Executive Summary

The challenge is how to effectively incorporate AI into learning experiences. Throughout our careers, we have been looking for ways to learn without the consequence of assessment while examinations seem to be the only way to select the fittest. The pressure to demonstrate knowledge surpasses the fun of learning and discovering. This project for **Chinese LearnFree**, aims to provide a tailored and stress free learning experience utilizing AI.

The market for Chinese learning is unquestionably huge whether it is learning as a mother tongue or as a second language, but only until the presence of a large language model can we feel the impact of machine intelligence. Our task at **Chinese LearnFree** is to incorporate curriculum-bounded content as well as user profile to create a "Personalized AI" for use by individual learners in an education setting. The reward for **Chinese LearnFree** can be huge. It is not only because of the huge captive Chinese speaking market, but also the principles behind can be applied to different subjects or disciplines. Our unique combination of three AIs: Large Language model, Expert model and User Profile model, together will form the basis for “Triarch AI System” as a “Personalized AI" framework in our subsequent explorations and inventions.

EdTech industries lag behind other disruptive technologies. Nonetheless the examination system still persists, and at present **Chinese LearnFree** will not only attempt to solve the problem of text analytics and build learners' profiles, but also create assessment processes as personalized learning efforts. During the COVID time, it was necessary to complement face-to-face classroom teaching to online learning with mobile devices which has now proved to be fashionable and effective.

During the forthcoming three-year incubation, we will invite pilot schools and teachers to test with us the effectiveness of **Chinese LearnFree** and a possible paradigm in MOCK100. As technologists build digital twins for buildings and the environment, can we build individual digital twins on knowledge attainment? **Chinese LearnFree** is looking for opportunities to collaborate with Science Park and AWS. Last but not least, both the principal Taiyar Publishers Limited and the founders have been in education publishing for more than 50 years. It will be an excellent opportunity to put years of practice into a disruptive project meaningful to society at large and individuals as learners.

1.0 What problems to resolve?

1.1 "Why do students prefer English to Chinese?"
Brain development in learning is socially contextualized. It happens according to experiences, social relationships and “cognitive opportunities” is arguably subjectively perceived and emotionally experienced by the learner. As a result, a reliable, appropriate and sustainable Chinese learning context for generations to come becomes an important cultural sustainability issue.

As a bilingual world city, Hong Kong students are being brought up in two languages. Chinese and English are two distinct languages with different linguistic structures. Chinese is characterized by its tonal nature and the use of characters as its writing system. English is non-tonal and uses an alphabet-based writing system. Chinese grammar relies heavily on the use of particles and word order, while English relies more on verb conjugation and the use of articles and prepositions. Despite these differences, both languages are rich in vocabulary and have their own unique ways of expressing ideas and concepts. Given the language differences, students from families with overseas domestic helpers are being brought up in a less than holistic language environment. In addition to English mass media influx every day, students generally prefer English learning to Chinese learning.

1.2 "Why can't students improve in Chinese?"
First, learning Chinese characters is the prerequisite for learning any Chinese content. Because the Chinese writing system is vastly different from alphabetic languages, it is challenging to learn and remember thousands of characters. Second, Chinese has four tones, affecting learners’ ability to communicate and comprehend effectively. Third, the grammar structure in Chinese is different from English, requiring learners to adjust their thinking and sentence construction. Fourth, Chinese is a tonal language and the meaning of words can change depending on the tone used. Overall, these challenges can make Chinese learning a demanding task, requiring dedication and extensive practice in skills: listening, speaking, reading and writing, preferably in a holistic Chinese learning environment.

1.3 "Know Your Student!"
Upon admissions to primary school (KS1), young students are overwhelmed not only by textbooks, but exercise books, test papers and storybooks which make learning and comprehending new characters challenging. Can we teach Chinese appropriately at a fractional pace and without stress? These are challenges ahead which need a thorough understanding of the EdTech landscape and the possibilities they bring forth.

2.0 Concept, features and application for product / solution

Chinese LearnFree:
To provide a tailored and stress free Chinese learning experience utilizing AI

In Chinese learning, "Know Your Student" means understanding specific needs, goals, and preferences of the student. This includes their current level of proficiency in Chinese, preferred learning style, specific areas of focus, and any difficulties they may have encountered in the past. By gaining a deeper understanding of the student's individual learning profile, a more tailored and effective Chinese learning experience can be provided, namely:
-A level learning experience by providing matching exercises without excessively use of unlearnt characters or idioms;
-A stress-free comprehension of Chinese content and grammar, focusing on one item at one time;
-A system of learning follow-up and follow through process to enable a high degree of itemized learning attainment.

