MACHINE TRANSLATION AT MICROSOFT

Chris Wendt
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Why MT? The purpose

The Crude

- Extent of localization
- Data Mining & Business Intelligence
- Globalized NLP
- Triage for human translation

Research

- Machine Learning
- Statistical Linguistics
- Same-language translation

The Good

- Breaking down language barriers
- Text, Speech, Images & Video
- Language Preservation

NOT:

- Spend less money
- Take the job of human translators
- Perform miracles

Extent of localization Methods of applying MT

Post-Editing

- Goal: Human quality
- Increase hum translator's pr
- In practice: 09 productivity in
 - Varies by conte language

Post-Publish Post-Editing "P3"

- Know what you are human translating, and why
- Make use of community
 - Domain experts
 - Enthusiasts
 - Employees
 - Professional translators
- Best of both worlds
 - Fast
 - Better than raw
 - Always current

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output of the lirectly to end

ingual UI with technical Introduction Undergraduate and Graduate Schools Research and Technological development

International Students

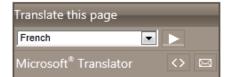
International Relations

Student Life

HOME > Introduction > University's History

Introduction

- > Message from the President
- Basic Philosophy / Characteristics of Toyohashi Tech
- > Organization Chart
- University's History
- > Number of All Students
- Five Departments and one Institute
- Research Institutes
- > Complete View of the Campus
- Access Map
- > Toyohashi City Guide





University's History

1974/04/11	Establishment of "Graduate School of Science and Technology (tentative name)" in Toyohashi city was decided.
1976/05/25	Establishment of Toyohashi University of Technology was officially announced.
1976/10/01	Opening of Toyohashi University of Technology
1978/04/01	Set up Language Center
1978/04/24	Held the 1 st entrance ceremony
1979/04/01	Set up Research Center for Physical Fitness, Sports and Health
1980/04/01	Set up Master's Course in Graduate School of Engineering
1986/04/01	Set up Doctoral Course in Materials System Engineering and Systems and Information Engineering in Graduate School of Engineering
1987/04/01	Set up of Integrated Energy Engineering as a Doctoral Course in Graduate School of Engineering
1988/04/01	Set up Faculty of Information and Computer Sciences in undergraduate level
1997/04/01	Set up Department of Information and Computer Sciences as a Master's Course in Graduate School of Engineering

English





Introduction

Undergraduate and Graduate Schools Research and Technological development

International Students

International Relations

Student Life

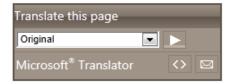
Accueil > Introduction > histoire de l'Université

Introduction

- Message du Président
- Philosophie de Base / Caractéristiques de Toyohashi Tech
- Organigramme
- Histoire de l'Université
- > Nombre total d'étudiants



- › Aperçu complet du Campus
- Plan d'Accès
- Guide de la Ville de Toyohashi





Histoire de l'Université

11/04/1974	Mise en place de la « Graduate School of Science and Technology (nom provisoire) » dans la ville de Toyohashi fut décidé.
25/05/1976	Mise en place de Toyohashi University of Technology a été officiellement annoncée.
01/10/1976	Ouverture de l'Université de technologie de Toyohashi
01/04/1978	Mettre en place le centre de langues
24/04/1978	Qui s'est tenue la cérémonie d'entrée 1 st
01/04/1979	Mis en place Centre de recherche pour la santé, Sports et conditionnement physique
01/04/1980	Mettre en place de Master à la Graduate School of Engineering
01/04/1986	Mis en place des cours de doctorat en système de génie des matériaux et systèmes et génie de l'Information à la Graduate School of Engineering
01/04/1987	Mise en place d'Integrated Energy Engineering comme un cours de doctorat à la Graduate School of Engineering

English











Undergraduate and Graduate Schools Research and Technological development

International Students

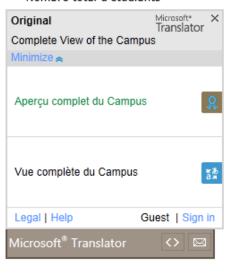
International Relations

Student Life

Accueil > Introduction > histoire de l'Université

Introduction

- Message du Président
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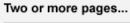
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Print



