
TCU Department of Modern Language Studies

**Chinese Learning Platform Project
Vision**

Version 1.2

Chinese Learning Platform Project	Version: 1.2
Vision	Date: 05/02/2021

Revision History

Date	Version	Description	Author
10/01/2021	1.0	Initial Vision Document	Quang Truong, Dominick Cartagena, Nhan Ly, Ryan Luly
11/14/2021	1.0	Minor Corrections and Additions	Dominick Cartagena, Jason Eisdorfer
12/02/2021	1.1	Added Information to Sections; 2.3, 2.5, 3.1, 3.2, 3.3,4.1	Dominick Cartagena, Quang Truong
05/02/2022	1.2	Small Revisions and Final Changes	Dominick Cartagen

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1. Introduction

The purpose of this document is to collect, analyze, and define the business requirements, desired ultimate business outcomes and features of the Chinese Learning Platform. It focuses on the capabilities needed by the clients and the target users, and why these needs exist in the first place. The details of how the Chinese Learning Platform fulfilled these needs are detailed in the use-case and supplementary documentation.

1.1 Background

Chinese Learning Platform is a part of STARTALK Program – a federal grant program funded by the National Security Agency. The mission of the program is to assist students in learning languages identified critical by STARTALK including Chinese, Arabic, Hindi, Persian, Korean, Russian, and Turkish. The Chinese Learning Platform project aims at supporting students in learning Chinese first and will be extended to other languages if possible. The supports include, but not limited to, assistance in vocabulary, listening, reading, writing, and speaking Chinese. The project is going to be deployed in 2022 STARTALK Summer Program at Texas Christian University.

2. Business Requirements

2.1 Business Opportunity/Problem Statement

The problem of	<i>Current Chinese language learning platforms</i>
affects	<i>Students and teachers</i>
the impact of which is	<i>Making learning Chinese more difficult in a classroom setting</i>
a successful solution would be	<i>Able to provide students with an easier way to learn textbook material via quick translation, vocab/grammar definitions, and text-to-speech capabilities. It would also provide teachers with the ability to create assignments and exams with a multitude of question types including speech, video, multiple-choice, short answer, and true/false. Also, this solution will help teachers be able to provide real-time feedback to students. All of this will help increase the learning rate and success of students trying to learn Chinese at the STARTALK program.</i>

2.2 Business Objectives

BO-1: Increase the number of students enrolled in the study of critical languages.

BO-2: Increase the number of highly effective critical-language teachers in the U.S.

BO-3: Increase the number of highly effective materials and curricula available to teachers and students of critical-need languages.

BO-4: Apply for NSA Grant next year.

2.3 Success Metrics

SM-1: Client approval of fully functional textbook.

SM-2: 80% or better auto translation score.

SM-3: 80% or better tokenization correction score.

SM-4: Receive NSA Grant next year.

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2.4 Vision Statement

For	<i>students (K-16) and teachers</i>
Who	<i>would like to learn Chinese or teach Chinese</i>
The Chinese Learning Platform	<i>is an educational learning platform</i>
That	<i>provides well-designed language textbooks and promotes dynamic learning experience in classes.</i>
Unlike	<i>Brightspace, Blackboard, or Canvas</i>
Our product	<ul style="list-style-type: none"> - <i>focuses on efficiency in learning by allowing instance access to romanization, audio, and definition of Chinese characters in textbooks.</i> - <i>enables interactive classroom experience where students and teachers can communicate by different means including video, audio, and text.</i>

2.5 Business Risks

RI-1: Similar learning platform such as Voicethread and other digital textbooks. For example: the current textbook Integrated Chinese already has a web version. (Probability = 0.1; Impact = 3)

RI-2: Automatic tokenization and translation is not efficient and is often incorrect. This decreases the usability and efficiency of application. (Probability = 0.2; Impact = 7)

RI-3: Using Google API's could become too expensive. (Probability 0.2; Impact 5)

2.6 Business Assumptions and Dependencies

AS-1: The textbook should be used mostly for homework purposes.

