



# Linguistic QA for MT of User-Generated Content at eBay

eBay Machine Translation Linguistic Team

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# MT @ EBAY: INTRODUCTION

# Why we do it: promoting cross-border trade

Geo Expansion: localized interface + MT

August 2013 – in-house SMT

January 2014 – MT for Russian



# eBay MT translates:

- search queries
- item titles

Татуана | Скидки дня | Продажи | Служба поддержки

Покупки по категориям **сумка** Все категории

Сортировать: по наилучшему соответстви... Просмотр:

4 226 955 результат(а/ов) для сумка

новый леди Ново наплечная сумка **610,95 руб. до 627,71 руб.** Купить сейчас

**ТАЙСКИЙ сумка ручной работы слон хиппи Ново, наплечная сумка, винтажный, хлопок шелк** **592,56 руб.** 28 ставок(-)

новый леди женщин Ново PU кож... **571,72 руб.** Купить сейчас

**подлинный CHANEL белый Са...** **56 191,25 руб.** 29 ставок(-)ок

Thai Bag Handmade Elephant Hippie,HOBO,Shoulder bag,Vintage,Cotton Silk

eMT currently supports the following language pairs:

Language	Search Queries	Item Titles	Default?
Russian	RU>EN	EN>RU	Y
Spanish (Lat.Am. & Spain)	ES>EN	EN>ES	Y
Br. Portuguese	PT>EN	EN>PT	Y
French	FR>EN		Y
Italian	IT>EN		Y

# Challenges for MT at eBay



# Challenges for MT at eBay

1. **Variety of context:**  
~4K categories on ebay.com

<b>Categories</b>	
<b>Clothing, Shoes &amp; Accessories</b>	
<b>Women's Clothing</b>	
Athletic Apparel	(77,927)
Coats & Jackets	(341,585)
Dresses	(994,646)
Hosiery & Socks	(78,993)
Intimates & Sleep	(465,418)
Jeans	(144,234)
Jumpsuits & Rompers	(33,580)
Leggings	(50,699)
Maternity	(30,494)
Pants	(161,877)
Shorts	(55,478)
Skirts	(157,695)
Suits & Blazers	(43,588)
Sweaters	(177,685)
Sweats & Hoodies	(325,659)
Swimwear	(155,078)
T-Shirts	(1,566,824)
Tops & Blouses	(684,313)
Vests	(28,586)
Mixed Items & Lots	(3,513)
Other	(35,142)



# Challenges for MT at eBay

## 2. User-generated content:

- Spelling errors/typos/mixed language

*sansung samsug samsumg samung amsung samnsung smsung samsuns*

- Keylock issues

*ω3ρυτμγ 5 ЪI*

- Syntax

*Oval Picture Photo Frame Tibet Silver Golden Copper Bronze Pendant Charm Finding*

- Improper, broken English

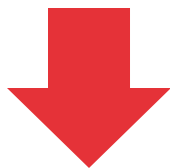
*ull buy em rii nah thru paypal*

*you will buy them right now through PayPal*



# To improve performance of SMT:

- improve quality of training corpora
- improve tokenization algorithms
- improve named-entity recognition



Machine Translation Language Specialists



# ROLE OF MTLs

Machine Translation Language Specialists

# Role of MTLs:

- Evaluate and analyze raw MT output
- Review and evaluate MT output translated and/or post-edited by vendor
- Ongoing post-launch LQA on SQ and ITT in production
- Named-entity/keylock tagging

! Ensuring and maintaining high quality of **training** and **testing corpora**

# Working with Vendors:

Training data > post-edited (>300,000 words per language per training cycle)

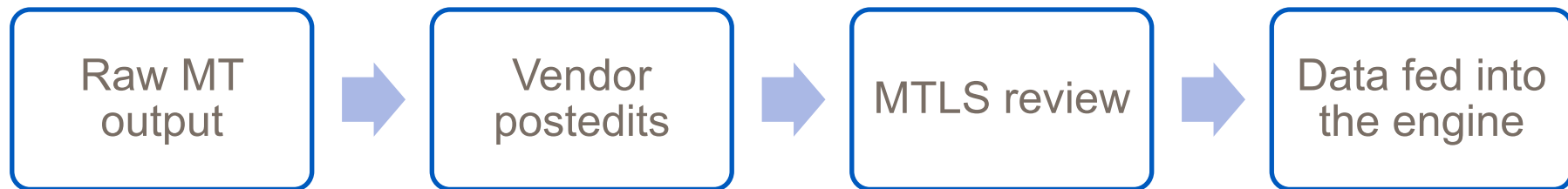
- Search queries
- Item titles
- Item descriptions

Testing data: > human translation (> 40,000 words per language per training cycle)

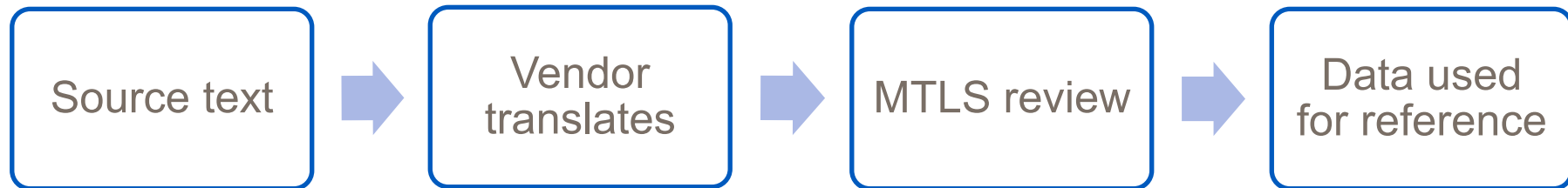
- Search queries
- Item titles
- Item descriptions

# Basic LQA Flow

Training data:



Testing data:



# LQA: CHALLENGES AND SOLUTIONS

Vendors and MTLs

# Challenges for Vendor

- Unfamiliar multi-domain content (~4K categories, ~30 meta categories)
- Lack of context
- User-generated source content: typos, broken word order, inconsistent terminology usage
- eBay-specific approach and requirements aimed at an MT engine, not human readers (preserve the syntax of IT, avoid preferential stylistic changes, etc.)