Convert into PDF

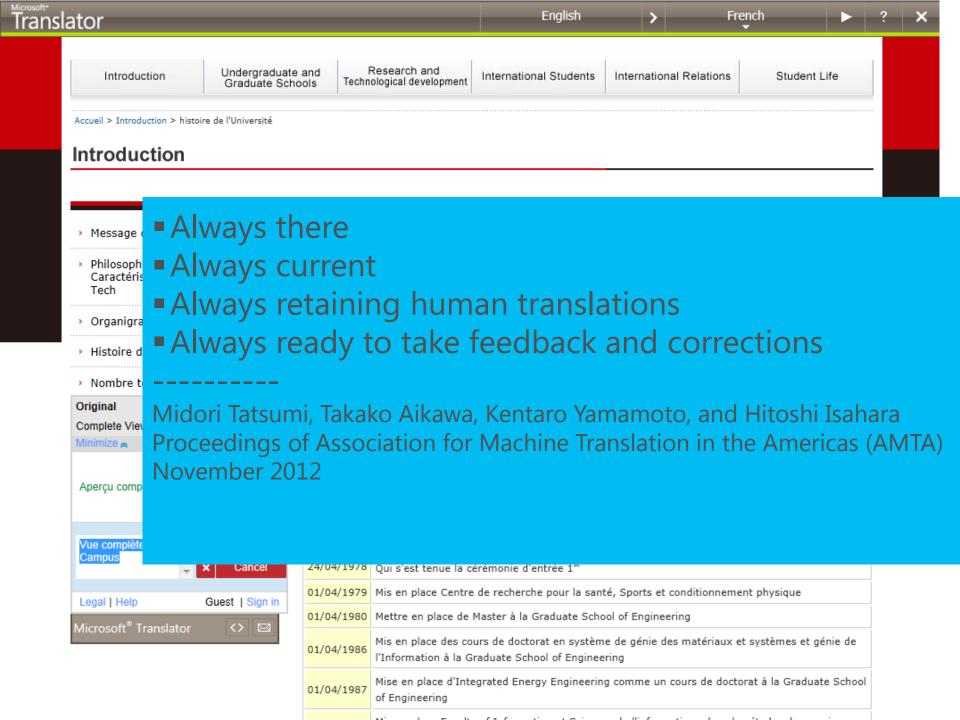




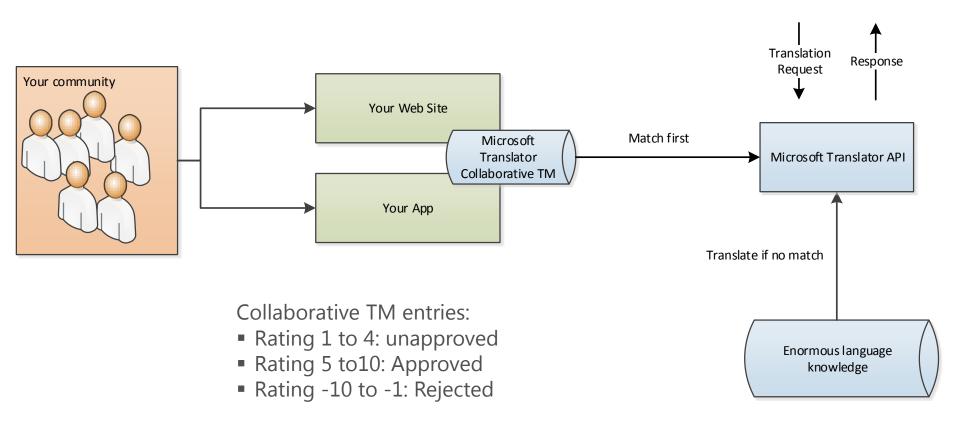
Convert into PDF

Histoire de l'Université

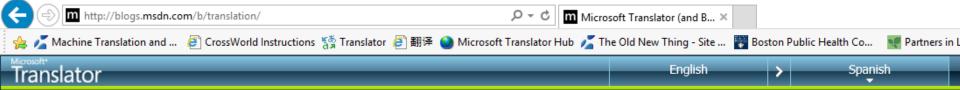
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	ar tenere comment the contract to



Collaboration: MT + Your community



1 to many is possible



Blog del equipo oficial de Microsoft Translator (y Bing Translator)

MSDN Blogs > Blog oficial del equipo traductor de Microsoft (y Bing Translator)



Ordenar por: Más reciente | Más vistos | Mayoría de los comentarios



BLOG DEL EQUIPO OFICIAL DE MICROSOFT TRANSLATOR (Y BING TRANSLATOR)

Anunciando el cubo de traductor de Microsoft para el uso comercial – una solución integral para la calidad de traducción personalizada



hace 3 meses por Microsoft Translator

Entrega gratuita y fácil de usar herramientas para permitir que usted y su comunidad en colaboración personalizar las traducciones basadas en su contenido y escenarios.

Como investigadores de la traducción automática, somos conscientes de los retos en la aplicación de fuerza bruta potencia para resolver problemas de traducción informática. Sabemos que no importa cuánto poder de procesamiento que lanza en traducción, todavía es un tramo para obtener una traducción libre de errores, contextualmente precisa cada vez. Como una traducción centrada en socio de servicios equipo, hemos estado a la vanguardia de ofrecer mejores formas de adaptar traducciones para encajar el contenido específico que se traduce. Hace dos años, dimos un paso en la dirección de ayudar a los usuarios personalizar las traducciones que se envía a través de nuestro marco de traducción colaborativa de Microsoft Translator. Como parte integrante de la API del traductor de Microsoft, estas tecnologías permitidas a los usuarios editar y reemplazar la máquina generan traducciones después fueron entregados y hechos disponible para su reutilización mediante la API.

Hoy estamos anunciando la disponibilidad comercial del Centro de traductor de Microsoft, una herramienta innovadora que ofrece un control sin precedentes sobre cómo el motor de traducción traduce su contenido-- antes de que las traducciones se entregan de socios y las comunidades Worldwide Partner Conference de Microsoft. Usando el cubo, los usuarios pueden mejorar y optimizar la calidad de la traducción de un área específica de la terminología y estilo.

