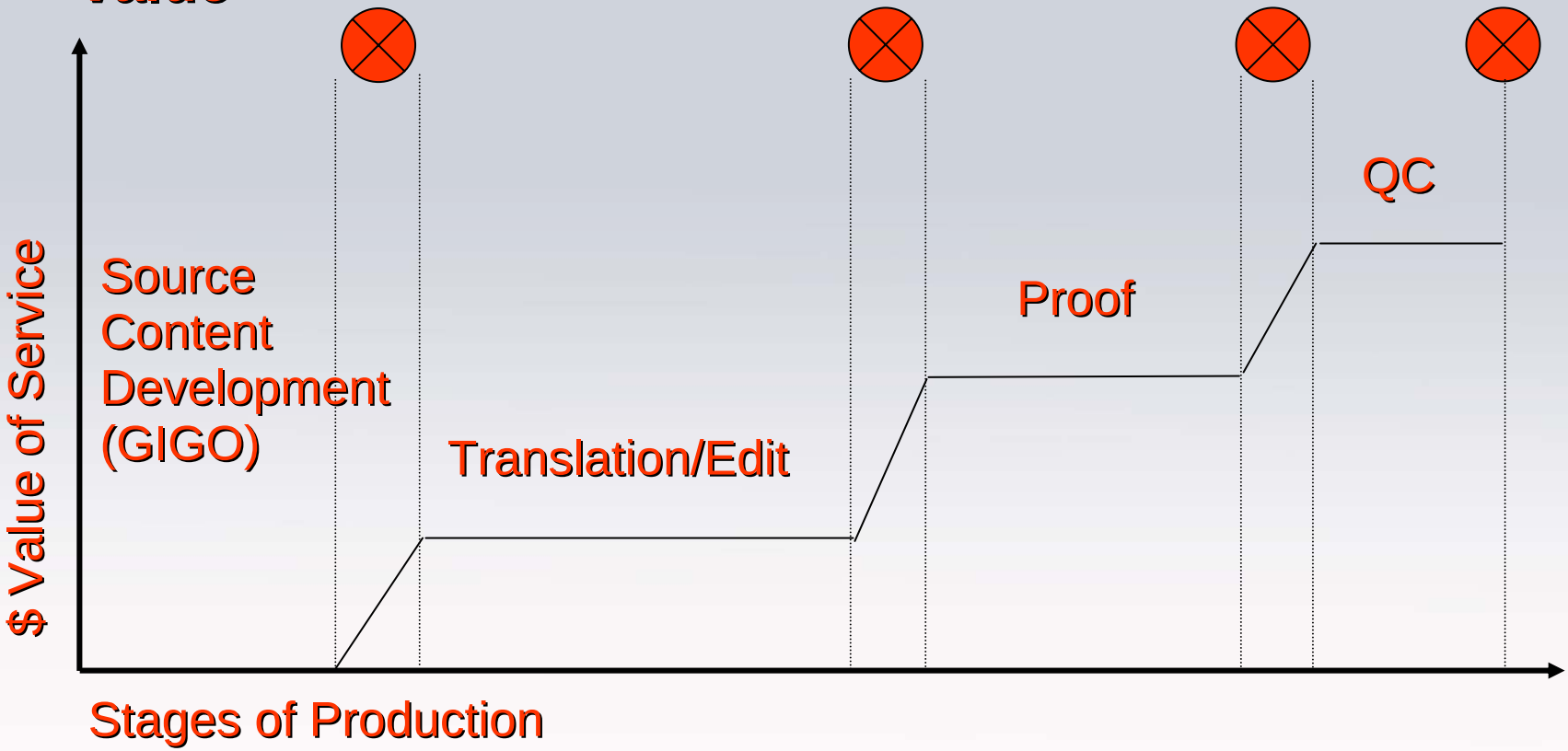
Accuracy	Incorrect meaning	40%
	Non-standard terminolgy	20%
	Inconsistent terminolgy	20%
	Untranslated SL	20%
	Total	100%

How We Worked to Develop Our Spreadsheet

- Determine type of errors, issues or problems
- Determine relative importance of issues (may be different for different languages; e.g., spelling errors in English, French or Italian)
- Determine which are the responsibility of translation
- Determine tolerance limits for various levels of quality

Inspection Points

Key Principle: Reject "defective material" at its lowest value



Purposes of sampling according to LISA

- To determine whether something has been done or not.
- To accept / reject the batch of product at hand.
- To determine if the process that produced the product at hand was within acceptable limits.

