Pšéûðö Ļöçåļîžåţîöñ

@ NETFLIX

Who Are We?

Tim Brandall
International Product Experience Manager

Shawn Xu
Internationalization Program Manager

The problem...
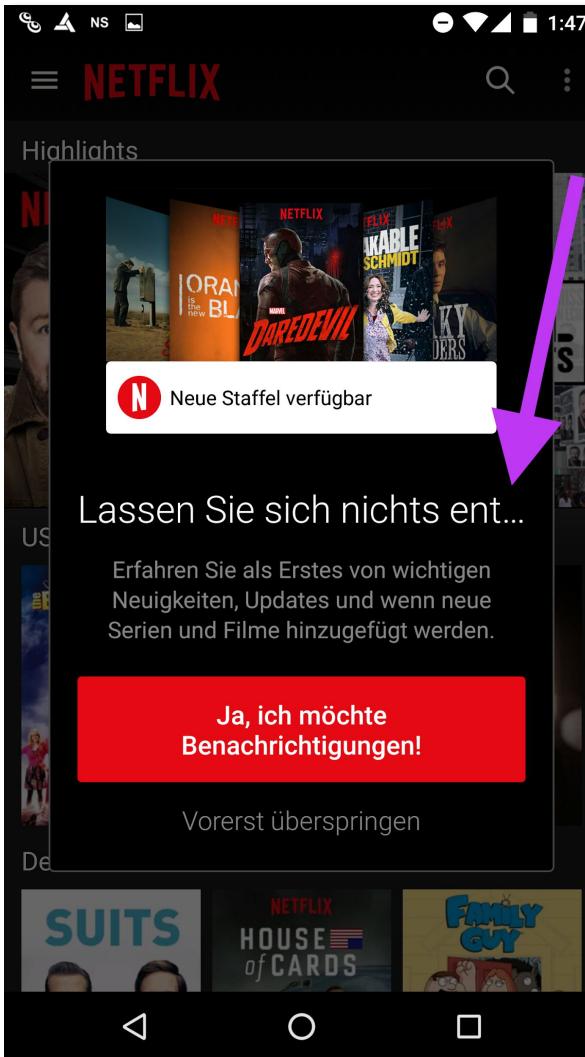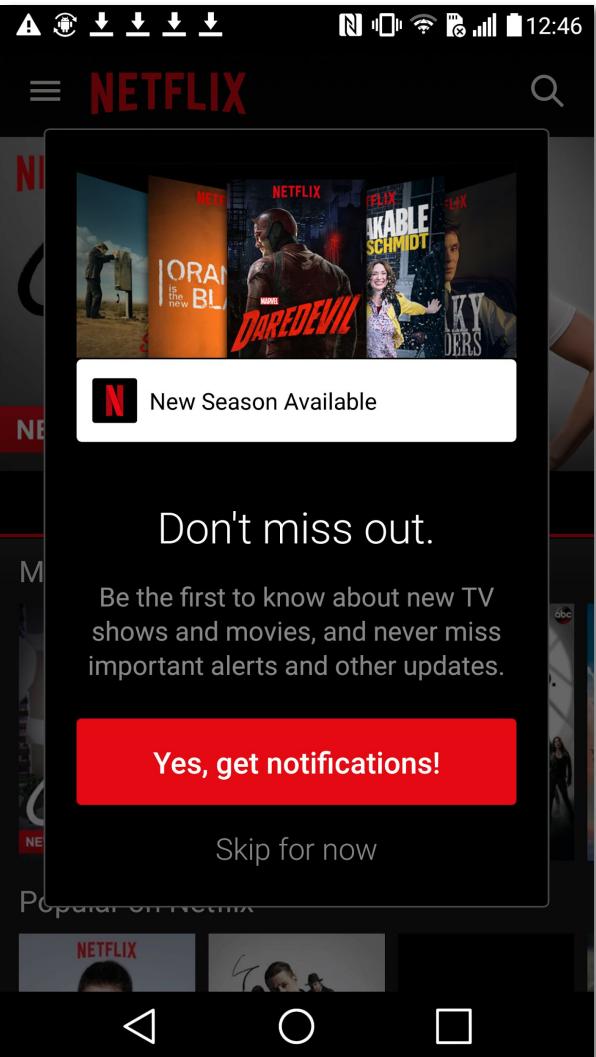
Expansion of text due to translation causes most of the UI layout issues detected during localization QC

Enter PIN to watch restricted content

Geben Sie Ihre PIN ein, um diesen Titel mit Altersbeschränkung anzusehen

Don't miss out.

Lassen Sie sich nichts entgehen!

What if we could catch layout problems **before** translating into 26 languages?