2.1 Background and proposed features
Chinese LearnFree is a curriculum-bounded (K12) Chinese Grammar Intelligence Platform composed of Chinese Linguistic, Grammar and Thematic Intelligence knowledge base with four sets of function in:

1. Text Analytics
2. Exercise Matching
3. Composition Review & Recommendation
4. Chinese Learning Chatbot

Usage scenarios include scanning of a page from a textbook or an exercise book or a student composition by a parent or a student, with **Chinese LearnFree** generating tailor-made questions, or answers and explanations, or writing recommendations, or pairing exercises (personalized physical book selling through Taiyar) as feedback. **Chinese LearnFree Chatbot** will forward continuous prompts until such itemized knowledge has been attained by such learner through verified learning outcomes (Appendix 1 Usage Scenarios). Knowledge attained will be recorded according to Bloom's Taxonomy.

2.1.1 Goodwill, Prior Inventions and Content Resources
Taiyar Publishers Limited (Taiyar) was established in 1968 with consecutive titles in Chinese language, General Studies and values education up to present. By 2015, Taiyar saw the need to switch to digital printing to eliminate wastage for pre-print inventory and devised a protocol for page-based publishing, hence making personalized books feasible. A short term patent (HK1221864) was granted with funding from Hong Kong Productivity Council (Appendix 2:1-4). This pagination protocol was made into a software application enabling each page to be configured into different books. Currently there are 50,000 pages on cloud server (AWS ID

598415231451) and target to reach 200,000 pages (assuming 2000 titles at 100 pages each) within six months of incubation. A web-based software enabling tagging of page metadata was created to manage the vast number of pages and their metadata (currently available at www.PaperFly.com).

Since 2016, Taiyar (trading under iLearners) has been promoting and servicing customized school-based publications. An average of about 30 schools per year have been using school-based exercises offering closer content relationships with their textbooks during 2016-2023. During Hong Kong Book Fair 2023, about 300 parents bought customized exercises from Taiyar spending $250-$400 each, proving the validity of customized exercises from individual parent-customers (online sales of customized exercises is currently available from www.Taiyar.com). A demand for further personalization is expected.

An associated Open.Page App was developed allowing any physical page to be linked with online resources O2O without the use of QR Code (Open.Page is currently available on App Store and Google Play). This invention together with pagination protocol enable any page to be shuffled yet continuously linked with its designated media, providing a prerequisite for any personalized learning experience.

2.1.2 Creating Student Profile (for K12 Chinese)
Learning analytics collected will analyze data about learner behavior and insights into learner progress, engagement, and areas for improvement, helping instructors to make data-driven decisions to enhance learning experience. An "Expert AI" describing fractional knowledge in terms of the "Knowledge Matrix" (Appendix 3 Knowledge Matrix Morphology) while a "Selfish AI" representing user profile together form a "Triarch AI System" (referring to Section 3.1) covering three aspects of artificial intelligence creating an artificial Chinese learning context, curriculum-bounded yet personal.

2.2 How applicable is **Chinese LearnFree**
In addition to the advantages of eLearning, there is a growing demand for personalized learning experiences. EdTech platforms can now offer personalized learning paths and adaptive assessments, catering to the unique needs and learning styles of individual students. **Chinese LearnFree** allows for a more tailored and effective educational experience, enhancing student engagement and improving learning outcomes. As education becomes more digital and remote, there is a need for technology that facilitates seamless interaction, discussion, and teamwork, replicating the benefits of traditional classroom settings. Overall, the demand for EdTech extends beyond eLearning and encompasses personalized learning, collaboration, and accessibility (Appendix 4 Overcoming Problems in Learning: LearnFree AI).

2.2.1 Mobile Learning

During the height of COVID, eLearning from home and mobile devices played a significant role in the absence of face-to-face classroom teaching as parents are now more open to online resources. **Chinese LearnFree** plans to focus on mobile devices and mobile learning platforms/apps allow learners to access content and participate in courses on their smartphones and tablets, providing flexibility and accessibility to highly personalized homework marking while learning profiles are established.