Guidelines for Sampling

- **Select a sample**
  - Selection criteria (e.g. random, systematic)
  - Size considerations
  - Cost considerations
- **Evaluate the sample**
  - Repeatable, reproducible, objective
- **Investigate the outcome / causes**
- **Correct / Improve**

Summary: Error Categorization

- Select a (small) set of categories
  - CTQ: Critical-To-Quality categories
- Provide clear definitions
- Set tolerance limits
  - Min / Max # of errors per X words
- Assign a weight
  - Critical, Major, Minor

What's left to do ?

The concept of a "Translation Quality Index"

Translation Quality Index (TQI)

A number—obtained by the rigorous application of a QA form—that is indicative of the quality of a given translation

Index / Indices

- Depending on one's purpose, there may be more than a single TQI.
- E.g., a TQI may be developed for external purposes (to standardize the work obtained from outsourcing).
- Another TQI may be primarily for internal purposes (to measure the quality of a given special process).

An Example of a "Translation Quality Index" (1)

LISA QA Model ver. 1.0 (1995)

3,000 words (12 pages @ 250 words)

- **30 error points**

30 error pts / 3,000 words = 1.0%

10,000 error pts out of 1 million words

DPMO = 99.0% = TQI

An Example of a "Translation Quality Index" (2)

Microsoft Quality Standards for Print ver. 1.0 (1998)

10,000 words (40 pages @ 250 words)

- **0 major errors**
- **15 minor errors**

15 errors / 10,000 words = 0.15%

1,500 errors out of 1 million words

DPMO = 99.85% = TQI

An Example of a "Translation Quality Index" (3)

2,000 words (8 pages @ 250 words)