Éñţér Þšéûðö Ļöçåļîžåţîöñ¡

What is Þšéûðö Ļöçåļîžåţîöñ?

We want to simulate the most problematic characteristics of the world's languages, without doing real translation work.

What is Þšéûðö Ļöçåļîžåţîöñ?
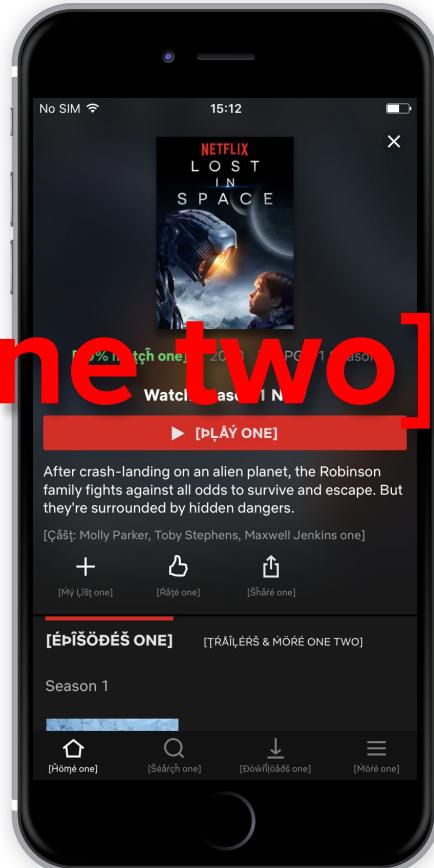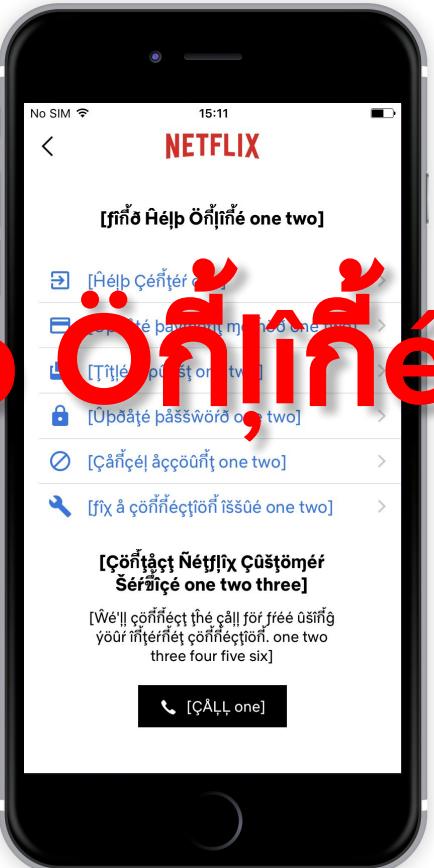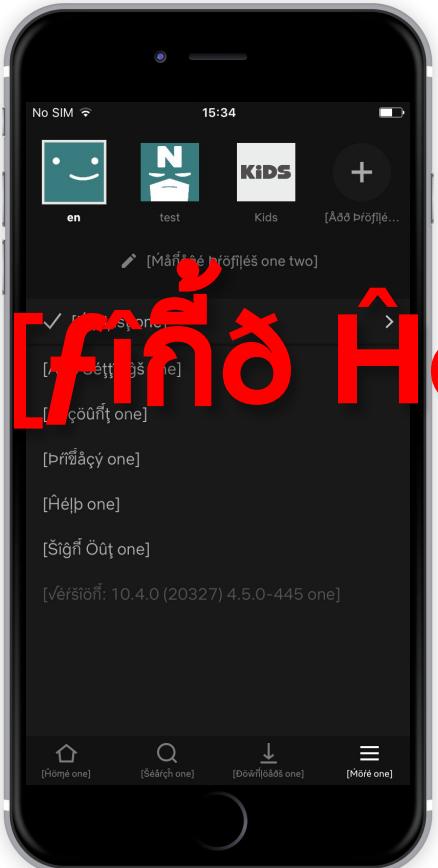
- Text layout issues

