

IMUG: Netflix Globalization

November 21, 2013

NETFLIX®

Agenda

- Personalization
- Architecture for Scale
- Localization Workflow

Personalization and Architecture for Scale @

The Netflix logo is centered in the lower half of the slide. It consists of the word "NETFLIX" in a bold, white, sans-serif font with a black drop shadow, set against a solid red rectangular background.

NETFLIX

First some basics..

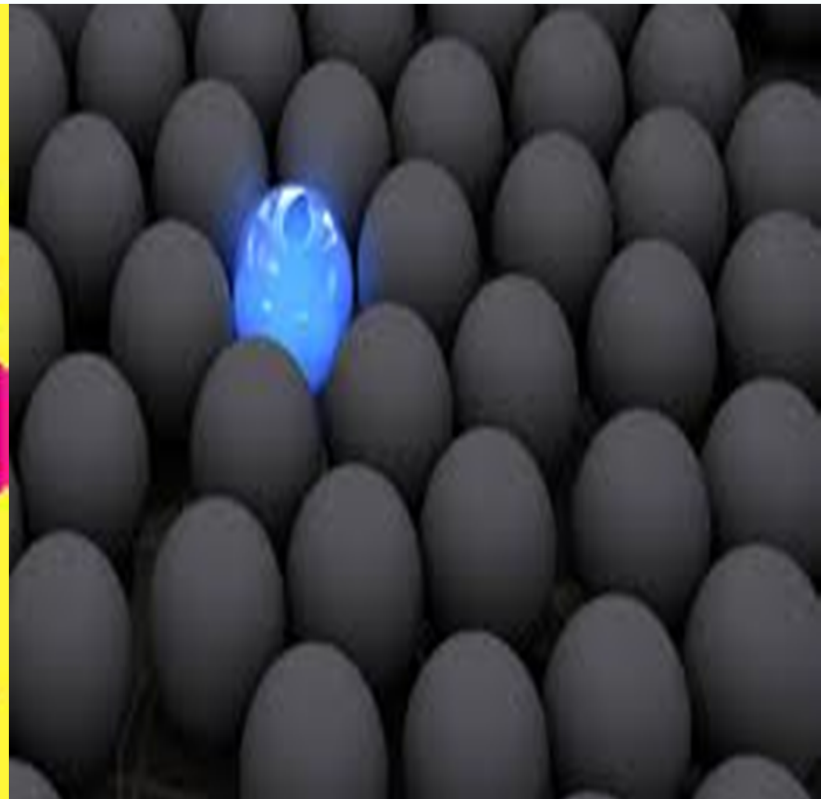


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Video Metadata

- Genre, Rating, Cast
- Contract information
- Streaming and deployment information
- **Subtitles and Dubbing**
- **Trailers, stills, actual content, artwork**
- **Titles, alt-genres and maturity ratings**
- Hundreds of such attributes..

Personalization – winning the moment of truth



Personalization Goal

To provide the most compelling viewing choices and the best possible viewing experience

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International Expansion

Canada – Sept
2010

Latin
America –
Sept 2011

UK and
Ireland –
Jan 2012

Nordics –
Oct 2012

Netherlands
– Sept 2013

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The landscape

- Over 40 million customers
- More than 50 countries and territories
- Over 100 Billion Meta-data operations a day
- Over 1 Billion viewing hours per month



Personalized Row Display

The screenshot displays the Netflix user interface for a user named Shobana. The top navigation bar includes the Netflix logo, links for 'Watch Instantly', 'Just for Kids', 'Personalize', and 'DVDs', a search bar with the text 'Movies, TV shows, actors, directors, genre', and the user's name 'Shobana'.

Below the navigation bar, there are two main sections:

- Recently Watched:** This section is currently empty.
- My List:** This section contains a row of seven items: 'kai po che', 'The Tale of Despereaux', 'Margin Call', 'Drive', 'A Cat in Paris', 'Midsomer Murders', and a partially visible 'RES' item.

Below the 'My List' section, there is a section titled 'Top 10 for Shobana' which displays a row of ten items: 'Kick Buttowski: In the City', 'Disney Special Agent OSO', 'Daniel Tiger's Neighborhood', 'Dragon Tales', 'Friends: New Girl in Town', 'Ballet Dreams', 'The Very Hungry Caterpillar', and a partially visible 'The Simpsons' item.

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Geo-aware Rendering

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Homepagina

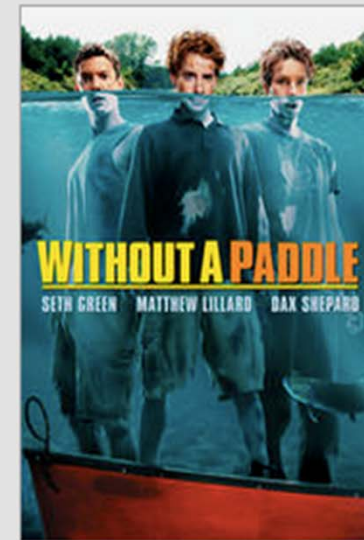
Kids ▾

Genres ▾

Personaliseren

Feelgood comedy's

Op basis van je
belangstelling voor...

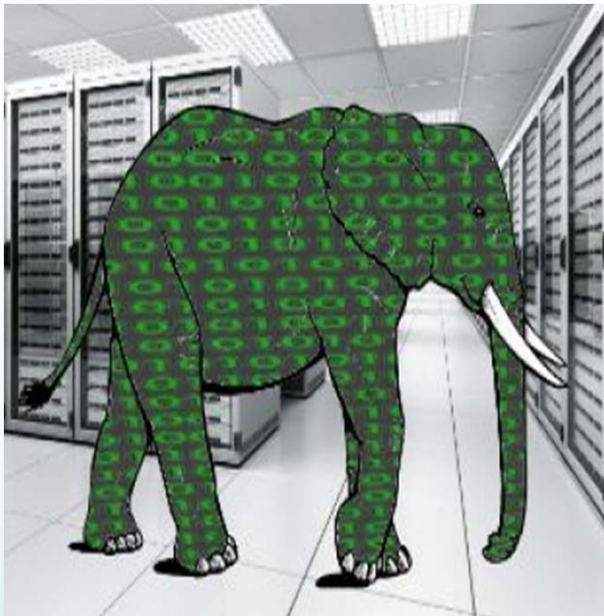


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What uses localization data

- **User-specific choices e.g. language, viewing behavior, taste preferences**
- Recommendation algorithms
- **Rendering and Playback**
- CDN Deployment
- **Billboards, trailer display, streaming**
- Original programming
- Basically all our streaming applications..

