



KING COUNTY

1200 King County Courthouse
516 Third Avenue
Seattle, WA 98104

Signature Report

September 17, 2013

Motion 13974

Proposed No. 2013-0410.1

Sponsors von Reichbauer

1 A MOTION acknowledging receipt of a report identifying
2 which website language translation can be developed and
3 implemented based upon county needs in compliance with
4 the 2013 Budget Ordinance, Ordinance 17476, Section 130,
5 Proviso P3.

6 WHEREAS, the 2013 Budget Ordinance, Ordinance 17476, Section 120, Proviso
7 P3, requires the executive to transmit a motion and report by July 1, 2013, and

8 WHEREAS, the report identifies which website language translation can be
9 developed and implemented based upon county needs, and

10 WHEREAS, the report provides options for translating the content of the county's
11 websites that provide information on direct services, and

12 WHEREAS, the report describes a description of each translation option, the cost
13 and estimated time of implementation for each option and the projected accuracy of each
14 option;

15 NOW, THEREFORE, BE IT MOVED by the Council of King County:

16 The report relating to the identifying which website language translation can be
17 developed and implemented based upon county needs in compliance with the 2013

18 Budget Ordinance, Ordinance 17476, Section 120, Proviso P3, which is Attachment A to
19 this motion, is hereby acknowledged.

20

Motion 13974 was introduced on 9/9/2013 and passed by the Metropolitan King
County Council on 9/16/2013, by the following vote:

Yes: 7 - Mr. Phillips, Ms. Hague, Ms. Patterson, Ms. Lambert, Mr.
Dunn, Mr. McDermott and Mr. Dembowski
No: 0
Excused: 2 - Mr. von Reichbauer and Mr. Gossett

KING COUNTY COUNCIL
KING COUNTY, WASHINGTON


Larry Gossett, Chair

ATTEST:



Anne Noris, Clerk of the Council

Attachments: A. Websites Language Translation Report



King County

Websites Language Translation Report
June 2013

Contents

Executive Summary.....	3
Identifying King County’s Languages.....	4
County Language Tier Chart.....	5
Top Five Non-English Accessed Languages.....	6
Human Translation.....	7
Technology and Human Translation.....	7
The Cost to Translate.....	7
Technologies.....	8
Machine Translation.....	8
The Three Stages of the Machine Translation Process.....	8
Machine Translation Accuracy and Risks.....	9
Implementation.....	10
Cost.....	11
Risk.....	11
Localized Web Portal.....	11
NYC Language Gateway.....	11
YVC Gateway Costs.....	13
King County Implementation.....	13
Cost.....	14
Risk.....	14
Summary.....	15
Conclusion.....	17

Executive Summary

The diversity of King County's 1.9 million residents and customers- who speak more than 170 languages, according to the most recent census - offers challenges in providing and enabling access to essential services and information in multiple languages. The main access point for such information is the King County website, kingcounty.gov, which contains more than 300 localized language documents and web pages representing the Executive and Legislative branches of King County government, including all agencies and departments. The increasing reliance on the website (with more than 32 million page views in 2012) by residents on computers and smartphones has increased the need to support a multi-lingual populace with accurate information to stay informed and involved, and to empower members of our community as called for in the King County Strategic Plan.

By providing multi-language online access, the County is removing barriers for communities that may have previously prevented residents from successfully working and interacting with County government. However, the challenge lies in how to provide such access accurately and in a cost-effective manner.

The 2013 Adopted Budget Ordinance 17476, Section 120 included the following proviso (P3):

Of this appropriation, \$50,000 shall not be expended or encumbered until the executive transmits a report and a motion that acknowledges receipt of the report. The motion shall reference the proviso's ordinance, ordinance section, proviso number and subject matter in both the title and body of the motion. The executive must file the report and motion required by this proviso by July 1, 2013, in the form of a paper original and an electronic copy with the clerk of the council, who shall retain the original and provide an electronic copy to all councilmembers, the council chief of staff and the lead staff for the government accountability, oversight and financial performance committee or its successor. The executive shall provide a report providing options for translating the content of the county's websites that provide information on direct services, including, but not limited to, transportation, property taxes, health and public safety. Translation options shall provide for the translation of between three to five most commonly spoken languages in King County. The report shall include a description of the translation option, the cost and estimated time for implementation of each option, and the projected accuracy of each option. The options shall include, but not be limited to:

A. The use of technology to translate selected King County websites into different languages. It is intended that this technology would allow for the non-English version of the website to quickly reflect updates in the English language;

B. Developing a separate language website modeled after the NYC Language Gateway <http://www.nyc.gov/html/lg/html/home/home.shtml> providing information on essential resources for King County residents;

C. Expanded use of Portable Document Format (PDF) documents in multiple languages; and

D. Encouraging the use, through links on county website, of free web browsing tools that translate content into multiple languages.