- Encoding problems

- Font issues

- Hard coded strings

The evolution of Þšûéðö Ļöçåļîžåţîöñ at Netflix
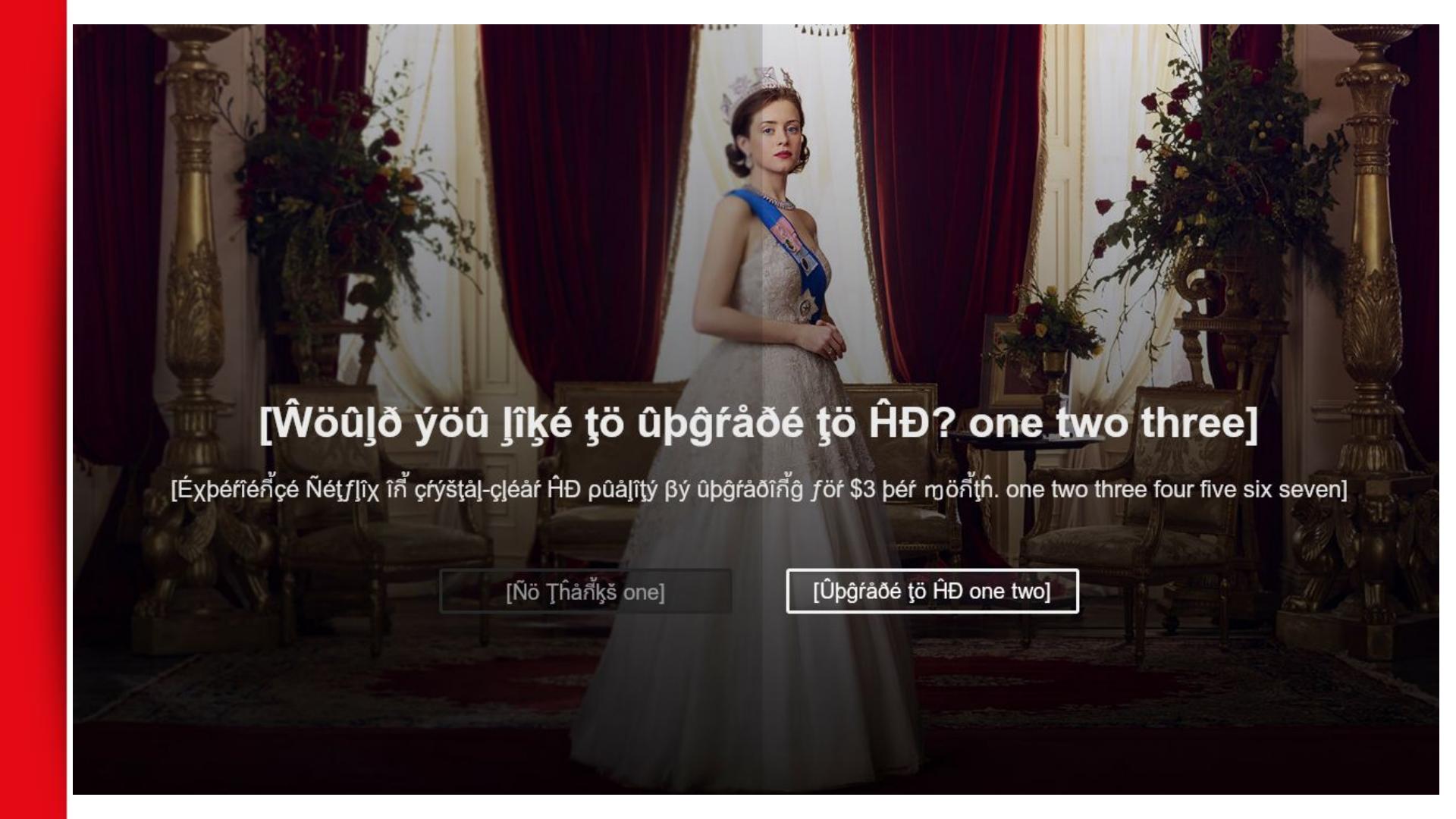
A timeline...

2014	**"Doublespeak"**
2017	**Pseudo Loc revisited**
January '18	**Buy-in from dev**
May '18	**V1 Pseudo Loc**
August '18	**V2 Pseudo Loc**

Version 1

[ʄîñễ𝀄 Ĥélp Öñễ|îñễ one two]

Screen 1 (left)

en test KiDS [Åðð Þröʄîｌé...]

[Mấñấ𝀄é 𝀄röʄîｌế𝀄 one two]

✓ [Mỳ 𝀄törîế𝀄]

[Âｐｐ 𝀄ếｔｔîñ𝀄𝀄 one]

[Â𝀄çöûñ𝀄 one]

[Þrîṽấçỳ one]

[Ĥéｌｐ one]

[Šî𝀄ñ Öûｔ one]

[ṼếrŠîöñ: 10.4.0 (20327) 4.5.0-445 one]

[Ĥömế one] [Šếấrçh one] [Ðöẁñ𝀄öấð𝀄 one] [Mörế one]

Screen 2 (center)

NETFLIX

[ʄîñễ𝀄 Ĥélp Öñễ|îñễ one two]