AS-2: The textbook will be fully provided and created by the clients.

DE-1: Google API services will be reliable and will communicate successfully with the platform.

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3. Stakeholder Profiles and User Descriptions

3.1 Stakeholder Summary

Stakeholder	Major value or benefit from this product	Attitudes	Major features of interest	Constraints	End user or not?
Students	Easier access to textbook material, real-time feedback on assignments and exams.	None Identified	Easy ability to translate and hear text-speech of the textbook, ability to receive real-time feedback from teachers.	None identified	End-user
Teachers	Easier process to assist students with feedback on their assignments, multiple ways to assign questions to gauge students learning progress	Committed to assisting in feedback regarding requirements	Ability to assign speech and video questions, ability to provide real-time feedback	Training for teachers in Internet usage needed.	End-user
National Security Agency	Fulfill the need for more U.S. citizens to be proficient in world languages, especially those languages necessary to meet political, economic, and security interests.	Will provide grant funds should this project succeed in assisting future development of the textbook and website.	None identified	None identified	No
TCU Developers	Be able to graduate.	Committed to the project in developing the project.	Responsive website that satisfies the end-users' requirements.	Time, Resources for API's	No

3.2 User Environment

Each student will use it 3-5 times a week. Each time lasts 30 minutes.

Our application will not interact with any other applications other than cloud services such as Google Cloud API's and AWS.

The expected environment should be indoor where a stable internet connection and a PC/laptop are required in order to access the learning platform.

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3.3 Summary of Key Stakeholder or User Needs

Need (Job to be done)	Priority (High, Medium, Low)	Concerns	Current solution	Proposed solution
Textbook with translation, TTS, pinyin, vocab/cultural note.	High	Students are unable to efficiently learn a new language without quick translation, audio, and understanding of words.	Already made online textbooks that are unable to be edited for the teacher's need of teaching.	Implement an online textbook platform that has the following features; translation, tts, pinyin, vocab/cultural note.
Discussion Forums with Audio/Video supported.	Medium	Students could not communicate with their peers by audio/video in discussion threads.	Zoom meeting is typically conducted in order to practice speaking.	Implement a discussion forum that supports recording audio/video, which is similar to many social media platforms such as Facebook or Snapchat.
Audio test/homework.	Medium	Students are unable to practice speaking out loud in an effective manner at home.	Assign students to work on speaking at home or give them unlimited time to submit an audio assignment.	Implement an audio test/homework function that gives students an exact amount of specified time before they must respond to the question.