Our Solution



Publishing Engine
consumes localization
events

Artifacts with localization
data to S3

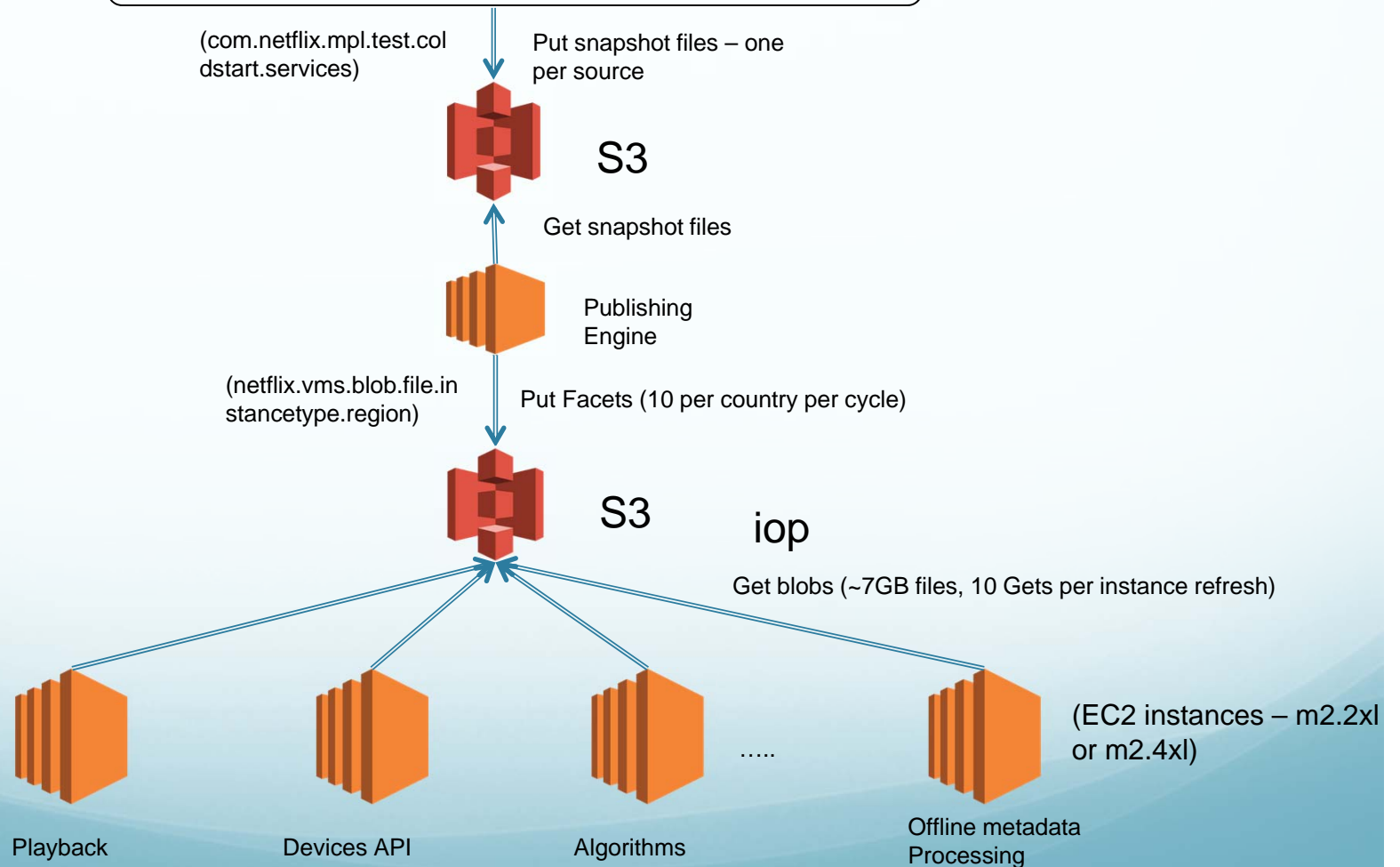
Metadata Cache reads
S3, serves high
availability apps deployed
on EC2 (~6000 instances)