→ [Ĥéｌｐ Çéñｔếr one]

📧 [Úｐðấｔế ｐấỳ𝀄ếñｔ mếｔhöð one two]

🔒 [Úｐðấｔế ｐấ𝀄𝀄ẁörð one two]

⊘ [Çấñçếｌ ấççöûñｔ one two]

🔧 [ʄîx ấ çöññếçｔîöñ î𝀄𝀄ûế one two]

[Çöñｔấçｔ Ñếｔʄｌîx Çû𝀄ｔömếr Šếrṽîçế one two three]

[Ẁế'ｌｌ çöññếçｔ ｔhế çấｌｌ ʄör ʄrếế û𝀄îñ𝀄 ỳöûr îñｔếrñếｔ çöññếçｔîöñ. one two three four five six]

📞 [ÇÅｌｌ one]

Screen 3 (right)

NETFLIX
LOST IN SPACE

[Ẁấｔçh ố𝀄ố𝀄 ốñế one] [20ố𝀄] [PG1ố] [ốấ𝀄öñ]

Watch Season 1 N

▶ **[ÞｌÅÝ ONE]**

After crash-landing on an alien planet, the Robinson family fights against all odds to survive and escape. But they're surrounded by hidden dangers.

[Çấ𝀄ｔ: Molly Parker, Toby Stephens, Maxwell Jenkins one]

+ [Mỳ ｌî𝀄ｔ one] 👍 [Rấｔế one] ⬆ [Šhấrế one]

[ÉｐÎŠÖÐÉŠ ONE] [ＴｒÅÎｌＥＲŠ & MÖRÉ ONE TWO]

Season 1

[Ĥömế one] [Šếấrçh one] [Ðöẁñ𝀄öấð𝀄 one] [Mörế one]

[Ŵöûḷð ýöû ḷĩḱé ţö ûþĝŕåðé ţö ĤĐ? one two three]

[Éxþéŕîéñ̃çé Ñéţḟḷîx îñ̃ çŕýšţåḷ-çḷéåŕ ĤĐ þûåḷîţý ßý ûþĝŕåðîñ̃ĝ ḟöŕ $3 þéŕ ṃöñ̃ţĥ. one two three four five six seven]
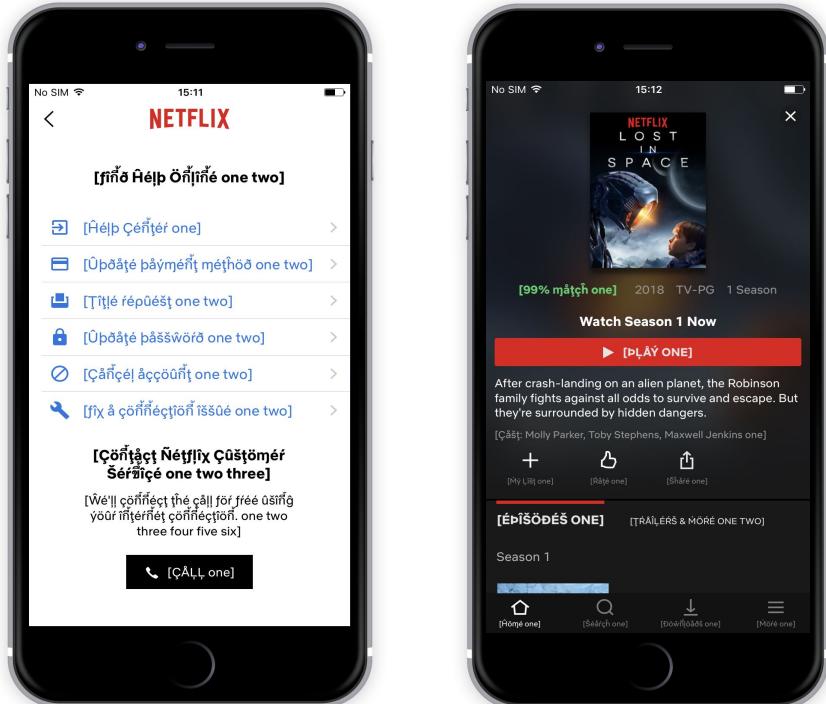
[Ñö Ţĥåñ̃ḱš one]   [Ûþĝŕåðé ţö ĤĐ one two]

Dev team reaction was...

I DON'T LIKE IT

The problems

- **<u>Hard to read</u>**

- **Incomplete**

- **"Feels fake"**

Lovingly referred to as...

" Looks like cr@p mode "

-Anonymous Netflix developer

But it was working...