# Our Solution

- Compiled set of modular guidelines with main part applicable to most projects
- Provide reference materials: mindmaps, glossaries (brand names, acronyms, eBay-specific terms), training videos
- Provide context by adding category information
- Limit research time to 2-3 min max and recommend staying within eBay
- Allow 5% of strings to be left unedited if incomprehensible
- Provide extensive training and ongoing communication and support





# Visual Guidelines (mindmaps)



\* Courtesy of MT linguist Juan Rowda

# Challenges for MTLs

## Review Requirements:

- Time-efficiency  large volumes, tight deadlines
- Effective sampling  consistency of quality throughout the file
- Systematic feedback  easily implemented, serve as additional training
- Error metrics  reflect eBay-specific requirements

# Our Solution

- **Feedback and Error Metrics:**  
we customized error typology

## *Challenging areas:*

- Meaning vs spelling
- Fluency vs style
- Localizing
- Word order
- Brand names
- Acronyms

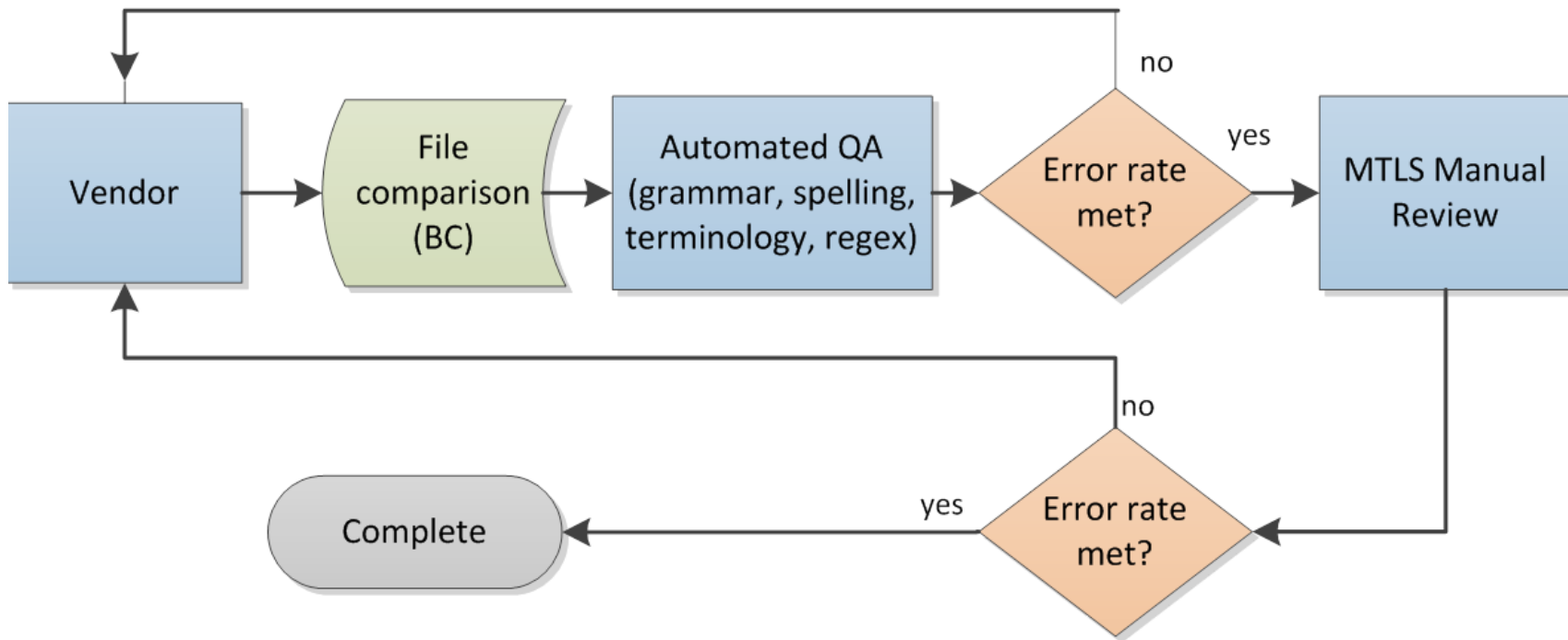
Issue categories
Accuracy - Mistranslation
Accuracy - Addition/Omission
Accuracy - Untranslated words
Accuracy - DNT word was translated
Accuracy - MT was not postedited
Accuracy - Terminology
Language - Spelling
Language - Grammar
Language - Punctuation
Language - Capitalization
Style Guide - Do not localize
Style Guide - Source not corrected
Style Guide - Acronyms
Style Guide - Other
Feedback not implemented
Severities
Minor
Major
Critical
Neutral

# Our Solution

## Semi-Automated **3-Step Sampled Review Process:**

1. **Beyond Compare:** file comparison
2. **Checkmate:** predefined and custom checks on bilingual documents. Error reports to share with vendors.  
**LanguageTool:** grammar and spelling checker; integrated with Checkmate; predefined and custom rules.
3. **Manual Review:** using internally developed template

# MT LQA FLOWCHART



## Benefits:

- Scalability: documentation and QA process easily applicable to new languages
- Productivity/time efficiency: throughput improved x2
- Reliability: combination of tools and manual review
- Preciseness: customized and adapted to each language



# Q&A