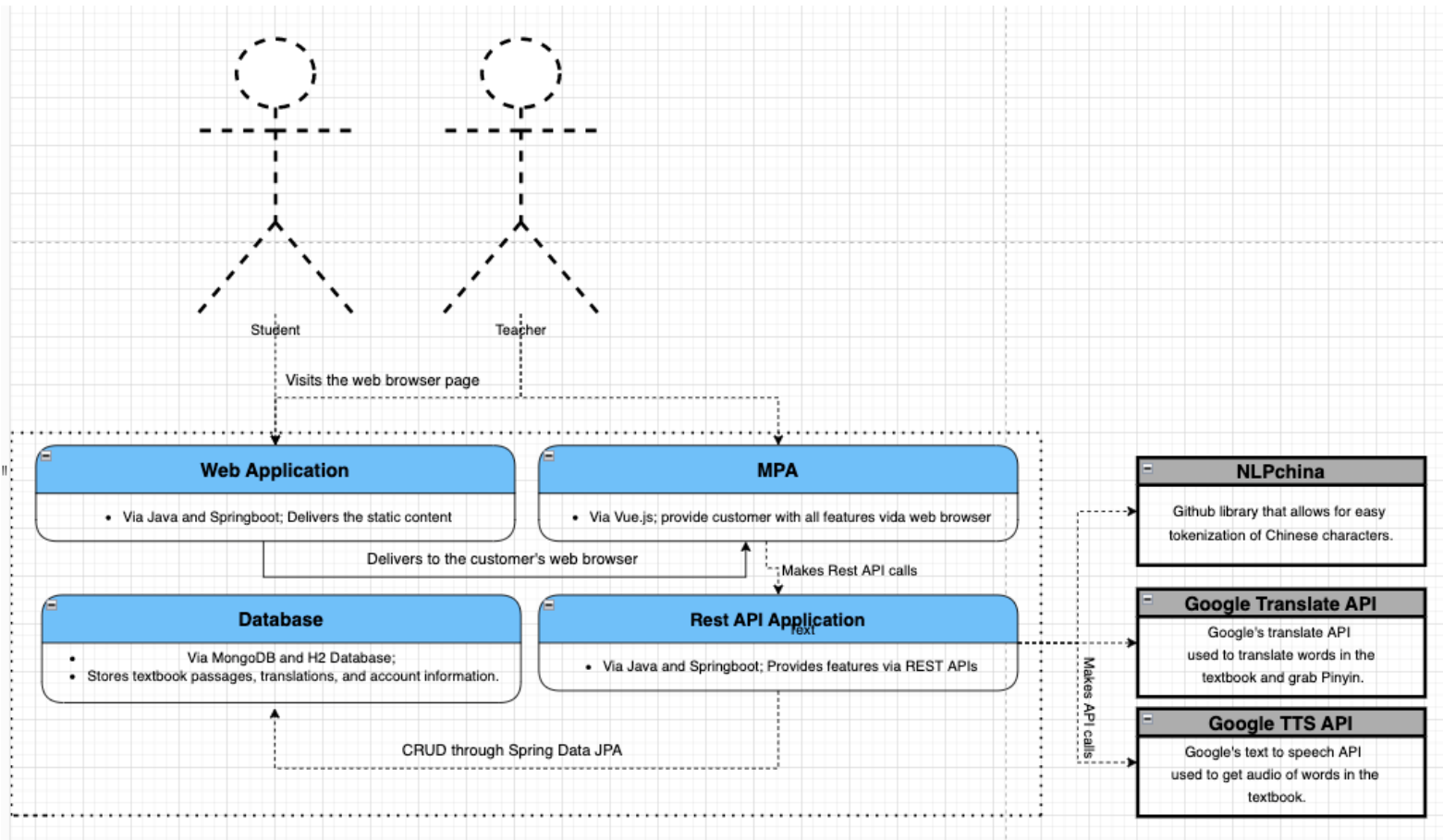
3.4 Alternatives and Competition

The main competition would be other online textbooks that offer similar features such as online tests and homework. However, even these other textbooks do not normally have separate classes with control by the teacher or all of the features we have included.

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4. Scope and Limitations

4.1 Product Perspective



4.2 Major Features / Scope

- FE-1: Log-in to an account as a student or teacher.
- FE-2: Translate text passage from Chinese characters to Pinyin.
- FE-3: Translate key vocabulary or grammar terms to English when selected.
- FE-4: Text-to-speech options for the textbook passage and for specific words/sentences.
- FE-5: Create an audio test.
- FE-6: Complete the audio test/assignment.
- FE-7: Check scores on audio tests/assignments.
- FE-8: Provide and view feedback on assignments and exams.
- FE-9: Forum to ask questions and discuss current topics.
- FE-10: Edit existing or add a new passage/chapter to a textbook.
- FE-11: Customize tokenization of a passage.

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4.3 Deployment Considerations

As this will be used for a class online it is possible users will have to use this in all different time zones. As the product increases in use it will also be used in more differing areas, since it currently is for a very targeted audience of students and teachers using a single textbook, but in the future may extend to a larger variety of language classes.

5. Other Product Requirements

So far, the product is expected to be used with Chinese textbooks only. The product does not support other languages.