Teams were finding potential issues **by themselves**

Version 2

[Ŵööuûļd ýoöuû ļíîķeé ţoö uûpĝraåðeé ţoö Ûlţraå ĤD?]
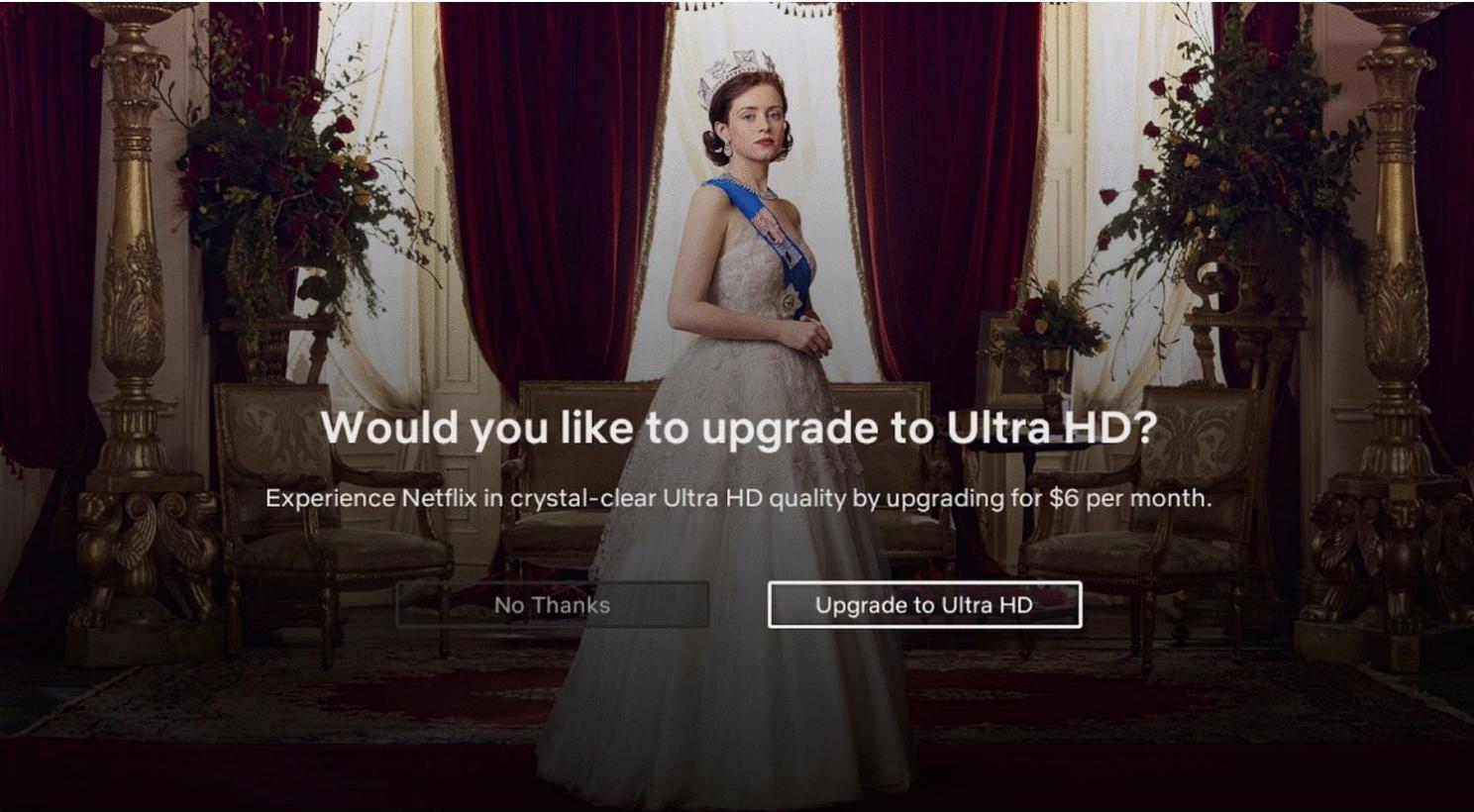
[Ŵööuûļd ýoöuû ļíîķeé ţoö uûpĝraåðeé ţoö Ûlţraå ĤD?]

[Éxpeéríîééñ̂ceé Ñeéţfļiîx iîñ̂ ĉrýsţaåļ-cļeéaåŕ Ûlţraå ĤD quûaåļiîţy bý uûpĝraåðiîñ̂ĝ foöŕ 70.00 THB peéŕ m̥oöñ̂ĥ.]