This report was prepared in response to the proviso. It begins with a review of the current languages the King County website supports, followed by specific reports of different technologies which could be incorporated to align with County public engagement directives.

Identifying King County's Languages

About one in five people in King County speaks a language other than English at home, and a significant number of these residents have limited proficiency in English. Quality translation of English materials, especially on the County's website(s), into different languages is essential to provide equal access to culturally and linguistically appropriate information.

Those facts guided King County Executive Dow Constantine's issuance of an Executive Order on written language translation in October 2010. The order outlined steps that all departments should take to ensure that public communication materials and vital documents can be understood by the target audience – including people with limited English proficiency.

The Executive Order provided guidelines for document translation by ranking King County's most commonly spoken languages into three tiers based on census data. The language tiers reflect the language needs of limited English proficient populations in King County. Figure 1 below illustrates which languages are included in the three tiers.

Five different sources were used to identify the 20 most common language needs in King County. These languages are ranked into three tiers. Spanish is alone in Tier 1, as it is clearly the most prevalent of the non-English languages spoken in King County. Eight other languages are clustered and ranked in Tier 2 and are the next most frequently-spoken languages. Eleven additional languages make up Tier 3. In addition, programs with a known need can translate

public communication materials and vital documents into languages other than those in the three tiers.

County Language Tier Chart

	Language	Avg Rank	Tier
First Tier: Materials Shall be Translated	Spanish	1	1
Second Tier: Translation Recommended	Vietnamese	2	2
	Russian	4	2
	Somali	4	2
	Chinese	4	2
	Korean	6	2
	Ukrainian	7	2
	Amharic	8	2
	Punjabi	9	2
Third Tier: Translation Encouraged	Tagalog	10+	3
	Cambodian	10+	3
	Laotian	10+	3
	Japanese	10+	3
	Hindi	10+	3
	Arabic	10+	3
	Farsi	10+	3
	Tigrinya	10+	3
	Oromo	10+	3
	French	10+	3
	Samoan	10+	3

Key:

-  **First Tier:** "Public Communication Materials" shall be translated into target language as soon as feasible within available resources.
-  **Second Tier:** Translation of Public Communication Materials is recommended, depending on target audience.
-  **Third Tier:** Translation of Public Communication Materials is encouraged, depending on target audience.

Staff at Public Health – Seattle & King County have identified 27 languages which they support via their website:

Amharic (Ethiopian)	Japanese	Russian
Arabic	Karen (Tibetan)	Samoan
Bosnian	Khmer (Cambodian)	Somali
Burmese	Korean	Spanish
Chinese/Mandarin	Laotian	Swahili
English	Nepali	Tagalog (Filipino)
Farsi	Oromo (Ethiopian)	Tigrigna (Ethiopian)
French	Portuguese	Ukrainian
Hmong	Punjabi	Vietnamese

By reviewing online web metric reports relating to residents accessing localized web content from kingcounty.gov (especially Public Health – Seattle & King County), a report of website analytics provides a direction.

Top Five Non-English Accessed Languages

Based on residents accessing web pages available in a language other than English during 2012, the following five languages had the highest viewership:

-
1. Spanish
 2. Vietnamese
 3. Chinese
 4. Somali
 5. Russian
-

This data reinforces the guidance in the executive order on written language translation.