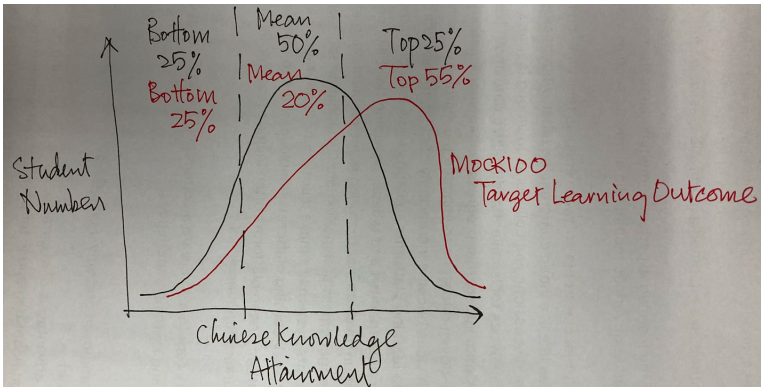
2.2.3 Hybrid-Learning technologies

Unlike any other EdTech offerings, Taiyar offers Hybrid Learning to take advantage of both physical print and digital mobile worlds modals (Appendix 5; 1-2 A Holistic Approach to Learning Design / An Effective Hybrid Learning Experience).

It is also known that children under eight are better at working with physical books and pens for eye-hand coordination. Taiyar offers a unique hybrid solution that enables interoperability among papers, web screens and mobile devices in Chinese or subject learning. In fact, current patented technologies already allow smart-pens with micro scanner write on regular paper print to enable real time synchronization of answers or compositions onto digital devices. Taiyar's unique pagination protocol allows coded prints to be included in any exercises or test papers, to make smart-pen application a practical reality.

2.2.4 MOCK100: A new paradigm for eLearning

Chinese LearnFree will not be about how students score in a Current Syllabus (can be a test, with a combination of knowledge items), but how long students take (in terms of iterations) to attain each knowledge item. In short, “Assessment OF Learning” is being replaced by “Assessment AS Learning”. This fundamental shift in the learning paradigm upon full knowledge attainment can be known as **Model Optimization for Codified Knowledge at 100% (MOCK100) under Chinese LearnFree.**



(Figure 1 Target Impact of MOCK100: Improving Top Learning Outcome up to 55%)

As “Knowledge Matrix” and student profile are clearly defined, consecutive and short learning experiences (anytime/anywhere) can be deployed to each and every learner. If **Chinese LearnFree** can prove continuous iterations of itemized knowledge can improve attainment, then middle range students based on "criterion-referenced learning outcomes" can possibly improve up to the top quarter, through repeated learning practices and improved confidence. Subject to further investigations, this migration can come from 50% or more parents from middle range students or the "mean" quarters mobilizing and willing to apply **Chinese LearnFree** as alternative or supplement to tutorial support. Overall, the impact of this paradigm shift may result in a larger disparity between highly attained learners using Chinese LearnFree and marginally attained learners not using Chinese LearnFree.

2.3 How can AI enable better learning in all aspects?

The introduction of ChatGPT3.5 from 2022 changed the entire outlook for AI applications. While researchers and developers were still struggling with NLP, this large language model leapfrogged years of local research. Our current solution "Triarch AI System” architecture makes use of the existing large language model AI available while interacting with our own "Expert AI" and "Selfish AI" established prior to and during the proposed incubation. Furthermore, text input is based on currently available OCR technologies resulting in 99.90% accuracy in page recognition for curriculum bounded materials. In the immediate future, image recognition technologies will be incorporated to enrich the text or book recognition experiences. With the technologies in place, Chinese LearnFree will be the unique provider for a Hybrid Learning environment (Appendix 6 Developing An AI-driven Pedagogy).

2.3.1 Enabling Memory Retention

While there have been several studies exploring the effects of digital format on human memory, there is limited research specifically comparing digital format to page-based format. However, some studies have highlighted potential disadvantages of digital format in relation to memory. For instance, a study by Sparrow et al. (2011) found that people tend to rely on external sources such as the internet to store information, leading to decreased memory retention of specific details. Another study by Mangen et al. (2013) suggested that reading on screens may result in a shallower processing of information compared to reading on paper, potentially impacting memory encoding. While these studies provide some insights into the potential disadvantages of digital format, further research is needed to fully understand the specific limitations relative to page-based format and human memory.