[Ñöö Ţhaåñ̂ǩš]   [Ûpĝŕaåðeé ţoö Ûlţraå ĤD]

More problems

Readability had been improved

BUT
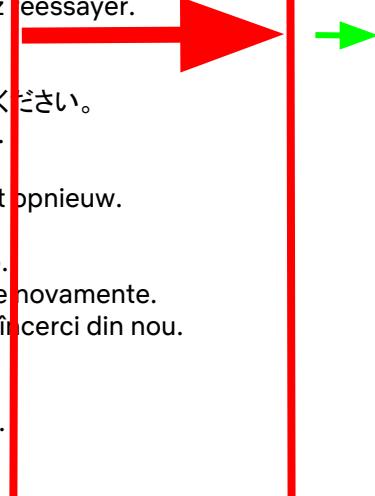
Simulated expansion was now less consistent than it was with the original implementation

The account name or password is incorrect. Please try again.

Machine Translation

ar	اسم الحساب أو كلمة المرور غير صحيحين. يرجى إعادة المحاولة
bg	Името или паролата за акаунта са неправилни. Опитайте отново.
da	Kontonavnet eller adgangskoden er ikke korrekt. Prøv igen.
de	Der Kontoname oder das Passwort stimmen nicht. Bitte versuchen Sie es noch einmal.
el	Το όνομα του λογαριασμού ή ο κωδικός πρόσβασης είναι εσφαλμένα. Προσπαθήστε ξανά.
en	The account name or password is incorrect. Please try again.
en-XA	[Ṭheé aåçcoöuûn̂t n̂ååṃeé oöŕ paåšsŵoöŕd îîš îîn̂ĉcoöŕreéçt. Ṗleéaåšeé ṭŕý aåĝaåîîn̂.]
es	El nombre de la cuenta o la contraseña no son correctos. Intenta de nuevo.
es-ES	El nombre de cuenta o la contraseña no son correctos. Vuelve a intentarlo.
fi	Tilin nimi tai salasana on väärä. Yritä uudelleen.
fr	Le nom de compte ou le mot de passe est incorrect. Veuillez réessayer.
fr-CA	Le nom de compte ou le mot de passe est incorrect. Veuillez réessayer.
he	שם החשבון או הסיסמה לחשבון שגויים. נסה שוב.
it	Nome o password dell'account errati. Riprova.
ja	アカウント名またはパスワードが間違っています。もう一度お試しください。
ko	아이디나 비밀번호를 잘못 입력하셨습니다. 다시 시도해 주세요.
nb	Kontonavn eller passord er feil. Prøv på nytt.
nl	De accountnaam of het wachtwoord is niet juist. Probeer het opnieuw.
pl	Nieprawidłowa nazwa konta lub hasło. Spróbuj ponownie.
pt	O nome da conta ou senha está incorreto. Tente novamente.
pt-PT	A palavra-passe ou o nome da conta não está correto. Tente novamente.
ro	Numele de utilizator sau parola este incorectă. Te rugăm să încerci din nou.
sv	Kontonamnet eller lösenordet är felaktigt. Försök igen.
th	ชื่อบัญชีหรือรหัสผ่านไม่ถูกต้อง โปรดลองอีกครั้ง
tr	Girilen hesap adı veya parola yanlış. Lütfen yeniden deneyin.
zh-CN	帐户名称或密码有误。请重试。
zh-TW	帳戶名稱或密碼不正確。請再試一次。

Enables us to do things like...

The account name or password is incorrect. Please try again.

[Ṭheé aåçcoöuûṅ̃t ṅ̃aåɱeé ↓öŕ paåšsŵoöŕd iîš iîṅ̃coöŕreéçt. P↑eéaåšeé ţrý aåĝaåiîṅ̃.]

↓ = **Shortest machine translation length**

↑ = **Length of the original English string**

Tech Dive

Pseudo Locale: en-XA

Control: A flag to turn pseudo on or off

V2 Pseudo Loc Map:

abcdefghijklmnopqrstuvwxyz
åbçðéƒĝĥîĵķļɱñ̃öpqɼśŝţûvŵχýž

ABCDEFGHIJKLMNOPQRSTUVWXYZ
ÅƁÇÐÉFĜĤÎĴĶĻḾÑÖPℚŔŠŢÛVŴχÝŽ

Pseudo Loc API

| Class	`NFPseudoLocalization`
API	`public static String` **`pseudoLocalizeString(String input, String localeID)`**
input	**Original English string**
localeID	**Intended pseudo pattern locale id, "en-XA" will get generic pseudo localization pattern. This allows us to add more pseudo localization patterns later on.**