Shared libraries to read
and interpret L10N config

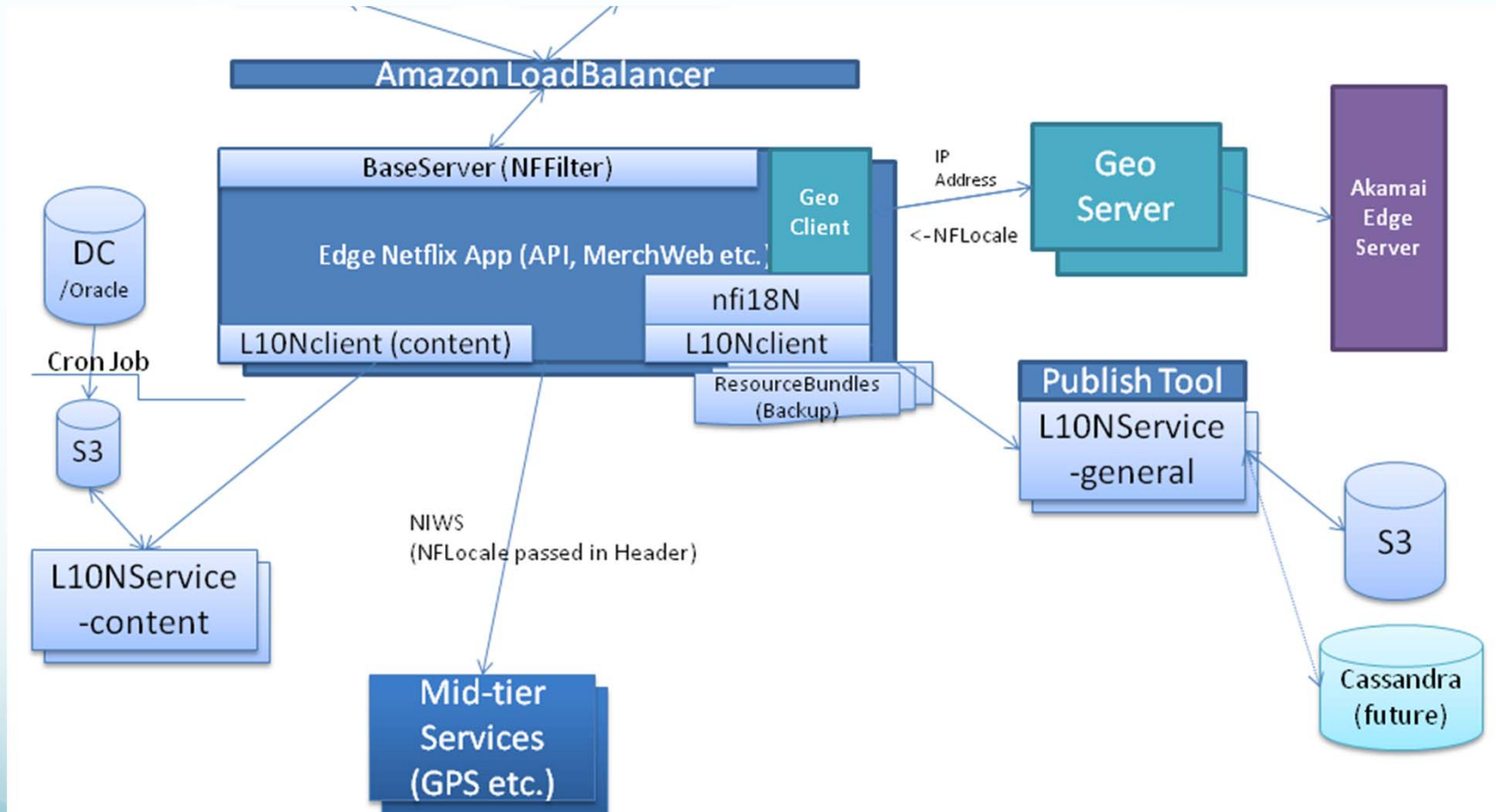


Metadata Platform Architecture

Localization and Data Entry Tools



I18N/L10N Service



How a title goes live @ Netflix

The Netflix logo is centered in the lower half of the slide. It consists of a solid red rectangle with the word "NETFLIX" written in white, bold, sans-serif capital letters. The letters have a slight 3D effect with a dark shadow on the right side.

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Starts when a contract is signed

- What countries are the tile available in
- Does it require Sub Titles or Dubbed Audio and for what languages
- How will the title be promoted
- Is it an original title

Work begins on setting up the title

- Obvious- Display name, synopses, other text
- Less obvious – Ratings, Awards, subtitles, dubbed audio
- Complex – Episodes, Artwork, Movie titles, characters

Creating translation jobs

- Determine required languages for each metadata type for each country
- What are acceptable fallback languages
- Based on contracts see what languages
- Prioritize based on when it becomes available
- Is it a kids title

Translation jobs

- Create requests for valid use cases
- Send and track to translators
- Withhold publishing for non-translated metadata
- Update source systems upon completions
- Publish results when complete

Internationalization, Localization & Linguistic Quality @

The Netflix logo is centered in a red rectangular box. The word "NETFLIX" is written in a bold, white, sans-serif font with a black drop shadow, giving it a 3D appearance.

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Internationalization

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I18N within Netflix

- Encompasses general I18N elements:
 - Enabling translation of all textual elements, support of country-specific currency & date/time formats, display and input, search/sorting, country/locale ids and locale announcement.
- I18N elements specific to Netflix business:
 - Per country MOP, ratings systems fallbacks, meta-data fallbacks (titles, box art), user profiles....

I18N Support

- General I18N elements supported via NFI18N library
 - Utilize ICU (International Components for Unicode)
- I18N Explorer
 - Nice reference tool for country-specific I18N:
 - Currency, date/time formats, etc...

Current I18N Challenges for Netflix

- Consolidation of I18N-related data resources into single "source of truth"
- More I18N rigor/code consistency
- Better rationalization - per-country language fallback logic

Future I18N Challenges for Netflix

- To date, all supported countries are Latin-1 based.
- New markets have impacts on display, layouts and search.
- More fonts, differing font sizes, font variations (Asia), text rendering, processing/display/input of bi-directional text (Middle East) and complex text scripts (Indic, Thai, Arabic).
- Support of new input methods required for these regions.

Localization

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Languages & Countries

We localize into **9** languages and our service is available in **50** countries and territories

- UK English
- French Canadian
- Latin American Spanish
- Brazilian Portuguese
- Danish
- Finnish
- Swedish
- Norwegian
- Dutch

Netflix Loc Team

- In-house Language Specialists
- Localization Engineers
- Localization PMs
- Localization QC specialists
- Internationalization Engineer

We face unique localization challenges...

NETFLIX Homepagina Kids ▾ Genres ▾ Voorkeurprofiel ▾ Films, tv-series, acteurs, regisse Q

Lady en de Vagebond (Lady and the Tramp)

1955 **AL** 1 u 16 m

★★★★☆

Gemiddelde van 3.105.476 beoordelingen:
3,9 sterren

Beleef de spannende avonturen van de liefdevolle Lady, de verwende Cocker Spaniel, en Vagebond, de losbandige bastaard met een hart van goud.

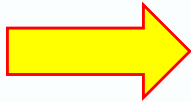
“Subs & Dubs”



Wacht met het opheffen van de vloek
tot het geschikte moment.

We localize content
from a variety of
sources and formats...