El Hub traductor es una extensión libre del popular servicio de traductor de Microsofty permite a las empresas existentes documentos traducidos se combinan con el poder de backend de datos grande de Microsoft Translator fácilmente construir un sistema de traducción personalizada, cuya calidad es controlada por el negocio. Sistemas personalizados construido y desplegado son perfectamente accesibles a través de la API estándar de traductor de Microsoft y pueden incorporarse en cualquier escenario o flujo de trabajo.

Making it easier for the approver – Pending edits highlight

Translate this Original

Tareas comi

- Inicio blog
- RSS para c
- RSS para p
- Átomo

Búsqueda

Buscar en es

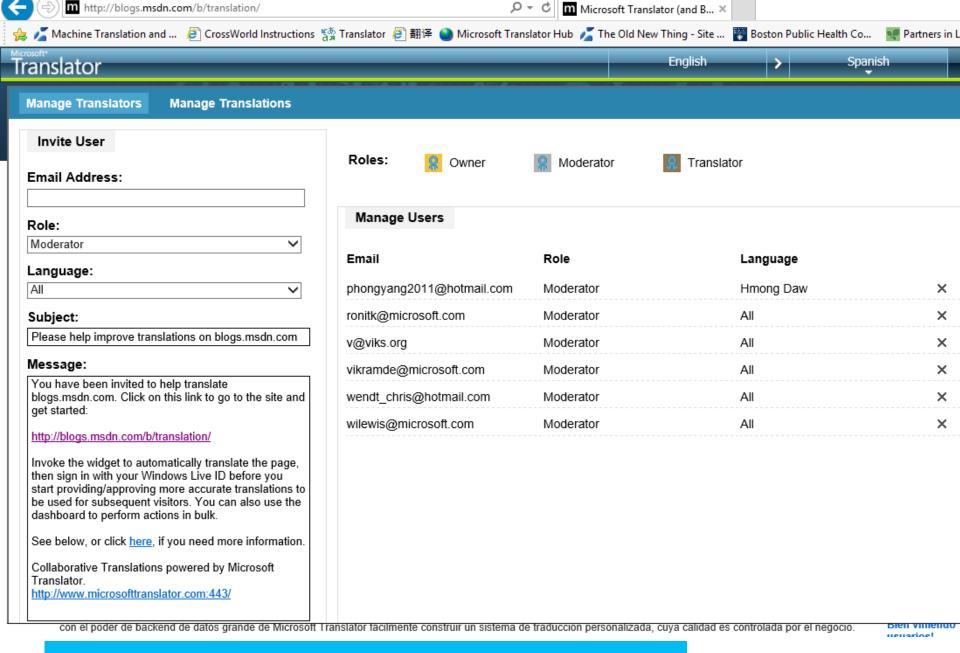
Buscar todos

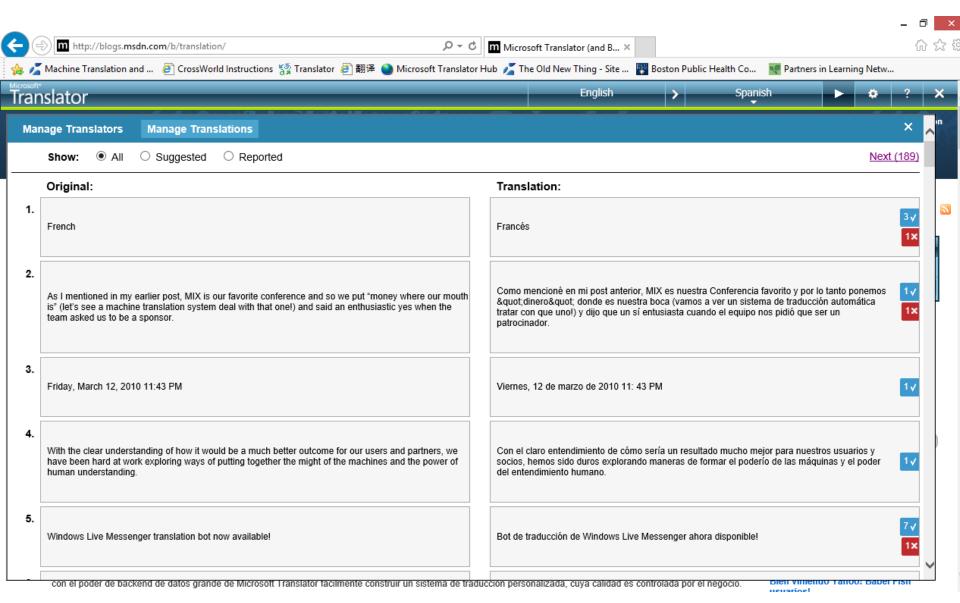
Entradas red

Anunciando el Microsoft para solución integ traducción per

Bien viniendo usuarios!