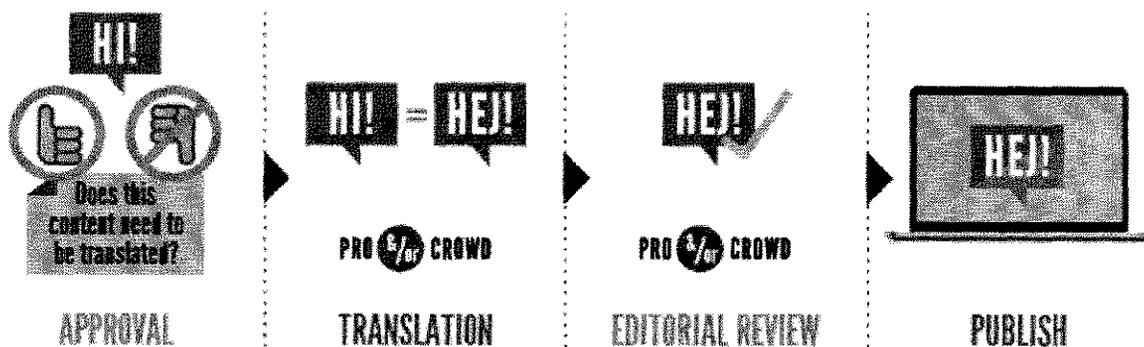
Besides viewing the currently available localized content, website traffic data indicates that some visitors to kingcounty.gov have translated the County’s English web content by using free global machine translation programming like Google Translate, Bing Translator and Babelfish, to name a few. Though the numbers are low in comparison with local web activity, the results do show that more people are making use of free software applications to self-translate content from kingcounty.gov on a mobile device and/or PC to gain access to vital services and information in a language that they can understand. Reviewing the numbers, we see a rise in self-translation during the summer travel season, with Metro Online as the main web target for translation.

Human Translation

King County's website currently provides web pages and general information in 27 languages. The information is presented in different formats including an HTML web page, downloadable PDF file, links to third-party websites, and text formats. These pages have been produced and translated by County employees or contracted translators from the English language content pages on County sites. The reliability of County human translation has supported public engagement and Equality and Social Justice in King County over the last several years.

Technology and Human Translation

Current human translation companies rely on technology to monitor and deliver localization of page content when appropriate. The technology does not produce the translation as much as align the monitoring and automation of content changes on a web page. Technology companies use proprietary Application Program Interface (API) programming, which works by monitoring the website pages and reacting when changes occur. These changes produce a translation reflecting the original subject matter. When a content update is performed, the program reads the file changes in the text, uploads them to the technology translation management system and performs the translations which are written, edited and reviewed through a combination of machine and human involvement. To manage a frequently changing website, with multiple updates and stakeholders, the ever-changing content needs to have a functional translational work-flow process to align with the multiple changes. Some technology companies provide this management as a service.



The Cost to Translate

Beyond the current level of response online, the need to work with a full service translation service, which can manage and produce translations beyond the automated machine output, would need to be investigated. These companies provide a full translation service using paid

translators from around the globe to produce specific translations based on the document original language.

The pricing of such a process is based on the amount of words contained in the document, as well as the language the final translation will be in. The average price for a translation services is \$0.20 per word. This amount differs for certain languages but, generally this amount can be used to determine costs in estimating one's translation programming.

For example: for each language translation, using \$0.20 per word and an average of 600 words per (a conservative) 50 documents or web page, and referencing Public Health – Seattle & King County's translation work as a guide, the estimate of how much it would cost to translate the top five languages identified earlier would be \$30,000. To extend translation work beyond the top five and include all 27 languages currently needed with the same cost values would cost the County approximately \$162,000 for the Public Health translation site alone. Though this work has already been done, this example shows that translation costs can escalate quickly, especially when looking at the many County agencies and departments who manage language content. Considering additional translation growth, this amount could reach \$500,000 quickly.

Technologies

Machine Translation

The term machine translation, or automatic translation, is where a computer software program translates a specific web page from one language to another language. This type of program delivers results based on recognizing reoccurring phrases, cultural syntax and character algorithms based on a rendered language review of the original pages.

The Three Stages of the Machine Translation Process

1. To avoid typical 'mistakes' from machine translations, pre-editing work would be needed to adapt all web content for the machine program. The grammar and vocabulary have to be simplified to reduce complexity and possible ambiguities.
2. Translation by the machine engine itself.
3. Even if the text has been pre-edited, it needs to be revised to produce an acceptable translation. Because of the structure of the machine translation produced sentences, even when human revised, the translation will not be the same standard as a human translation.