Pseudo Loc Workflow
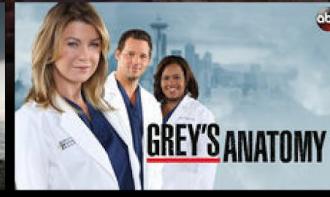
Pseudo Loc Exclusions

Pseudo Loc excludes the following elements:

- **ICU MessageFormat**

- **Variables**

- **HTML Tags**

- **HTML Character Entities**

- **URLs**

Example
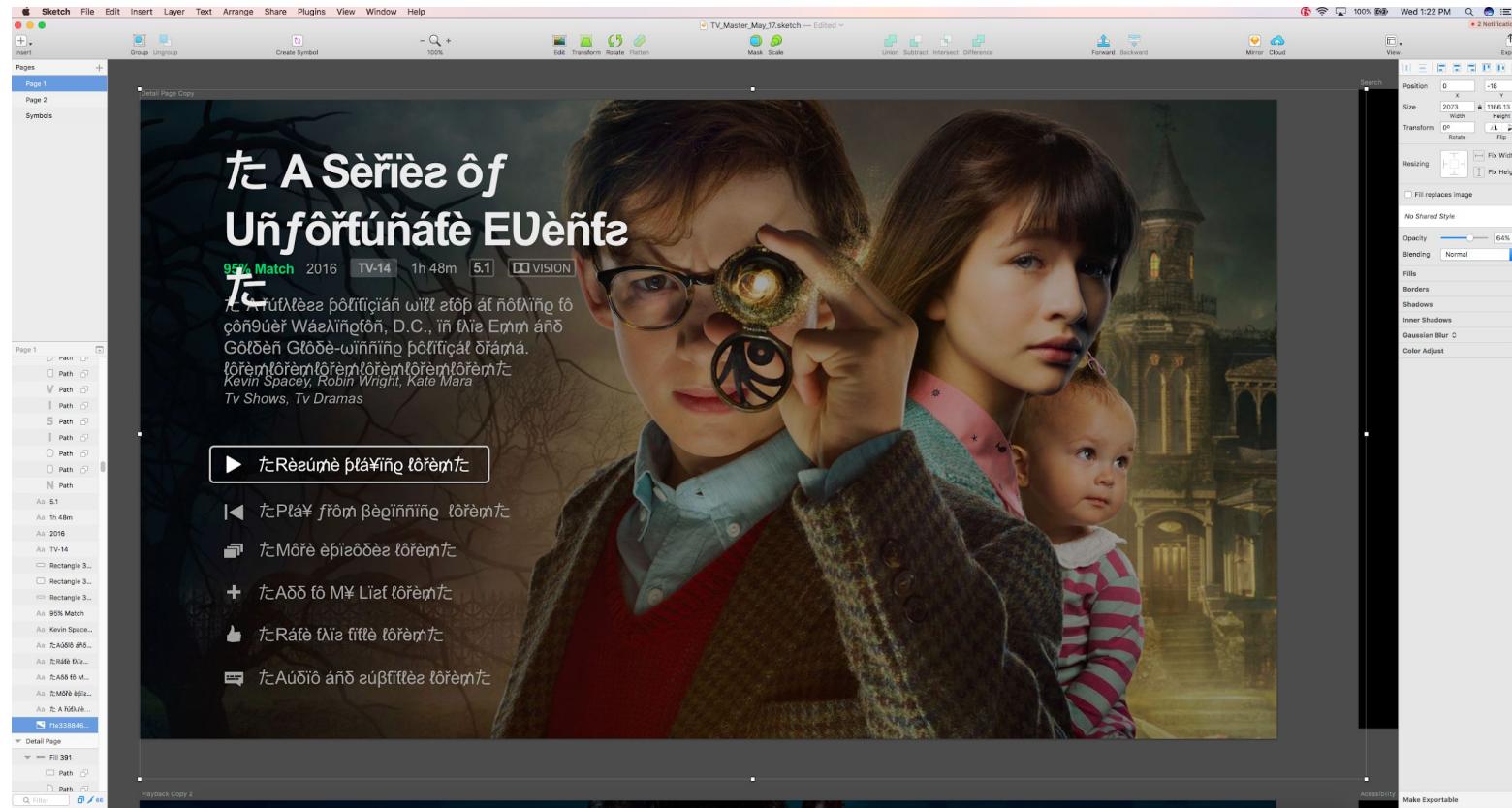
String with ICU Plural Format, Variable, and HTML Tags