Audazmente ir aplicación más traductor para





Making it easier for the approver – Bulk approvals

What is Important? In this order

- Quality
- Access
- Coverage

Measuring Quality: Human Evaluations Knowledge powered by people

- Absolute
- 3 to 5 independent human evaluators are asked to rank translation quality for 250 sentences on a scale of 1 to 4
 - Comparing to human translated sentence
 - No source language knowledge required

4 Ide	eal	Grammatically correct, all information included
3 Ac	ceptable	Not perfect, but definitely comprehensible, and with accurate transfer of all important information
	ssibly ceptable	May be interpretable given context/time, some information transferred accurately
1 Un	nacceptable	Absolutely not comprehensible and/or little or not information transferred accurately

Also: Relative evals, against a competitor, or a previous version of ourselves

Measuring Quality: BLEU* Cheap and effective – but be aware of the limits

- A fully automated MT evaluation metric
 - Modified N-gram precision, comparing a test sentence to reference sentences
- Standard in the MT community
 - -Immediate, simple to administer
 - -Correlates with human judgments
- Automatic and cheap: runs daily and for every change
- Not suitable for cross-engine or crosslanguage evaluations

^{*} BLEU: BiLingual Evaluation Understudy

Measuring Quality In Context Real-world data

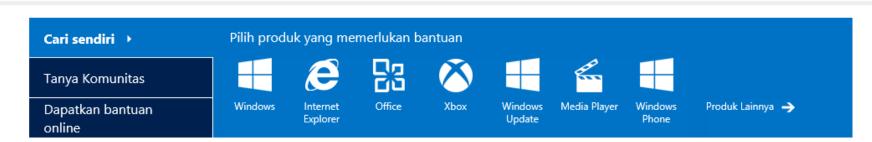
- •Instrumentation to observe user's behavior
- A/B testing
- Polling



Knowledge Base (since 2003)







Microsoft umum Speller API (CSAPI) untuk Office ejaan

ID Artikel: 262605 Melihat produk di mana artikel ini berlaku.

💫 Peringatan: artikel ini adalah terjemahan oleh mesin

ৰ্বুকু Klik disini untuk menampilkan sumber Inggris dan terjemahan oleh mesin secara berdampingan

Perbesar semua | Perkecii semua



Microsoft umum Speller aplikasi Programming Interface (CSAPI) adalah satu set standar fungsi yang memungkinkan aplikasi untuk berkomunikasi lebih baik dengan eksternal spell checker dan leksikon (Kamus). Standardisasi ini memungkinkan untuk pengembangan mesin pihak ketiga dan leksikon yang dapat dijual di pasar sebagai add-in untuk Microsoft Office. Ini add-in menyediakan pengguna kantor dengan kemampuan untuk menyesuaikan dan memperluas kemampuan Office ejaan.

Untuk memfasilitasi pengembangan mesin baru dan kosa kata, Microsoft telah tersedia spesifikasi CSAPI. Pihak ketiga yang tertarik dalam menerapkan hanya add-in lexicon (seperti istilah medis, hukum, atau teknis) tapi mesin tidak hanya memerlukan alat khusus untuk mengkonversi leksikon mereka ke dalam format yang tepat dan harus menyadari bahwa ini hanya didukung



الشرق الاوسط (العربية)





Office ejaan.

🗾 Machine Translation and ... 🛮 🗗 CrossWorld Instructions 🦙 Translator 🧬 翻译 🔕 Microsoft Translator Hub 🖊 The Old New Thing - Site ... 🕎 Boston Public Health Co... 🛛 🙀 Partners in Learning Net

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Improve translation >

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Pengembang yang tertarik dalam menerapkan mantra CSAPI memeriksa mesin dan kosa kata, atau hanya add-in leksikon, dapat menghubungi dukungan Pengembang Microsoft, Artikel Basis Pengetahuan Microsoft berikut berisi informasi kontak: 234322 Mendapatkan dukungan untuk Microsoft Office solusi

Catatan CSAPI mungkin tidak dapat digunakan untuk memanggil ke Microsoft spell check mesin dan kosa kata. Sebagai contoh, pengembang pihak ketiga yang ingin menggabungkan spell check kemampuan ke aplikasi mereka sendiri mungkin tidak menggunakan CSAPI untuk mengakses mantra memeriksa mesin dan leksikon yang diinstal oleh Microsoft Office. Microsoft tidak saat ini menyediakan spell check utilitas untuk digunakan dalam produk pihak ketiga.

↑ Kembali ke atas | Berikan Masukan

INFORMASI LEBIH LANJUT

Dokumentasi CSAPI dan leksikon alat disediakan untuk pengembang yang ingin membangun mereka sendiri mantra kustom memeriksa mesin dan/atau leksikon. Mereka disediakan atas permintaan tertulis dan tidak didukung oleh Microsoft dukungan





التعليمات والدعم لـ

English

بحث منقدم

مراكز الحلول

الصفحة الرئيسية للدعم

مشاركة

مواقع دعم أخرى

- تعلیمات و إرشادات Windows
 - Office Online .
 - مراكز الحلول
 - شبكة شركاء
 Microsoft (للانحليزية)

المجتمع

- متندیات الإجابات (للإنجلیزیة)
- منتدیات Technet (للانحلیزیة)
- شبكة Microsoft Developer) Network (للانطنانة) (MSDN

الحصول على مساعدة الآن



ترجمات الموضوعات

(United States (English

إعداد حساب Hotmail أو Gmail AOL أو Gmail AOL أو Smail AOL أو الأخرى حساب البريد الإلكتروني في Entourage

معرف المقالة: 980617 - عرض المنتجات التي تنطبق عليها هذه المقالة.