The ideal aim of machine translation system is to produce the clearest possible grammatical translation without human assistance. The need for a fast response, coupled with providing

multiple language translations on a free universal platform would seem to be the best solution for most.

However, regardless of whether one is using Google Translate (the world's most used, free translation program), Bing's free machine translation programming, or a host of other platform programs, major content development with translation in mind - including writing and editing for the web - would be necessary to produce an approved translation. Currently, the County is not staffed or resourced to provide this level of translated content development and review, thus machine translation is not recommended option at this time.

Machine Translation Accuracy and Risks

There is always a risk when relying on machine translation to convey information to a wide multi-lingual audience. Research in to this area has shown that translations between European languages are usually good (78 percent), while translations between European languages and Asian languages are quite poor (52 percent). Consistent with these findings the relatively poor accuracy level when machines translate from Roman-based letters (ABC) in most European languages to character-based non-letters like Chinese, Russian, Arabic or Japanese, to name a few.

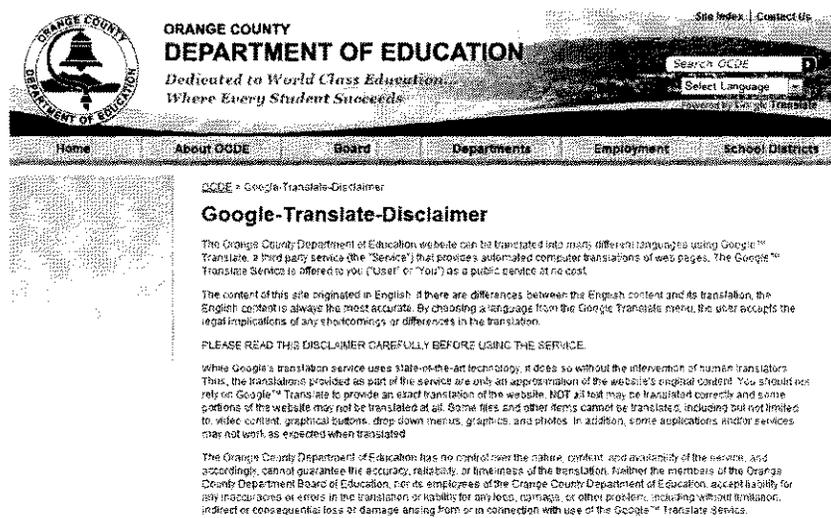
In addition, relying on English phrasing to be translated into Cyrillic (Russian) or Tagalog (Filipino) would need human intervention to determine if the correct translation represents the message, tone and localization as intended by the author. Mishaps abound, as in one reviewed example where the English word "hotline" in emergency materials had been translated into Spanish as "a line that is hot" because there is no Spanish language equivalent. In that case, the literal translation was not helpful or actionable for residents in need of emergency guidance.

The risk of producing incorrect or misunderstood web content can be a liability to the County. Other governments in the country have walked this fine line by either not offering machine automation translation, or limiting the availability of translation programming to only a few key informational pages or documents, while others provide a full menu of global languages for the resident to select.

Miami Dade County, located in Florida, provides a full site localization using Google Translation, offering more than 70 global languages. Orange County, located in California, provides Google translation programming for the Board of Education site but limits the languages available to just five, which represent the residents it serves. Besides limiting the amount of languages, the Education Department stresses, via a disclaimer, that the use of the program does not provide an exact translation of the website:

“While Google’s translation service uses state-of-the-art technology, it does so without the intervention of human translators. Thus, the translations provided as part of the service are only an approximation of the website’s original content. You should not rely on Google™ Translate to provide an exact translation of the website. **NOT** all text may be translated correctly and some portions of the website may not be translated at all. Some files and other items cannot be translated, including but not limited to, video content, graphical buttons, drop down menus, graphics, and photos. In addition, some applications and/or services may not work as expected when translated.

“The Orange County Department of Education has no control over the nature, content, and availability of the service, and accordingly, cannot guarantee the accuracy, reliability, or timeliness of the translation. Neither the members of the Orange County Department Board of Education, nor its employees of the Orange County Department of Education, accept liability for any inaccuracies or errors in the translation or liability for any loss, damage, or other problem, including without limitation, indirect or consequential loss or damage arising from or in connection with use of the Google™ Translate Service.”