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UI resources
Legal content



Public Knowledge base
Internal Knowledge base



Movie Metadata

**Internal Proprietary
Tools**



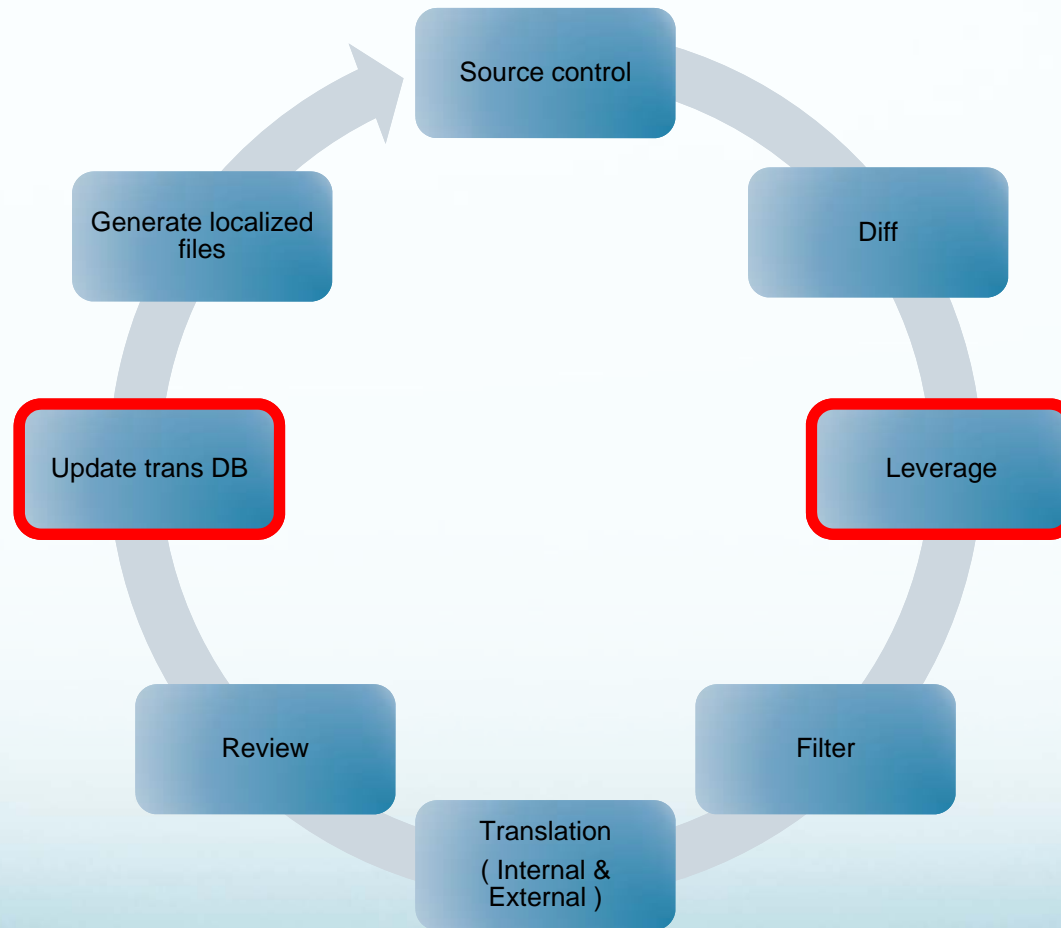
Email

NETFLIX

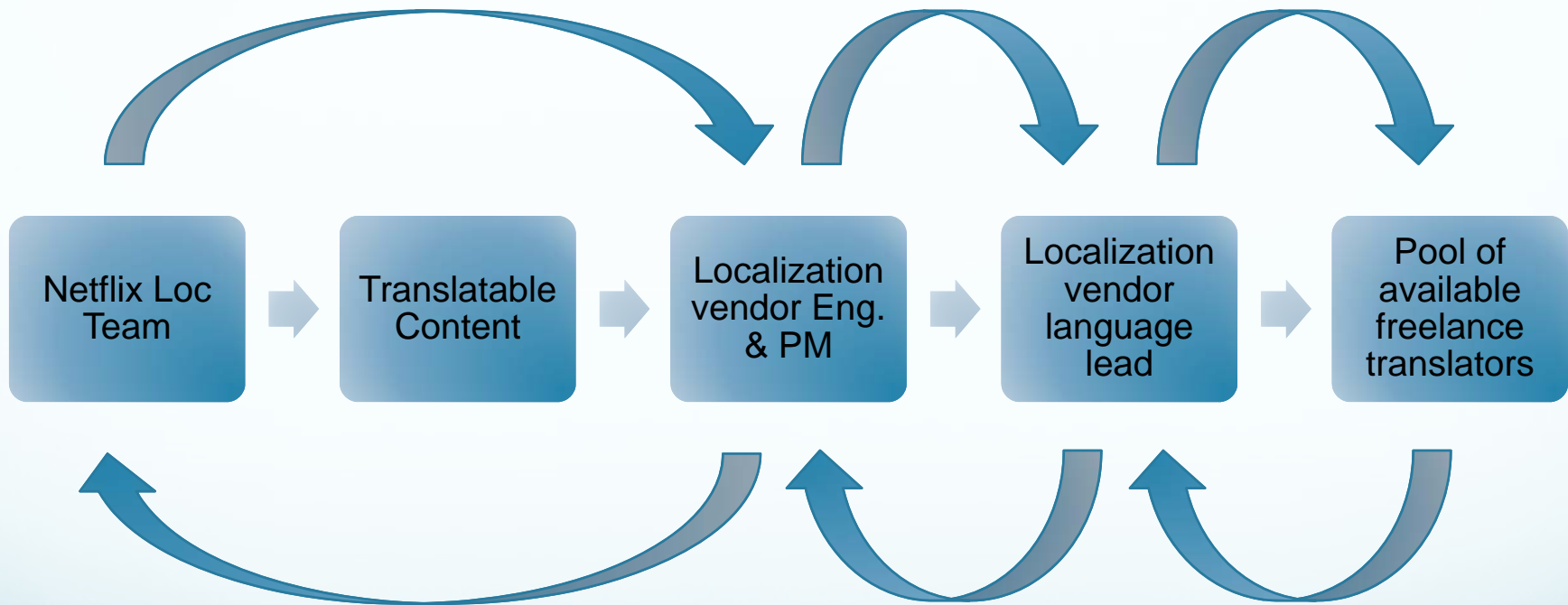
Formats we currently handle...

- .properties
- HTML
- resx / resw
- .strings
- XML
- .ini
- MS Office, email, PhotoShop...
- ...we can work with anything (within reason)

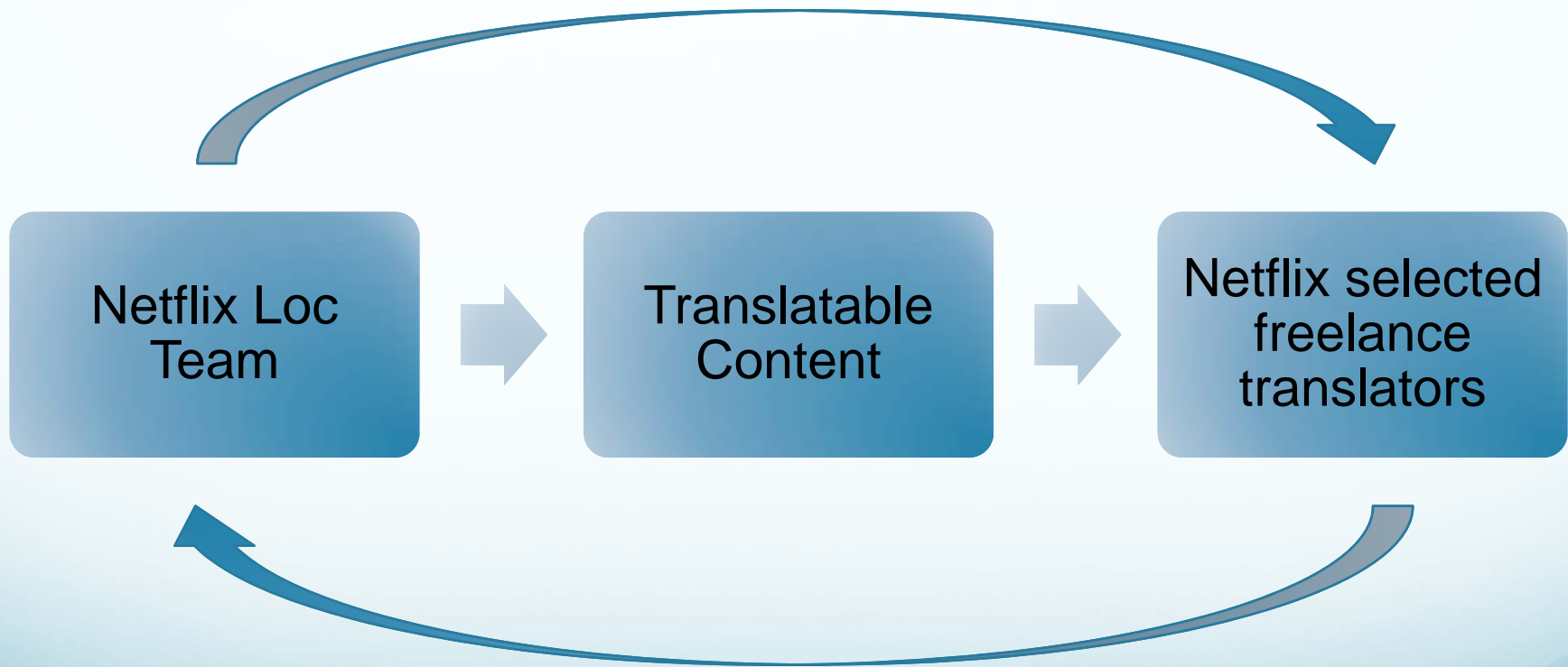
All this content flows through GlobalSight, our translation management system