🔅 رجاء قراءة رسالة التنويه التابع لميكنة الترجمه

কুঁ جنب إلى جنبا الأصلي النص مع الترجمة لعرض هنا انقر

توسيع الكل | طي الكل

- + في هذه الصفحة
 - الموجز

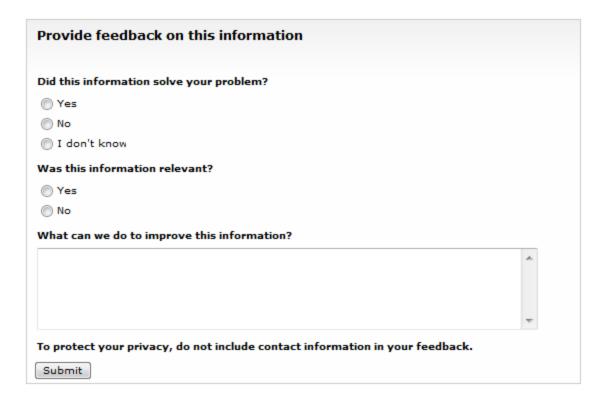
توضح هذه المقالة المعلومات التي تحتاجها وكيفية إعداد حساب بريد إلكتروني في Microsoft Entourage ل mac.

↑ عودة إلى الأعلى | إرسال ملاحظات

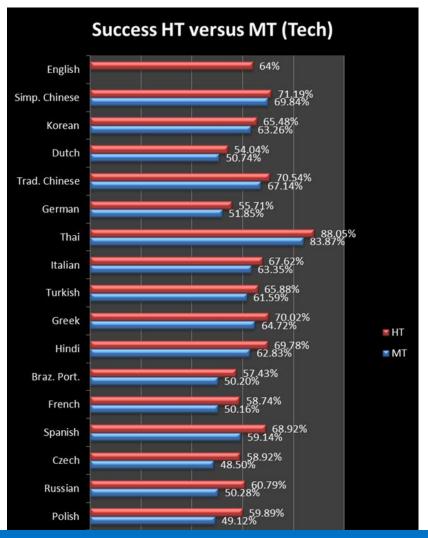
	Original				×	
	When you add an email account, the wizard tries to set up the ac	cco	unt a	Translator utomaticall	у.	معلومات أخرى
	Minimize ★					معقومات احری
			_			نتضمن Microsoft Entourage معالج إعداد حساب.
	عند إضافة حساب بريد الكروني، بحاول المعالج لإعداد الحساب تلقائباً	^	[√]	Submit		was wild obote Effecting Care
إعداد	4	÷	×	Cancel		ملاحظةنظراً لوجود العديد من موفري خدمة إنترنت (Ps
						التي تحصل عليها من موفر خدمة إنترنت الخاص بك يدويا
	Legal Help			est Sign i		4
" :	Appi الم عدادات يمكن استير اد في Entourage. للعيام بدلك، انفر فوق " استير أد	e 4	وي بري	میل احر، متل	ي ع	إذا تم إعداد الحساب هو مسبقاً في برنامج البريد الإلكترونا
	رثم اتبع الخطوات لإتمام المعالج.	9 :_	ق آخر	بات من تطبير	تلوه	من القائمة ملف في Entourage. بعد ذلك، انقر فوق مه