Implementation

Machine translation can be implemented in several different ways.

1. Specific code provided by the vendor is placed on specific pages or on an entire site.
2. The use of widgets (code which allows the translation program to react to the user’s needs via the translation program) allows the user to select a supported language option from a pull down menu.
3. A link via an API producing the translation page back to the user.

Cost

Machine translation programming is free. However, the monitoring of translations and content review would need to be budgeted based on reported accuracy rates. There would be an ongoing need to review and edit the translations when errors or clarity is needed.

Risk

As stated earlier, the risk of producing incorrect or misunderstood web content can be a liability to the County. In addition, the County currently is not staffed or resourced to provide this level of translated content development and review, thus machine translation is not recommended option at this time.

Localized Web Portal

The Executive and Legislative branches of the County government have focused on developing and delivering essential information in 27 languages. Because most, if not all, translated documents and web pages are housed within department or agency website pages, centralizing this essential information to one specific location would provide a language portal.

NYC Language Gateway

An example of a centralized language portal is the NYC Language Gateway (www.nyc.gov/html/lg/html/home/home.shtml). The site incorporates the same design, site navigation and architecture as New York City's government website <http://www.nyc.gov/portal/site/nycgov>. The portal delivers to residents of New York City

“....programs, services and activities in English, Spanish, Chinese and Russian. The site provides essential City resources for New Yorkers in many areas of City life: business; education and child care; employment and taxation; health and public safety; housing; immigration; social services; and transportation and safety.”

The development of the language portal came from an executive order from the Mayor:

“In July 2008, Mayor Bloomberg signed Executive Order 120, creating a centralized language access policy for New York City. Executive Order 120 mandates that all City agencies that provide direct public services offer access in other languages. The NYC Language Gateway helps to ensure that the City of New York and NYC.gov are accessible to all New Yorkers.”

Mayor Bloomberg's executive order directed all New York City agencies to

- translate essential public documents and forms into the top six languages spoken in New York City.

- provide interpretation services in at least the top six languages spoken in New York City.
- post visible signs about the rights to interpretation and translation in all agency offices.
- designate a language access coordinator and develop plans for complying with this Executive Order in the coming months.
- convey information in their materials using plain, nontechnical language.

Development of the site occurred over a two year period, including the resolve to support four languages “that provide direct public services” instead of six, which was the original stated amount. Following two years of development, the Language Gateway launched in 2010.

“The NYC Language Gateway was launched on April 15, 2010, and it currently includes over 200 individual documents and over 900 document translations (Spanish, Russian and Chinese) from over 17 City agencies.”

Transparency with current NYC Site



Supports Four Languages Only

The Language Gateway provides English, plus three other languages: Spanish, Russian and Chinese. This was determined by a project group, including government and community leaders, department content developers and technology workers. One of the major tasks was to identify what languages should be the focal point of the website. It was determined that the site would focus on the four main languages the government was already supporting plus, using statistical and community relations information, the four main languages were also based on segments of the local population. Providing a fully translated portal offering multiple languages to a cross section of New York City residents was seen as a risk to manage accuracy and

reliability of the information, along with security and liability, the containment of a static and secure language portal was deemed essential.

NYC Gateway Costs

The Language Gateway was developed using both grant money and New York City Information Technology budget, which totaled \$1,550,000. Of that amount, \$750,000 was incorporated for technical development, implementation and ongoing maintenance. The language gateway became part of the extensive New York City website network. A grant from the Annie E. Casey Foundation funded the translation and formatting of the documents for the gateway.

King County Implementation

For King County to develop and launch a language portal similar to New York City's, many questions would need to be answered.

1. Determine if a portal is needed.
 - a. Does a need exist within the communities of King County?
 - b. Is there a need within the departments and agencies to expand to this level?
 - c. Is there an overall need to expand beyond current translation activities?
2. Determine what level of translation is needed.
 - a. Website
 - b. Expanded County signage (directional)
 - c. Review current translations needs to determine if a website would be the best way to address this area
3. Determine benefit and business efficiencies developing a translated site
4. Identify frequently requested documents, applications, forms and notices on topics representing County services for translation.
5. Determine what languages would be the focus of the portal.
 - a. Focus on a key population mix of the County
 - b. Provide less documents but to a wider language audience.
6. Review current non-English documents on kingcounty.gov including formats:
 - a. Web pages
 - b. HTML
 - c. PDF - Searchable
 - d. XML
 - e. Video
 - f. Social media
7. Develop list of new topics documents for multi-language inclusion.
8. Determine if there are enough resources to manage translation and develop new topics.
9. Develop budget to develop and sustain translation components

- a. Resources and staffing needs to be included
10. Determine who would administer and manage overall “Language Gateway”.
- a. Would a group comprised of both community and public sector people be on a managing board?

