

## Case Study

# Making Text Translation More Efficient

How TokyoTech reduced text translation time to 30 seconds

## Executive Summary

The team at TokyoTechX developed a content translation tool using Microsoft Excel and Python scripts to speed up course development in Studio and to increase the reach of their courses by offering content in multiple languages.

## Challenge

Globally about 75% of all MOOCs are offered in English. Translating MOOCs taught in English to other languages can increase participant enrollment and disperse course knowledge to non-English language learners. However, it takes a significant amount of time and resources to translate text from English into another language, and then manually replace the translated text (and images) in the targeted language in edX Studio.

## Approach

In an effort to reduce the time needed to replace translated text in files, Tokyo Tech's Online Education Development Office (OEDO) developed a Content Modification Tool that replaces English text with translated Japanese text using a localized version of Stanford University's MOOC on "Creating Effective Online and Blended Courses", for Japanese faculty/staff development offered on edX edge.

The tool exploits the export/import function in edX Studio, which is objectively designed for creating an offline backup course. Overall, this tool extracts all text contents along with their associated sections into an Excel table. When the latter part of the Excel sheet is completely filled in with a list of HTML files with the new contents, the contents in the backup course will be replaced according to information noted in the Excel sheet. In our case, we replaced 170 different English text blocks, which were translated into Japanese, in just a few seconds using a rewritten Python script. Although we developed this tool to replace English text with Japanese, we expect the tool can be used for other languages, as well.



*EdX is a flexible platform in the sense that any importing course instance with or without modification is able to be interpreted as long as it follows the OLX structure. Given this, a course instance can be alternatively developed entirely offline by an automated tool whose functionality is simply arranging contents in an OLX structure and importing to edX. It greatly reduces the course development process as all tasks are done offline."*

## Additional Information

Here is the link to the tool on github:

<https://github.com/TokyoTechX/edx-texttool>

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## Outcome

The redundant task of manually replacing translated text files can be easily automated using the tool outlined above. It took a task which would take hours to complete and it was done with 10s of seconds.

In addition, having this tool affords the team some operational flexibility as they are able to remove much of the guesswork in estimating time needed to translate a piece of content.

## Learnings

Through this process, our team learned that if we had planned to implement the text replacement tool from the beginning, we would have been more careful in how the translated text and images within it were formatted. That is, the original file contained text, images and hyperlinked URLs. These items within the translated file in some cases were not formatted the same as the original and then when uploaded/replaced had to be adjusted manually. Therefore, preserving the original file text/image format in the translated file is important.