الخطوة 1: تنزيل أحدث حزم الخدمة والتحديثات

Knowledge base feedback



Knowledge Base Resolve Rate



Human Translation

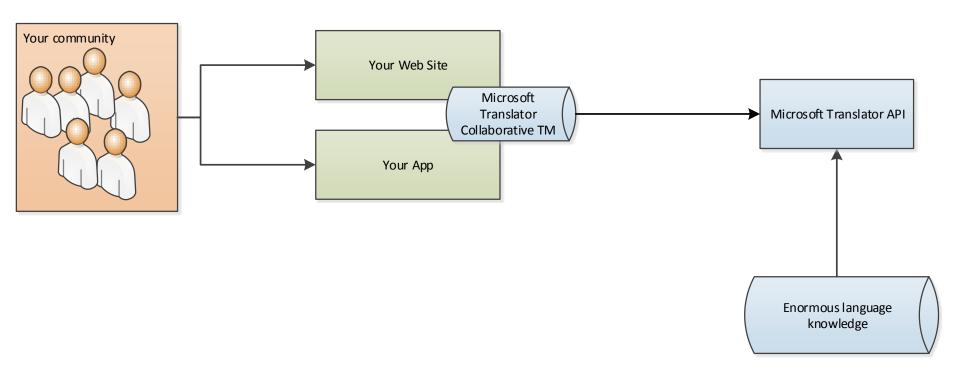
Machine Translation

Source: Martine Smets, Microsoft Customer

Microsoft is using a customized version of Microsoft Translator

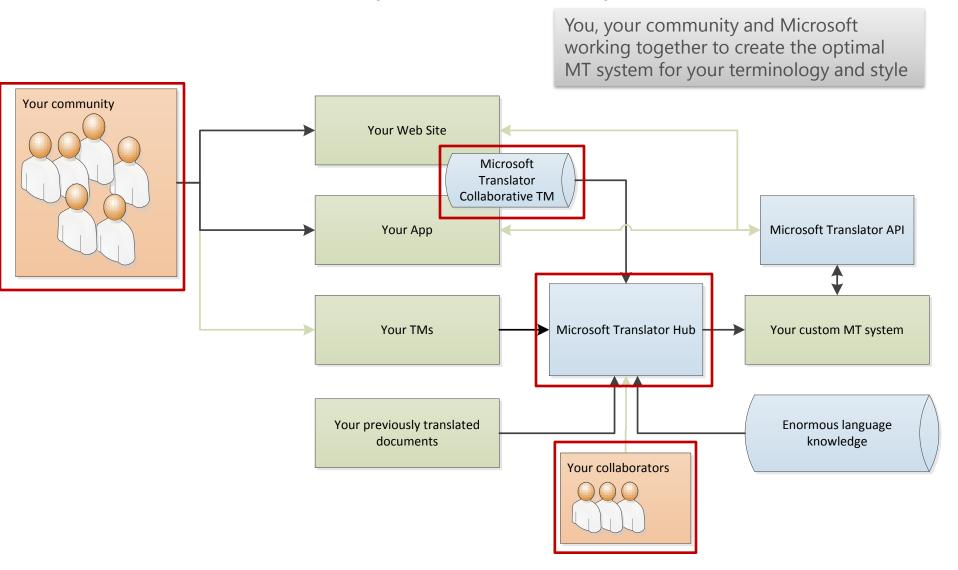
Statistical MT - The Simple View **User Input** Text, web pages, Chat etc Government data Microsoft manuals Collect and store Train statistical Translation Dictionaries • parallel and target models **Engine** Phrasebooks language data Publisher data Distributed Runtime Translation APIs and UX High-Performance Web mined data **Computing Cluster** Translated Output

Collaboration: MT + Your community



Remember the collaborative TM? There is more.

Collaboration: You, your community, and Microsoft



Experiment Results

200,000 sentences from Sybase – measured in BLEU

Chinese

System	Size	System Description	Sybase Test Set
1	8.3M	Bing Translator	34.81
2a	2.6M	Microsoft	29.95
2b	2.8M	Microsoft +Sybase	30.24
3	11.5M	General +Microsoft+TAUS+Sybase	47.16
		-	

German

System	Size	System Description	Sybase Test Set
1	4.4M	Bing Translator	34.85
2a	7.6M	Microsoft	41.55
2b	7.8M	Microsoft +Sybase	42.07
3	11.1N	1 General + Microsoft + TAUS + Sybase	50.85



Where language meets the world

Bridging languages, cultures and technology



Microsoft Translator Hub is helping smaller languages thrive by putting the power to build machine translation systems in the hands of local communities.

- K. David Harrison, National Geographic Fellow, author and linguist

MORE INFORMATION

Microsoft Translator Hub Overview

Microsoft Translator Hub Forum

ABOUT MICROSOFT TRANSLATOR HUB

Microsoft Translator Hub empowers businesses and communities to build, improve, and deploy customized automatic language translation systems—bringing better and specialized translation quality to established languages, as well as the many native languages of the world that are not yet supported by major translation providers.

Powered by Windows Azure™, Microsoft Translator Hub is an extension of the Microsoft Translator platform and service. You can build a superior translation system easily, within a private website, by combining your translated documents with the power of Microsoft Translator's big data back end. Once you are satisfied with your translation, you may share it publically on the web.









VIDEOS

Projects Community Help

View Training Results

See the training results, review translations for accuracy, clone it to modify & resubmit or deploy your translation system.

View Help

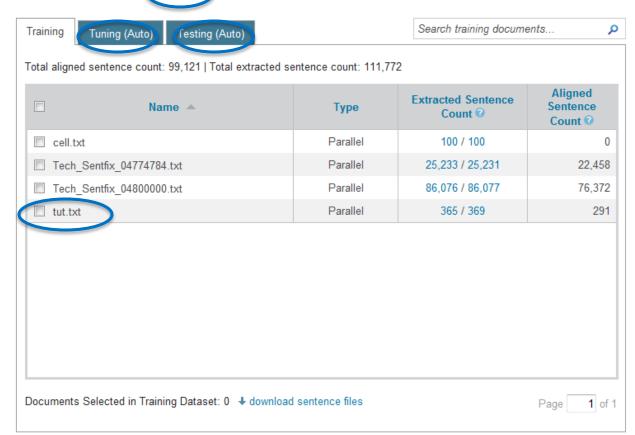
English to Japanese baseline

Language Pair: English to Japanese | Category: General

Training Name: Training #1 Deployed Status: BLEU Score: 37.89 Use Microsoft models: Yes

Related Tasks

- Review translations
- Clone this training
- Test translations



Translator Hub

Projects Community Help

Project Details

See list of trainings, browse to see training details or add a training.