- 1 critical error
- 2 major errors
- 3 minor errors

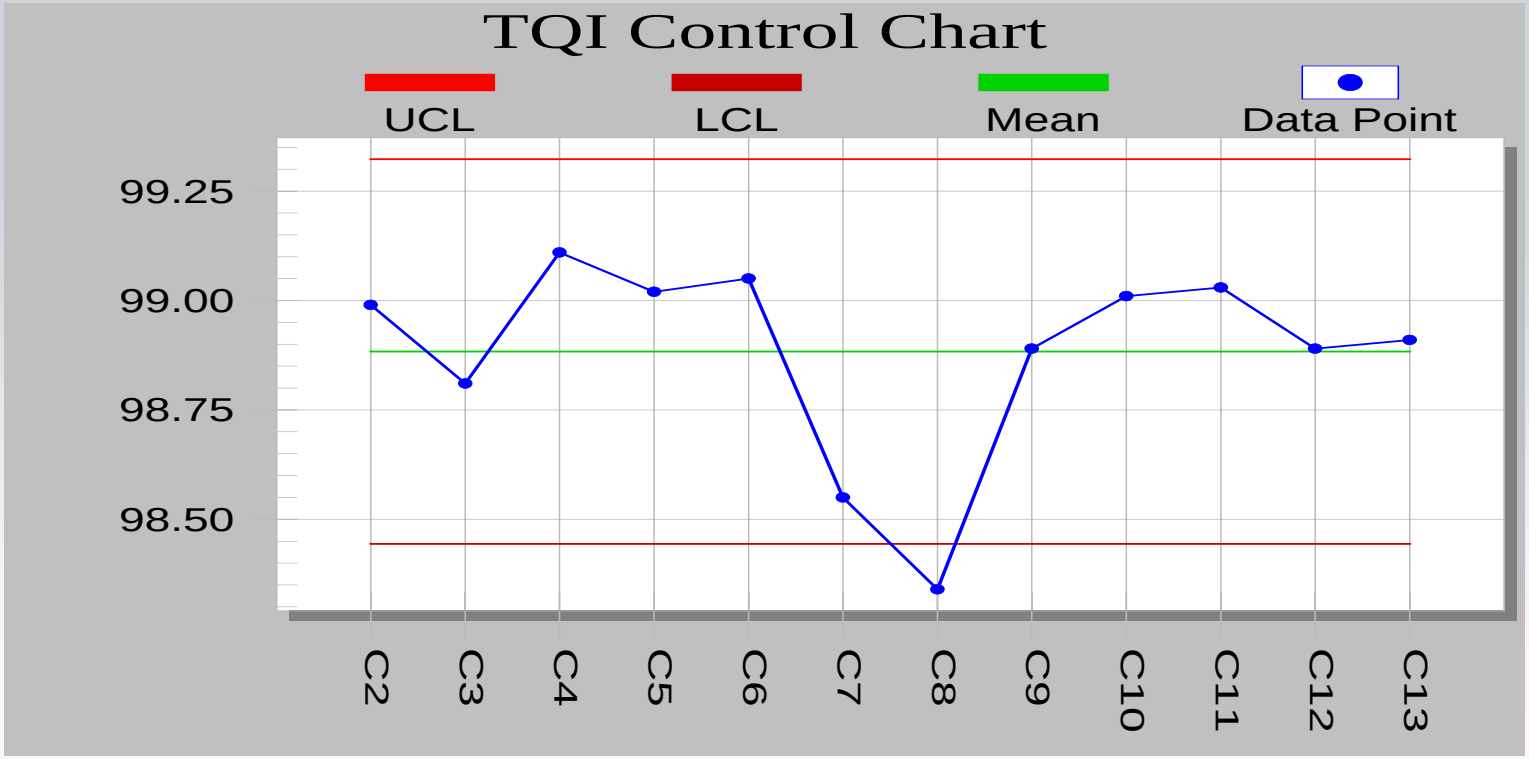
6 errors / 2,000 words = 0.3%

3,000 errors out of 1 million words

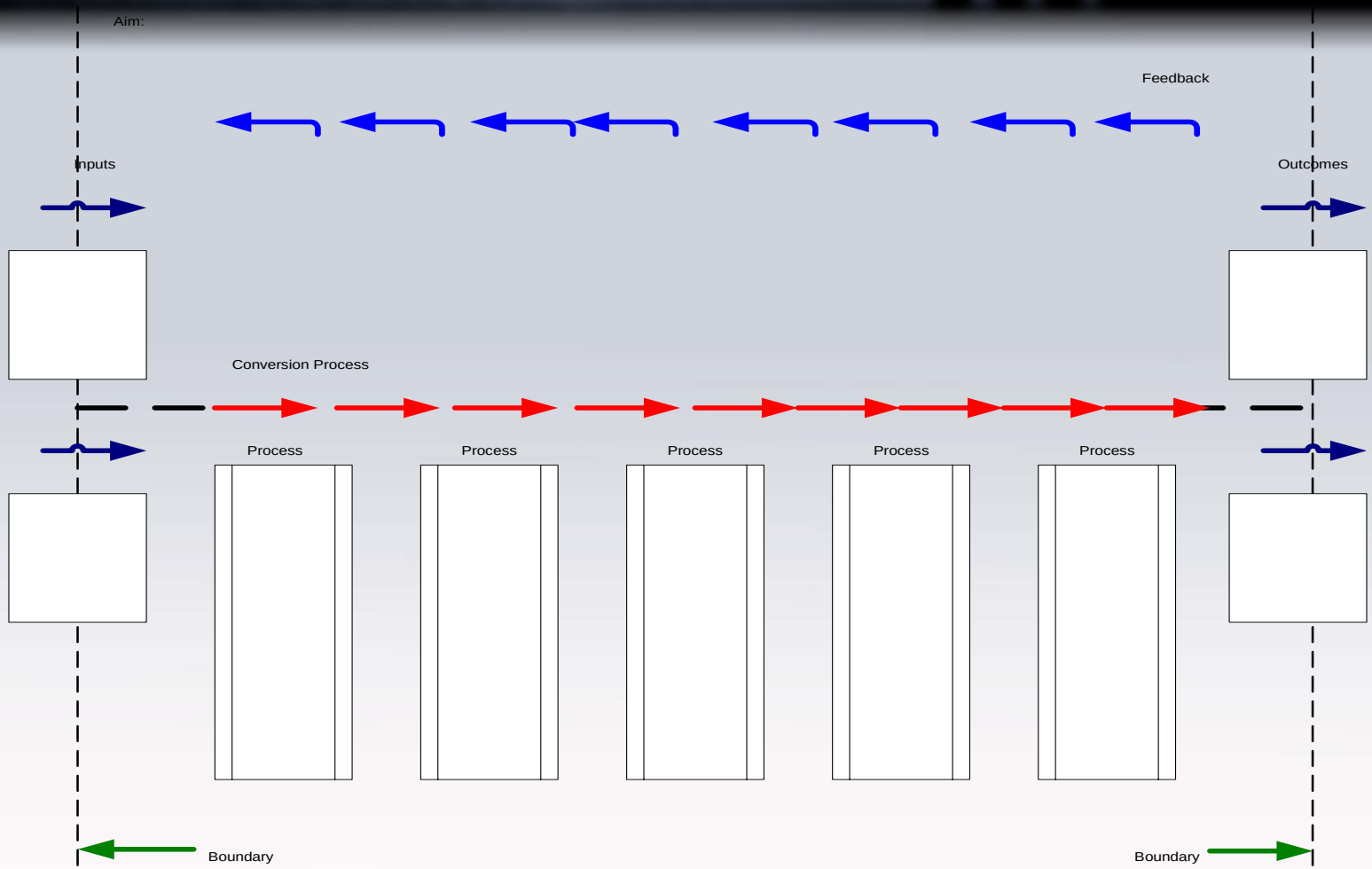
DPMO = 99.7% = TQI

Control Charts

- **Concept of “statistical control”**



Process Flow Diagram



How to Apply Statistical Methods for Quality Improvement

1. Define error categories and tolerances
2. Create a QA form
3. Obtain a TQI index
4. Use the TQI index to improve the translation process

Contacts

Riccardo_Schiaffino@aliquantum.biz – Aliquantum, Inc.

Franco.Zearo@lionbridge.com – Lionbridge Technologies, Inc.

For more information about translation issues, visit

TranslationQuality.com

Biographical Notes on the Authors

Riccardo Schiaffino

Riccardo Schiaffino worked as translator, translation manager and special software translation project lead for a major software company, and now leads a small company he established with a few experienced colleagues. As a translation manager, Riccardo worked on the improvement of translation quality and on translation quality metrics and tools. He holds an MA degree in Translation, and has been working in translations for over 20 years, first in Italy and then in the U.S. Riccardo is ATA accredited.

Franco Pietro Zearo

Franco Pietro Zearo is a project manager with Lionbridge Technologies in Boulder, Colorado. He holds a degree in translation from the Advanced School of Modern Languages for Translators and Interpreters at the University of Trieste, Italy, and earned an MBA from the University of Phoenix. Before joining Lionbridge in 1996, he worked as a freelance technical translator in Italian, English, and Russian. At Lionbridge, he has held positions in translation, localization analysis, presales, and cultural and globalization consulting. He has been responsible for translation quality on numerous projects for many Fortune 500 clients. In his previous role as senior technical translator, he helped define best practices for the translation department.