Translation Vendor Model



Experimental Model



1 MONTH FREE TRIAL

Watch TV shows & movies anytime, anywhere. Only \$7.99 a month.

Start Your Free Month



▶ Watch on your PS3, Wii, Xbox, PC, Mac, Mobile, Tablet and more.

▶ TV shows & movies streamed instantly over the Internet

▶ No commitments, cancel online anytime

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Watch instantly on your TV with devices that stream instantly from Netflix

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Vragen? Bel 0800 - 123 45 67 (24 uur per dag)

Aanmelden voor leden

1
GRATIS
PROEF-
MAAND

TV-series en films kijken,
waar en wanneer je maar wilt.
Voor slechts € 7,99 per maand.

Start je gratis maand

► Kijk op je PS3, Wii, Xbox, pc, Mac,
mobiel, tablet en meer

► Direct streamen van tv-series
en films via internet

► Geen verplichtingen, op elk
moment online op te zeggen

[Gratis proefmaand starten](#) | [Bladeren door collectie](#) | [Hoe werkt het?](#) | [Details gratis proefmaand](#)

[Cadeaubonnen: kopen/inwisselen](#) | [Over ons](#) | [Partners](#) | [Blog](#) | [Contact](#) | [Investeerdersrelaties](#) | [Vacatures](#) | [Media Center](#)

[Kijk direct op je tv met apparaten die rechtstreeks vanaf Netflix streamen](#)

Door het gebruik van de Netflix-dienst en deze website stem je in met onze Gebruiksvoorwaarden en ons Privacybeleid.
© 1997-2012 Netflix, Inc. All rights reserved. U.S. Patent Nos. 6,584,450; 7,024,381; 7,631,323; 7,403,910; and 7,617,127. (us-east-1 b81980df US) [2291/9 -]



How I Met Your Mother

2005 B-15 136 Episodes



Ted's epic search for his soul mate is told largely through flashbacks, as an adult Ted recounts to his kids how he met their mother.

Starring: Josh Radnor, Jason Segel, Neil Patrick Harris

Creators: Carter Bays, Craig Thomas

Season 1

1. Pilot





How I Met Your Mother

2005 TV-PG 184 Avsnitt



Teds episka sökande efter sin själsfrände berättas till stor del genom flashbacks när en vuxen Ted berättar för sina barn om hur det gick till när han träffade deras mor.

Medverkande: Josh Radnor, Jason Segel, Neil Patrick Harris

Skapare: Carter Bays, Craig Thomas

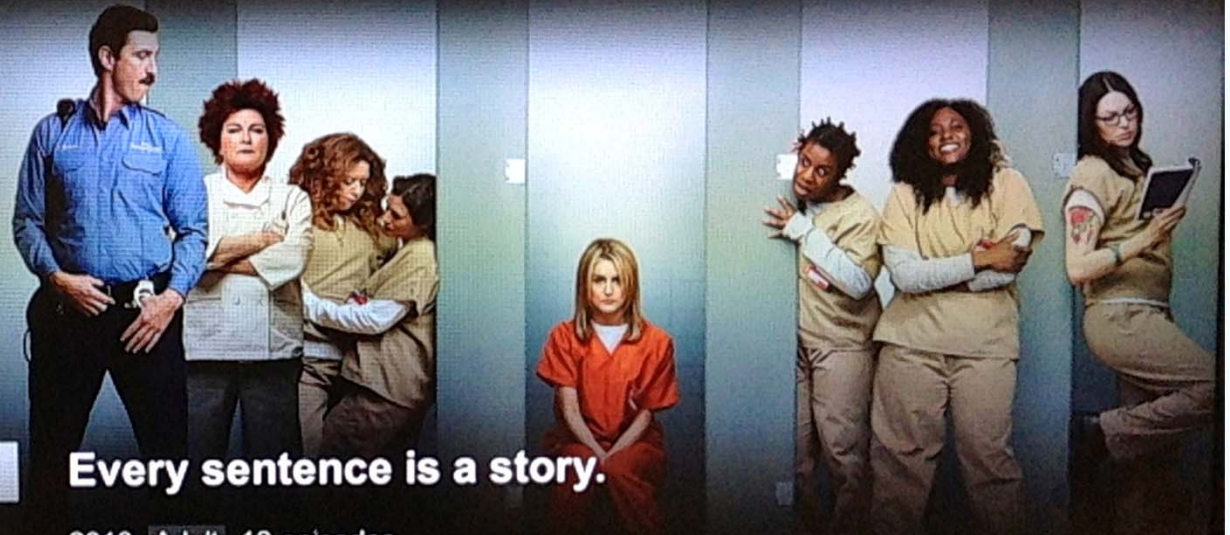
Säsong 1



A NETFLIX ORIGINAL

ORANGE is the new BLACK

FROM THE CREATOR OF WEEDS



▶ Series Premiere

Season 1

Cast

Rate this title

Audio and subtitles

Every sentence is a story.

2013 **Adult** 13 episodes

★★★★★ **SUPER HD** **5.1**

From the creator of "Weeds" comes this series about a privileged New Yorker who ends up in a women's prison when a past crime catches up with her.

TV Shows, US TV Shows, TV Comedies



UMA PRODUÇÃO ORIGINAL NETFLIX

ORANGE
is the
new **BLACK**

DA CRIADORA DE WEEDS



▶ Estreia da série

1ª temporada

Elenco

Classifique o título

Idioma e legendas

Cada sentença é uma história

2013 Adult 13 episódios



Piper deve trocar sua confortável vida em Nova York life por um macacão laranja quando tem de pagar o preço por um erro cometido no passado.