View Help

English_to_Japanese_baseline

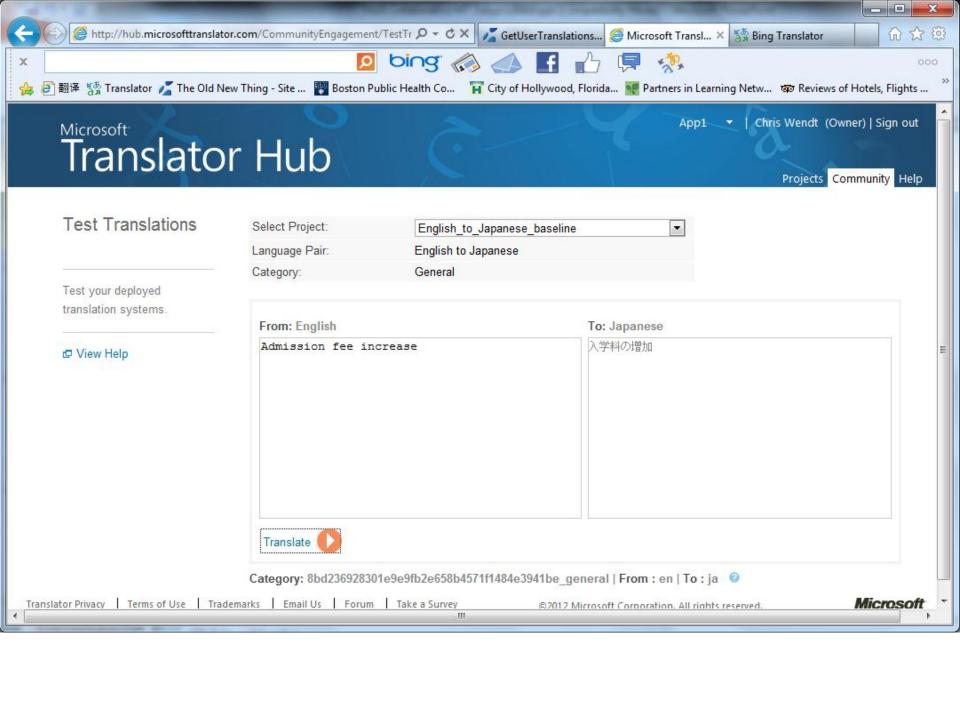
Language Pair: English to Japanese | Category: General

To create a baseline system for English->Japanese

Training

+ Add Training

Name	Status	BLEU	Aligi	ned Sentence Co	Monolingual Sentence	Uses Microsoft	
Name			Training	Tuning	Testing	Count	Model
PanasonicTraining	Succeeded	37.42	693,140	4,955	4,954	69,025	Yes
Training #1	Deployed	37.89	99,121	4,955	4,954	0	Yes
Training #2 With LocSt	Undeployed	37.33	545,239	4,955	4,954	69,025	Yes
Training #3	Succeeded	37.24	693,139	4,955	4,954	69,025	Yes



Review Document

Review Japanese translations of English sentences and submit alternate translations by hovering the mouse over the Japanese sentence that can be improved.

View Help

File: ocms_o14_1036_iw.txt Language Pair: English to Japanese Category: General	Using a program window Microsoft Translator 5 of 382 0 0 0
English Sentence	Improve translation ♥ engle
Using a program window	ダログラム ウィンドウを使用します。
Move to the upper-left corner of the page	ベージの左上間に移動します。
Perform the action assigned to a default button in a dialog box.	ダイアログ ボックスで既定のボタンに割り当てられたアクションを実行してく ださい。
<ui> Search the Web </ui>	<ui> Web </ui> 検索
<media alttext=" Button image " assetid="ZA010179580"></media> button: close the dialog box and open your Web search page	< メディア assetid ="ZA010179580"alttext ="フェース"/> ボタン: ダイアログ ボックス を閉じるし、Web 検索ページを開く
<ui> Create New Folder </ui>	<ui>新しいフォルダーの作成 </ui>
<media alttext=" Button image " assetid="ZA010180542"></media> button: create a new folder.	< メディア assetid ="ZA010180542"alttext ="フェース"/> ボタン: 新しいフォルダーを作成してください。
BOOLEAN	ブール値
End	終了
Orientation	印刷の向き



Where language meets the world

Bridging languages, cultures and technology



Microsoft Translator Hub is helping smaller languages thrive by putting the power to build machine translation systems in the hands of local communities

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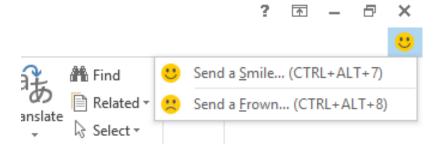