2.3.2 Learning Personalization

Personalized learning in terms of learner centricity can vary depending on the context and perspective. Personalisation starts with behavioral changes, along with technological changes and ends with psychological changes. As a result, providing a continuous and reliable learning context is deemed to be the most critical starting point for Chinese learning, locally or globally. In the education space, notable leaders and organizations are driving innovation and pushing for personalized learning to become more widely adopted in education systems around the world. So, when and what technologies can change our education system of today, so that learners can direct learning according to their interests or ability.

2.4 Technology niche and upcoming challenges?
Technology niche in AI involves identifying a specific area within the broader field of artificial intelligence where specialization or focus takes place.

2.4.1 Research and understand the field of AI:
From publishing to printing, the need to transform physical print information to digital information to analytical big data forms a unique domain of knowledge and is the core competence of this "Expert AI". In time, Taiyar is required to build OCR and Image Recognition technologies while securing reliable and sustainable large language AI models against political and commercial conflicts.

2.4.2 Identify a specific problem or industry:
Any organizations with extensive amounts of digitized PDFs will require our capability to develop corresponding Triarch AI System Architecture for a workflow specific user-centric AI. Our current space is with books and exercises, but managing health check reports, or book-keeping and accounting records can be carried out utilizing similar principles.

2.4.3 Evaluate market demand and trends:
There is a huge demand in transforming empirical physical content or "dumb" digital content into big data that can be processed by an "Expert AI". Over reliance on a singular AI entity, such as ChatGPT can be unreliable (as far as expertise is concerned) and dangerous (without citing source), not to mention availability in times of political or commercial conflicts.

2.4.4 Unique personal skills and resources:
Both founders embody unique skill sets from envisioning project solutions to complex problem solving to software development and design, especially demonstrated through cross-disciplines problem solving and system designing in the past.

2.4.5 Find your unique value proposition:
EdTech investment and proliferation have lagged behind other technologies, due to the conservative nature of its stakeholders and the non-disruptive nature of schools and education systems. However, with intense competition among other technology sectors, a foothold in EdTech can both be "sticky" and resilient in this ever changing landscape.

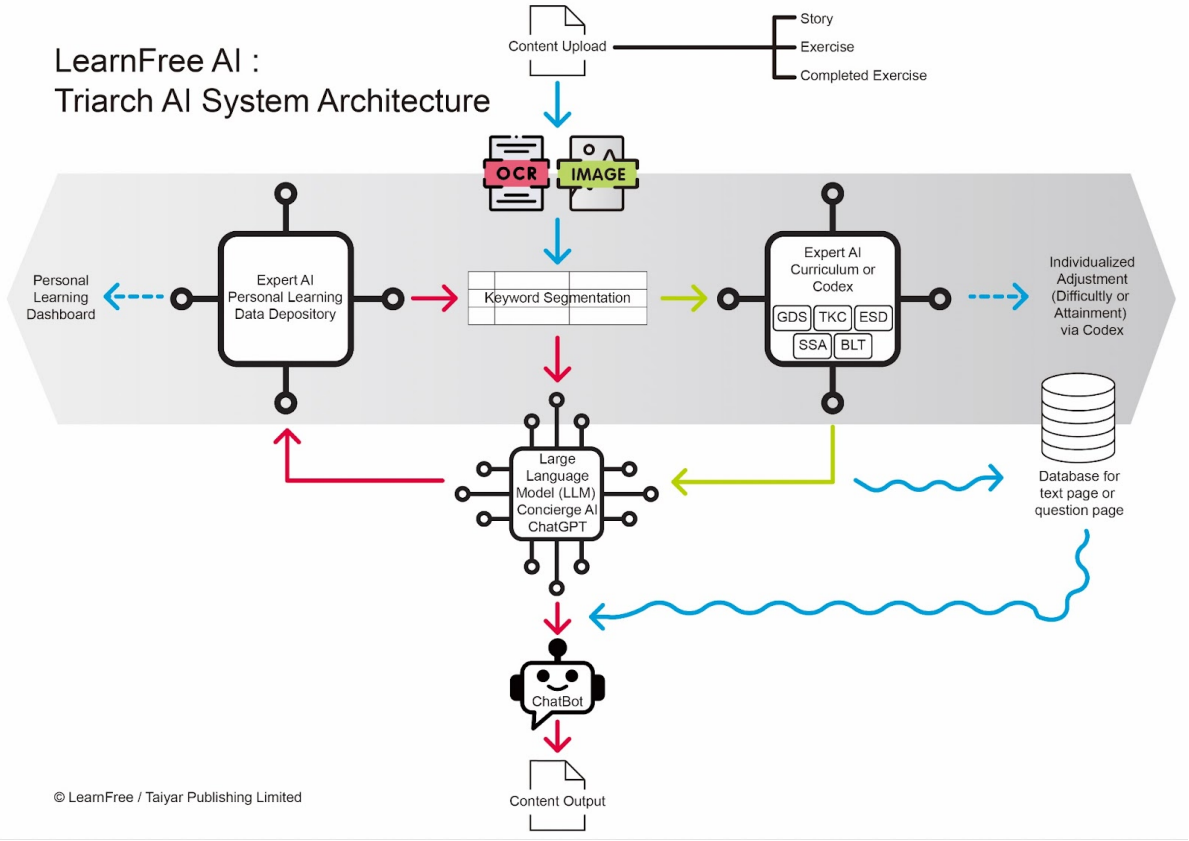
2.4.6 Refining the niche:
Chinese LearnFree provides a testing ground for conjunctive AI deployment as illustrated in the "Triarch AI System Architecture" complementing three branches of concerns: expertise, profiling and large language, as well as transgression between physical content and digital data. Future prospects under this model are abundant in different subjects and disciplines. The need to "Pivot" largely depends on market and capital. In general, education expenditure in any country ranges 5-10% of GDP which is quite significant, especially when society sees the need in developing human capital for national prosperity and national security.