Séries e TV, TV dos EUA, Comédias para TV

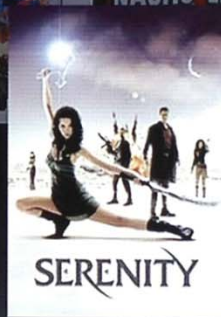
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EasierTeacher4

Thrillers

Sports Movies

Sci-Fi & Fantasy



Conan the Barbarian ★★★★★ 2011 R 1h 52m **HD**

Brave warrior Conan the Barbarian rises to defend the people of Hyboria after evil forces slaughter his family and fellow villagers.

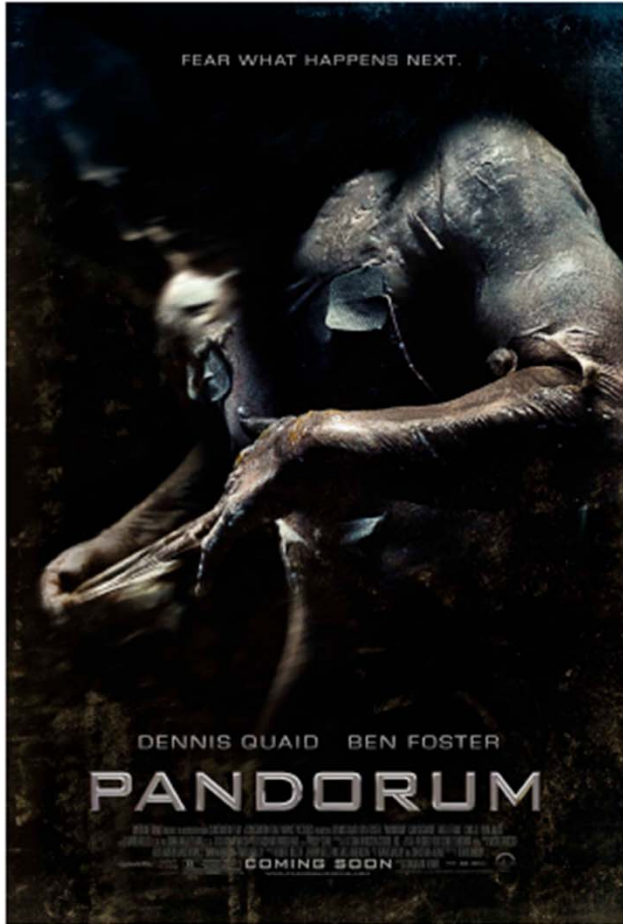
Jason Momoa, Stephen Lang, Rachel Nichols

A Play **B** Back **Y** Search



Artwork and Titles

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United States

Domestic Campaign

Points of emphasis:

- Horror
- Gore
- Dark
- Tagline : **Fear What Happens Next**
- **Market: Males**
- **Talent: not a focal point, high concept**

Germany



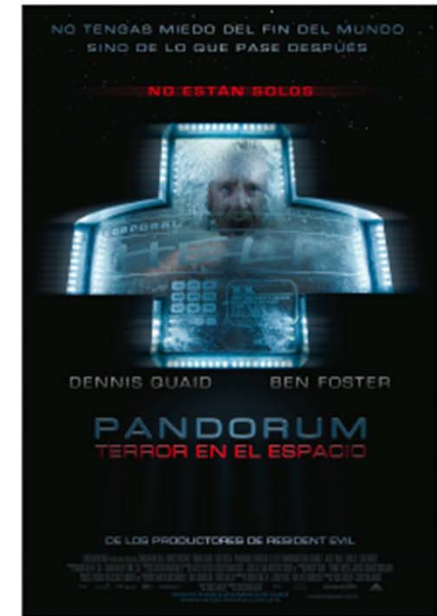
- Sci-fi
- Epic
- Thriller
- End of the world
- Tagline: *Worlds End Fear Survives*

France



- Sci-fi
- Mysterious
- From the makers of *Resident Evil*
- Tagline: *Worlds End Fear Survives*

Mexico



- Sci-fi
- Terror in space
- From the makers of *Resident Evil*
- Tagline: *Don't fear the end of the world fear what happens next*



Domestic (German) Campaign

Points of emphasis:

- A-list ensemble of **German** actors
- Produced by **Germany's** most famous producer, Bernd Eichinger
- Based on bestselling novel by **Stefan Aust**
- Imagery is based on the famous “wanted” poster used by police to hunt down RAF activists in the 1960s

United States



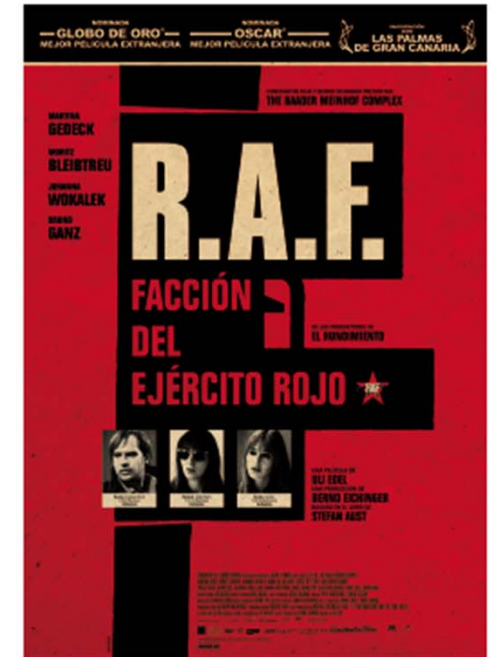
- True story
- Retro hip Shepard Fairey design (cool art film!)
- Gangsters in love storyline
- Oscar and GG Foreign picture nom

Japan



- Massive political revolt
- Political shock value
- Oscar nom for Foreign Film

Spain



- Familiar story of RAF
- Spanish Film Festival winner
- Oscar and GG for Foreign picture nom

United States



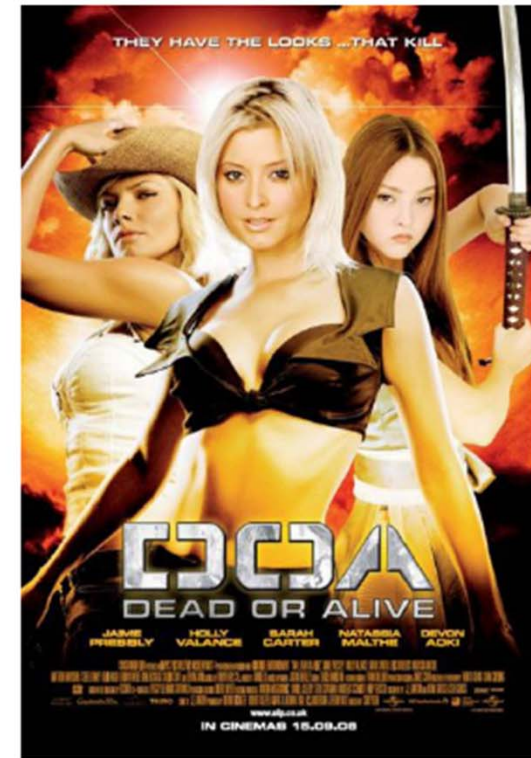
- Hot girls fighting
- Martial Arts
- Competition
- Tagline: *The World's Deadliest Assassins Will Enter. Only the Best Will Survive*