Cost

The cost of such a web project would be dependent on the number of languages represented, the amount of translation needed to build the direct services the public is expecting, and the technical development which will be needed. A timeline representing the length of this project cannot be determined at this time. Estimated costs are based on 50 percent of the resource’s time for this project:

- Front-end designer follow current User Centered Design (UCD) project standards
 - 50 percent of time - \$60,000
- Back-end web developer – code developing in the CMS system
 - 50 percent of time - \$80,000
- Project Manager
 - 50 percent of time – \$50,000
- Business Analysts (needed before technical start)
 - 40 percent of time - \$35,000
- User testing
 - 25 percent of time - \$20,000
- Translation Vendor (rough estimate of top five languages for web development only)
 - \$150,000 and up

A rough estimate for a year-long project at the technical level only is about \$375,000. The budgeting for staff and resources representing County departments and agencies actively participating in translating their own documents and forms would need to be determined and including in that figure.

Risk

Before a technical project can be developed to build a portal website business requirements must be gathered to see if this would be the best direction to take the County. Is there a need and have there been requests from communities who are seeking expansion of languages that will serve them better when engaging with the County.

Summary

The following chart outlines the pros and cons to each translation option at this time.

Option	Description	Pros & Cons	Cost Estimate
Human Translation	Use of translators (either King County employees or a vendor) to produce localized web pages, PDFs and other service/informational documents.	Pros: <ul style="list-style-type: none"> • Control language translation and deployment • Produce reliable localized documents Cons: <ul style="list-style-type: none"> • Need resources with language and writing abilities • Managing too many languages would push website capacity 	Medium to High. Based on amount of languages, documents and resources needed.
Machine Translation	Application-based programming (including Google Translate, Big Translate, more) to be deployed on kingcounty.gov, allowing visitors to select the language of their choice for translation of information.	Pros: <ul style="list-style-type: none"> • Free to use and can provide more than 70 languages Cons: <ul style="list-style-type: none"> • Accuracy of translation in question • Greater risk and liability to County for error in translations • Would need to add resources to monitor risk 	Translation – Free. Managing risk level to County – Low.

Option	Description	Pros & Cons	Cost Estimate
Self-Translation	Web visitors select a mobile application or PC-based translation tool that renders a page of information on the website into their language of choice.	Pros: <ul style="list-style-type: none"> • Continued growth in mobile devices and easy translation apps will allow self-service model for translation to expand • Can monitor web traffic • Do not have to add resources to manage translation quality • Eases County risk and liability Cons: None	N/A
Localized Web Portal	Specific web URL destination on kingcounty.gov which supports language translation information with links to known translated services.	Pros: <ul style="list-style-type: none"> • Centralized access to translated information at one site • Do not need to build site, but can link to currently localized pages, etc. • Manage all translations and supported languages Cons: <ul style="list-style-type: none"> • Deciding what languages and how many to support • Resources will be needed to translate and manage site • Will translations be based on current English language online documents or will specific language documents be written from scratch? 	High

Conclusion

The diversity of King County's populace provides the County an opportunity to align essential services with the multi-lingual communities and residents. The decision to expand language translation beyond current levels does not rely on technologies that are available, but on the needs of the communities the County serves.

When King County Executive Dow Constantine directed all departments to ensure that their public communication materials and documents can aid both the target audience and residents with limited English proficiency, he was providing guidelines for document translation management for the County.

Reviewing translation-based technologies used in both private and public sectors, whether machine translation, a centralized language website, or simple PDF documents, the need to determine if additional language or multiple access to translated documents would improve the efficiencies for both the residents and the County must be weighed.

This report does not provide a recommendation regarding what technologies would best serve the County in managing and promoting language based information and documentation to the County.