3.0 Research and Development in Innovation and Technology

In general, incubation programs provide support and resources to help startups and entrepreneurs develop ideas and turn them into viable businesses. This section focuses on research development in innovation and technology only.

3.1 Triarch AI System
The proposed system is a combination of self developed, proprietary and off-the-shelf technologies. Developing an appropriate system architecture is already a core innovation of the AI project.

First, the need to interact/incorporate large language AI models with professional / expert AI models is the crux of Taiyar for text analytics and exercise matching. Second, developing a credible database as in "Knowledge Base for Chinese Learning" in order to generate appropriate prompts and analysis for text analytics and exercise matching. Third, based on the same knowledge base to develop a user profiling AI model as in "Selfish AI". When Selfish AI works with LLM and Expert AI, the triarch system together forms the basis for personalized AI model. Fourth, apply appropriate input and output modals that support different usage scenarios.



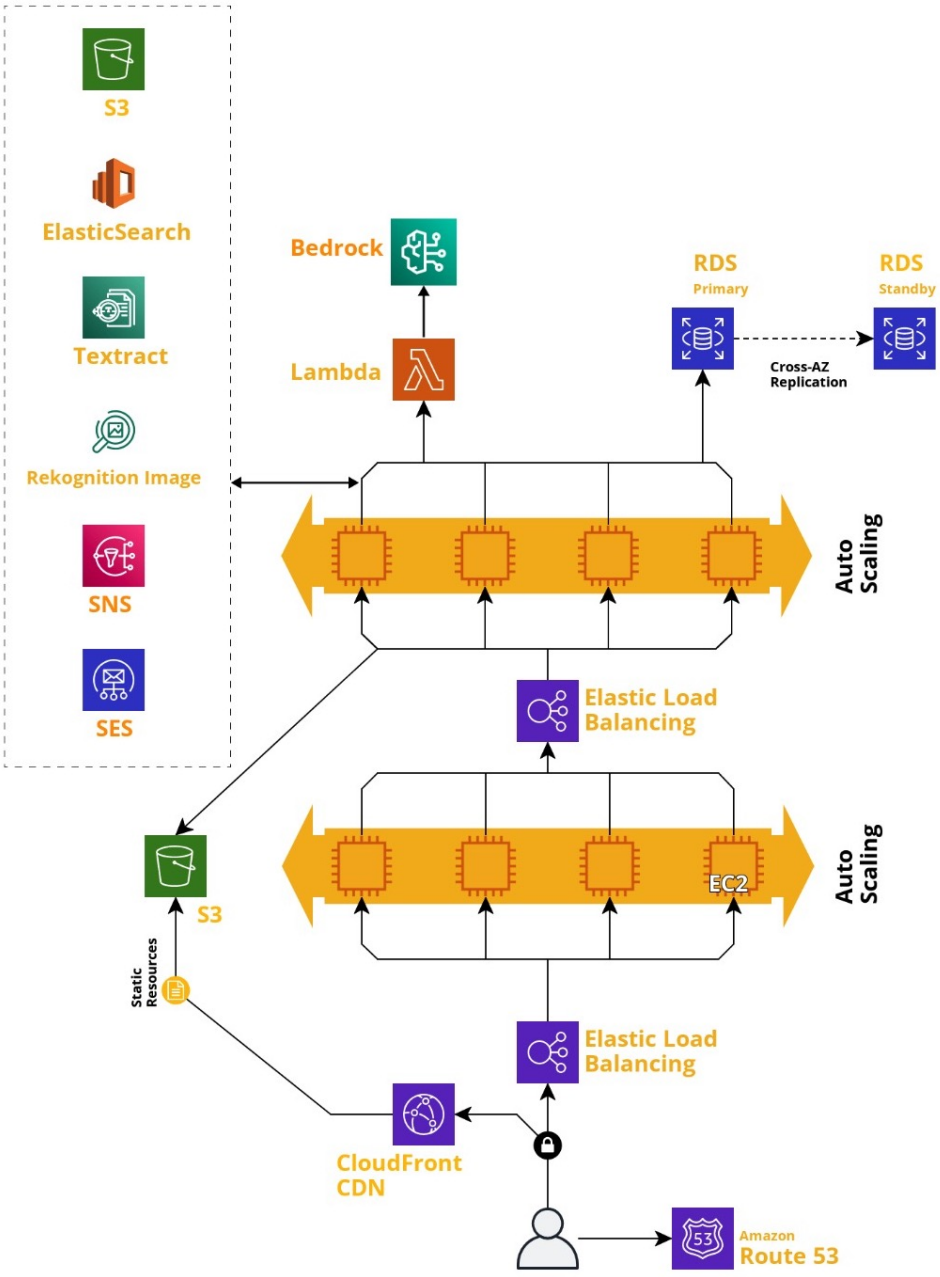
(Figure 2 Triarch AI System Architecture)

3.1.1 Current Status

A mobile application has been developed to process input text and is capable of generating analysis based on the current sample database (Appendix 7: 1-3 Input Text / Current Curriculum / Pairing Exercise; Refer to Demo Video).

3.1.2 AI Incubation Program with Science Park and AWS

A revised system architecture with AWS attributes should Chinese LearnFree be accepted to the AI Incubation Program.



(Figure 3 Revised Triarch AI System)

3.2 Knowledge Base
Taiyar has devised three domain specific database for upcoming content analysis, namely:
-Grammar Domain Structure (GDS)
(Character Difficulty is part of GDS)
-Theme Keyword Concept (TKC)
-Structured Sentences Database (SSD)