Germany



- Hot girls fighting
- Caucasian actress in middle
- Video game adaptation
- Tagline: *Individually they are unbeatable, together they are irresistible*

United Kingdom



- Hot girls fighting
- Caucasian actress in middle
- Tagline: *They Have the Looks – That Kill*

Linguistic Quality

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Gathering metrics with JIRA

- Netflix uses JIRA to track linguistic quality data.
- Every review completed by an in-house linguist is logged as a JIRA ticket and assigned to the vendor, regardless of Pass/Fail status.
- Tickets act as both a resolution vehicle for issues, and also a feedback mechanism between Netflix and vendor translators.
- We gather monthly data based on the JIRA tickets and present it in a dashboard...

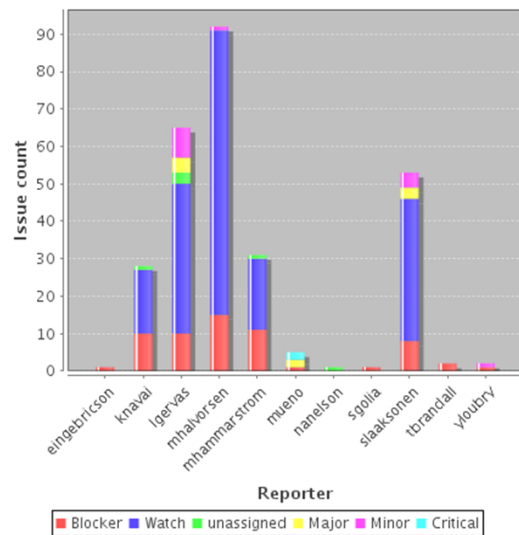
Issue Statistics

Statistics: Linguistic Review Failures (LOC Project Type)

Legal	1	3%
CS	2	6%
Devices	2	6%
Synopses-MMD	2	6%
Email	3	9%
Member	3	9%
None	7	20%
Non Member	15	43%

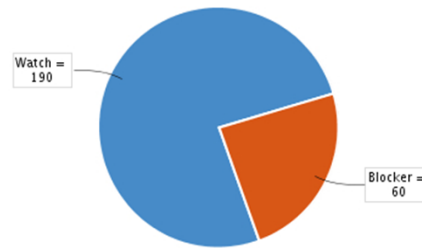
Total Issues: 35

Bar chart Linguistic Reviews Completed



281 issues total grouped by Priority

Pie Chart: Linguistic Review Pass/Fail



Total Issues: 250 Statistic Type: Priority

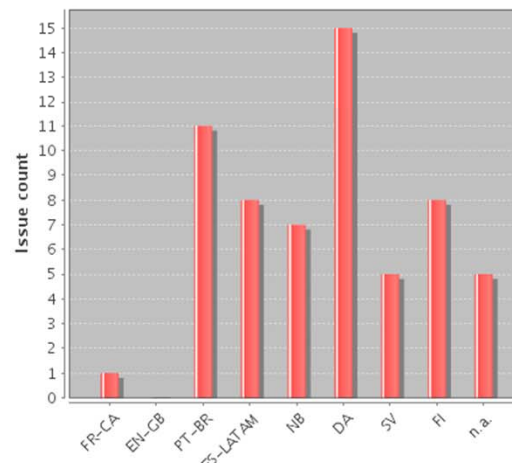
Filter Results: Linguistic Review Pass/Fail

T	Key	Summary	P
	LOC-331	Stream Team Invite US_FI	
	LOC-330	Press Release - Darwin announcement & Fact Sheet	
	LOC-327	Press Release - Lilyhammer season 2 announcement	
	LOC-326	Short Game Press Release NB	
	LOC-325	Press Release - The Short Game	
	LOC-324	TheShortGameRelease_fin	
	LOC-322	"Signup Dropoffs" survey in Qualtrics	
	LOC-321	Bridegroom Press Release	
	LOC-320	Bridegroom Press Release v2_FI.docx	
	LOC-318	Batch 20130715 "Rita" Synopses	

Displaying issues 1 to 10 of 250 matching issues.

1 2 3 4 5 6 7 8 9 ▶

Bar chart Linguistic Review Failures



Activity Stream

Linguistics Stream

Friday



NF Ling commented on LOC-295 - Press Release for Emmy nominations

Press release edited by Brian. Here are his comments:

Agreed about non-idiomatic translations. This project was difficult to get fluent and was done under some pressure of short deadline. The About Netflix section has already been discussed. I

[Read more >](#)

Friday at 3:53 PM [Comment](#) [Watch](#)

NF Ling commented on LOC-302 - OITNB pulse check

This Jira refers to 11-05622. Kenneth translated, Brian edited and proofed. Comments by Brian:

- 1) Noted for the title.
- 2) Thank you, so noted.
- 3) OK.
- 4) 'Afsnit' and 'episoder' are in the TM used for the project, but I understand episoder is to be

[Read more >](#)

Friday at 3:46 PM [Comment](#) [Watch](#)

NF Ling commented on LOC-266 - house of cards pulse check-fi

Jukka was the editor for this job and comments as follows:

- OK, noted the difference in meaning.
- OOOOPS, my fault, didn't spot that
- Also noted the difference. I didn't see that.

Friday at 3:23 PM [Comment](#) [Watch](#)

NF Ling commented on LOC-327 - Press Release - Lilyhammer season 2 announcement

This Jira refers to Project 11-06331. For this project, a different (non-lead) Danish linguist was in charge. She is not as familiar with Netflix terminology, which explain errors number 1 and 2. While she has provided reasonable quality in

[Read more >](#)

Friday at 3:16 PM [Comment](#) [Watch](#)

NF Ling commented on LOC-331 - Stream Team Invite US_FI

The linguist in charge of project 06461 is Jussi, the final version has been forwarded to him.

Friday at 2:41 PM [Comment](#) [Watch](#)

NF Ling commented on LOC-330 - Press Release - Darwin announcement & Fact Sheet

The deliverable is project 06493. Finnish lead edited and comments as follows. I will add any translator comments when I received them.