Input	{numDays, plural, one {TV shows and movies added in the last day.} other {TV shows and movies added in the last {numDays} days.}}
Output	[{numDays, plural, one {ŢV šhoöŵs aåñ̃d ɱoöviîeéš aåðdeéð iîñ̃ ţheé ḷaåšt ðaåý.} other {ŢV šhoöŵs aåñ̃d ɱoöviîeéš aåðdeé ð iîñ̃ ţheé ḷaåšt {numDays} ðaåýs.}}]
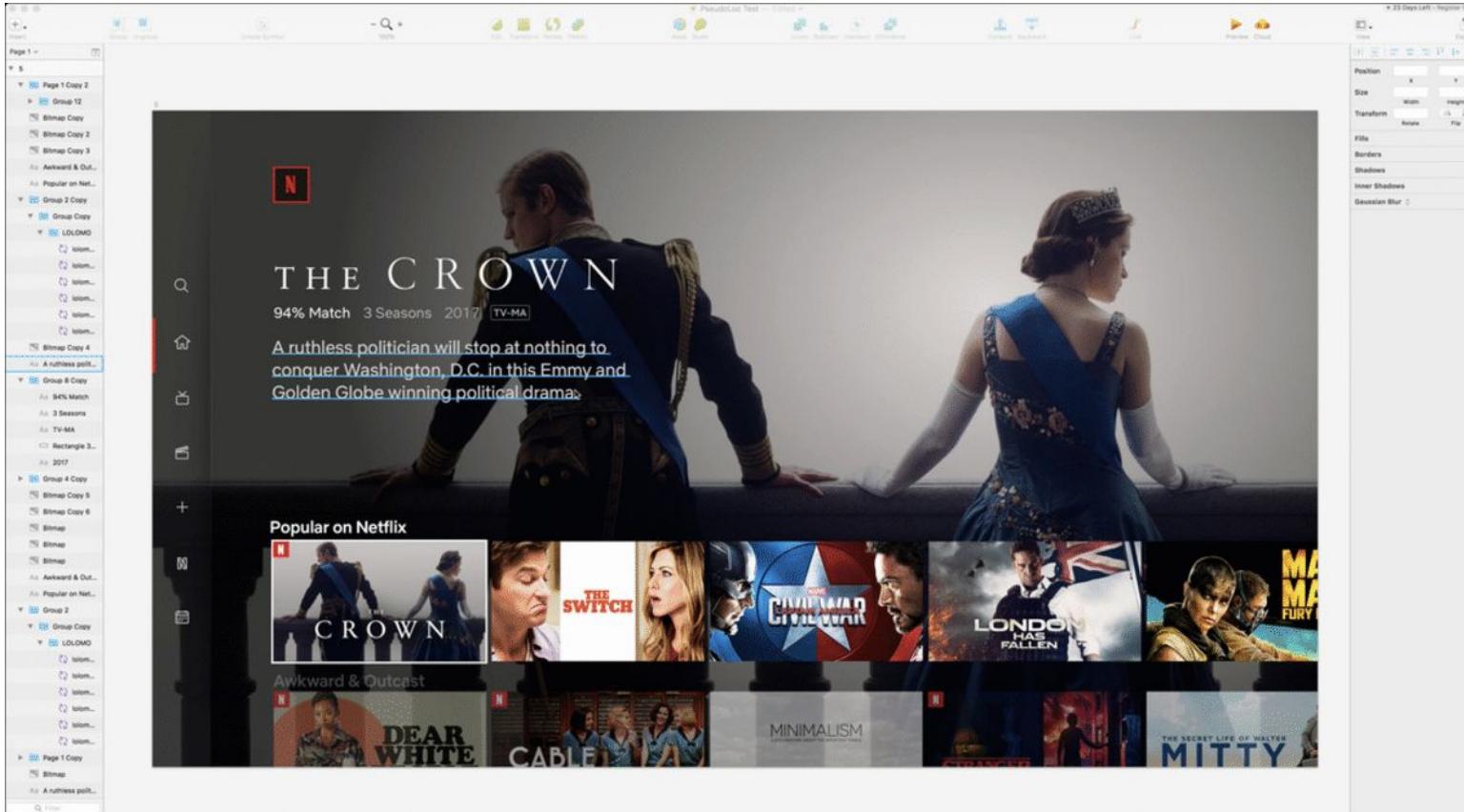
What's next?

Focus on Design Team

Þšûéðö Ļöçåļîžåțîöñ îñ Šķéțçĥ

Netflix Þšéûðö Font

Key Takeaways

- Make sure the value is clear to your teams

- Pseudo Loc has to be **DEFAULT / OPT OUT**

- The initial rollout has to be high value

- Survey your users and iterate quickly

- Design teams are a key piece of the puzzle

jobs.netflix.com

tbrandall@netflix.com
xxu@netflix.com

NETFLIX

THẢÑĶ ÝÖÛ

NETFLIX