Just visit http://hub.microsofttranslator.com to do it yourself

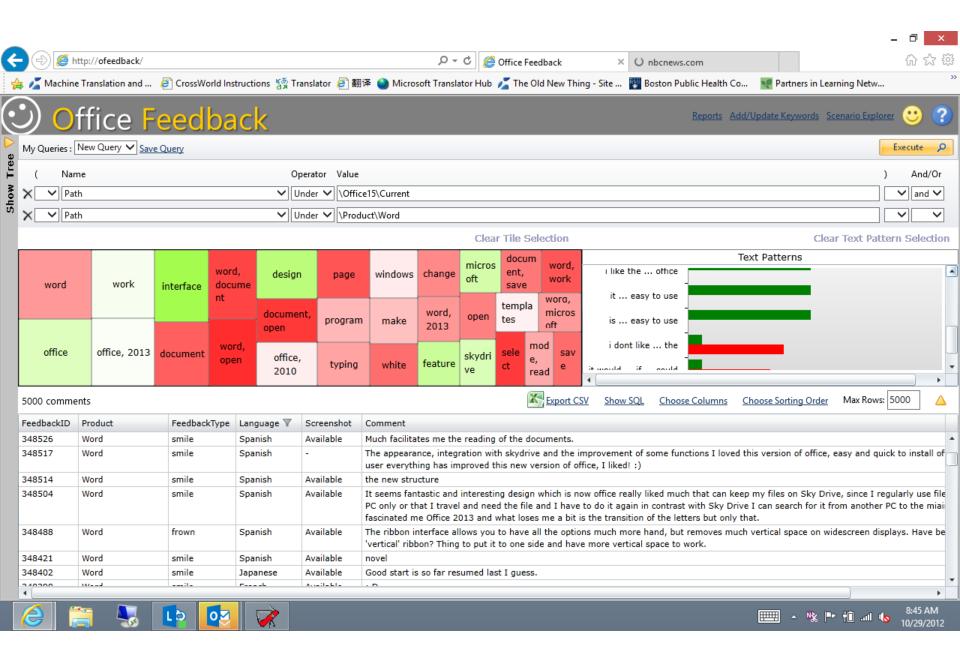
Office 2013 Beta Send-a-smile program

- 107 languages
- 234M words translated
- \$22B revenue, > 60% outside U.S.



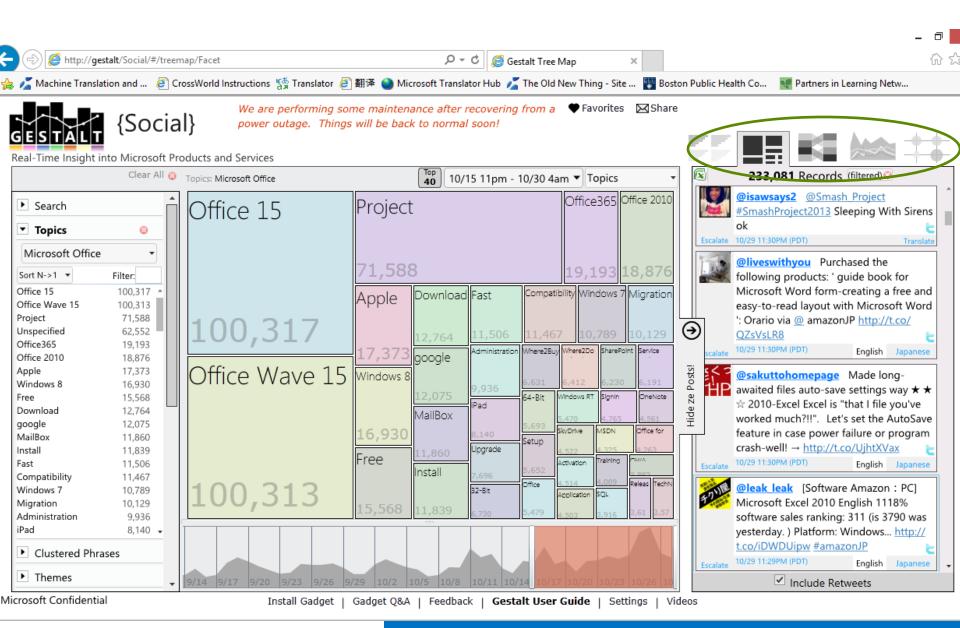
- > 100,000 Send-a-smiles received
- > 500 bugs fixed

Example of Business Intelligence use





APPENDIX Additional Slides



White Hmong



- White Hmong: not a crisis scenario like Haitian Creole
- But...a language in crisis

- The Hmong Diaspora
- Decline of White Hmong usage in younger generation



Some Examples from Hmong

Hmoob

hmoov

ntawv

tes

phom

lub tsev

ib lub tsev

kuv lub tsev tshiab

ib pluag mov

ib taig mov

ib taig zaub

'Hmong'

'destiny'

'book'

'hand'

'rifle'

'the house'

'a (one) house'

'my new house'

'a meal'

'a bowl of rice'

'a bowl of vegetables'

Community Engagement

- Involves two critical groups:
 - Community of native speakers
 - Community leader(s)
- Wide spectrum of users across the Hmong community:
 - College students
 - High school students
 - School teachers
 - School administrators, deans, professors
 - Business professionals
 - Elders



Building MT: Community Contributions

- Locating and vetting data
 - Locate data
 - Review documents that contain Hmong data
 - Review parallelism of Hmong-English documents
- Actively correcting errors from the engine
- Contributing translation "repairs" on web sites that translate to/from Hmong
- Community leaders trained models and coordinated reviews with community members

Result: Hmong is a supported language on Bing Translator and all other applications of Microsoft Translator