- I have to admit kuvamateriaalia is weird. My understanding of "cinematic images" is movie clips - not

[Read more >](#)

Friday at 1:46 PM [Comment](#) [Watch](#)

Wednesday

Tickets logged for all reviews, regardless of Pass/Fail status. Keeps the feedback loop active between Netflix and vendor translators... (example below is a pass)

The screenshot shows a Jira ticket interface. At the top left is the Netflix logo. The ticket title is 'Localization Vendor / LOC-295' and 'Press Release for Emmy nominations'. Below the title is a toolbar with buttons for 'Edit', 'Assign', 'Assign To Me', 'Comment', 'More Actions', 'Resolve Issue', 'Close Issue', and 'Workflow'. On the right side of the toolbar are 'Share' and 'Views' buttons. The main content area is divided into sections: 'Details', 'Description', and 'Activity'. The 'Details' section shows 'Type: Linguistics', 'Priority: Watch', 'Labels: da', 'Language Combo: DA', and 'Wordcount: 1,181'. It also shows 'Status: Open' and 'Resolution: Unresolved'. The 'People' section on the right lists 'Assignee: Marie Halvorsen' and 'Reporter: Marie Halvorsen'. The 'Dates' section shows 'Created: 07/19/2013 05:06 PM' and 'Updated: Friday 3:53 PM'. The 'Description' section contains a paragraph and a bulleted list of issues. The 'Activity' section shows a comment from 'NF Ling' dated 11/15/2013 03:53 PM.

Localization Vendor / LOC-295
Press Release for Emmy nominations

Edit Assign Assign To Me Comment More Actions Resolve Issue Close Issue Workflow Share Views

Details

Type: Linguistics
Priority: Watch
Labels: da
Language Combo: DA
Wordcount: 1,181

Status: Open
Resolution: Unresolved

People

Assignee: Marie Halvorsen
Reporter: Marie Halvorsen
Vote (0)
Watch (2)

Dates

Created: 07/19/2013 05:06 PM
Updated: Friday 3:53 PM

Agile
View on Board

Description

Several changes made, mostly stylistic but please be careful to avoid awkward translations (examples below).

- Some non-idiomatic translations (Her er Netflix' nominerede til originale serier, Videoklip fra nominerede serier ELLER om nomineret person(er) kan fås ved at kontakte)
- English quotation marks
- First part in the About Netflix section was quite different from live text (please see <http://jira.netflix.com/browse/LOC-294> for details)

Activity

All Comments Work Log History Activity Transitions Source Reviews

NF Ling added a comment - 11/15/2013 03:53 PM
Press release edited by Brian. Here are his comments:

Agreed about non-idiomatic translations. This project was difficult to get fluent and was done under some pressure of short deadline. The About Netflix section has already been discussed. I expect the TM will eventually be cleaned up. [Susan - "About Netflix" in all TMs has been addressed]. [Susan - we have found that the display of quotation marks in MemoQ led linguists to think they had proper quotes in place]

Comment



Batch 20130715 "Rita" Synopses

Comment Agile Board Rank to Top More Actions Reopen Issue Workflow

Share Views

Details

Type:	Linguistics	Status:	Closed
Priority:	Blocker	Resolution:	Fixed
Labels:	None		
Language Combo:	DA		
Translated text:	<ul style="list-style-type: none"> 1. Rita er en politisk ukorrekt folkeskolelærer. Da hendes ældste søns svigerfar viser sig at være Ritas store ungdomskærlighed, indser Rita, at hun måske ikke har så meget tjeik på tingene som hun tror... (Episode ID 70284246) 2. En ny elevs forældre forsøger at forbyde sukker på skolen. Og på hjemmefronten dukker Ritas mor pludselig dukker op efter mange års fravær. (Episode ID 70284247) 3. Da det går op for Rita, at Jeppe nu også har et sexliv, bliver hun pludselig bange for hvad det indebærer. (Episode ID 70284249) 4. Rita har en elev med ADHD, og da der laves hærværk på skolen, falder mistanken hurtigt på ham. Rita tager kampen op, og glemmer i farten at hjælpe sin egen søn Jeppe. (Episode ID 70284250) 		
Correct Text:	<ul style="list-style-type: none"> 1. Da Ritas ældste søns svigerfar viser sig at være Ritas store ungdomskærlighed, indser Rita, at hun måske ikke har så meget tjeik på tingene, som hun tror. 2. En ny elevs forældre forsøger at forbyde sukker på skolen. Og på hjemmefronten dukker Ritas mor pludselig op efter mange års fravær. 3. Da det går op for Rita, at Jeppe nu også har et sexliv, bliver hun pludselig bange for, hvad det indebærer. 4. Rita har en elev med ADHD, og da der laves hærværk på skolen, falder mistanken hurtigt på ham. Rita tager kampen op og glemmer i farten at hjælpe sin egen søn Jeppe. 		

Description

These vendor-provided synopses were sent to Acclaro for review while I was OOO. They have to be attractive because they are known to drive user viewing but I found the following issues, two of which are major.

1. (MAJOR) 201 characters! No more than 170 characters allowed. This is in the style guide.
2. (MAJOR) Typo: "dukker Ritas mor pludselig dukker"
3. (minor) Comma added (grammatical comma used in the other Rita synopses)
4. (minor) Incorrect comma in main clause: "Rita tager kampen op, og glemmer"

Activity

All Comments Work Log History Activity Transitions Source Reviews

- NF Ling added a comment - 09/22/2013 08:45 PM
This refers to project 11-05545, delivered July 16 2013.

We have noted the character limitation violation and are following up with Engineering. Because three months have passed since delivery, the job is no longer staged and an edit report cannot be generated.

This involves the DA-DA portion, edited by Brian. He has replied as follows:

 1. Correct, original string is too long.
 2. Looks like an incomplete edit, the correction is correct.
 3. Correct, a missing comma.
 4. Incorrect comma indeed. This type of issues usually never miss my eye.

I agree with the corrections, and some of these issues are things that I would usually not overlook. It may be that either I delivered a file which was not fully edited or final (not synched)
- Marie Halvorsen added a comment - 09/23/2013 02:21 PM

Hi,
By "the job is no longer staged and an edit report cannot be generated" do you mean that it is not possible to compare the Danish that you received from us with the Danish that you delivered back to us? Normally, it would never take 2 months for something to be reviewed but I was OOO and not expecting issues like these in something that was sent out for editing. Please be more careful during review (and/or delivery to make sure that the correct edited and final files are delivered).

People

Assignee: Marie Halvorsen
Reporter: Marie Halvorsen
Vote (0) Watch (2)

Dates

Created: 09/19/2013 11:45 AM
Updated: 10/15/2013 10:21 AM
Resolved: 10/15/2013 10:21 AM

Agile

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Key Takeaways

- Efficient caching helps scale personalization for high availability applications
- Infrastructure reuse helps streamline development
- Pragmatic and open tools
- Being process-light helps organizations scale
- Data-driven approach

Questions?