The development of a knowledge base is a continuous process of discovery and refinement. Education authorities seldom prescribe learning objectives and particulars for database application.

3.2.1 Codex
A hierarchical tagging protocol, "Codex" is to represent five layers of knowledge classification, namely: Domain, Area, Division, Objectives, Particulars

The benefit to create codex will be recognised as the database grows while processing time squeezes. In short, as knowledge base matures, codex from a book, a page or a sentence will be tagged as an integral part of the metadata.

3.2.2 Grammar Domain Structure
The logic behind TAIYAR grammar database comes from generic linguistic classification of Chinese grammar categorizing into five domains:
-（字）Character
-（詞）Word
-（句）Sentence
-（段）Paragraph
-（篇）Passage

Each known grammatical item is associated with this codex, as continuous refinement such as classics 文言文 will be done on a continuous basis. In short, any grammatical items appeared in the input text will be automatically extracted. To support the automatic identification of grammatical items, we intend to develop an intelligent Chinese language repository as part of GDS knowledge base. It employs theories from linguistics with modern computational models from Natural Language Processing (NLP) and computational linguistics.

The tasks of text segmentation, part of speech (POS) tagging, dependency parsing, and named entity recognition (NER) will be developed for analyzing and understanding the input text. New models combining pre-trained language models and rule-based models are designed to achieve the goal of identification and extraction of grammatical items from the input text. Different grammatical items have different rules and key words. The development of all and part of the knowledge base will become the proprietary IPs for TAIYAR. Managing and protecting these IPs will be one of the key functions (Appendix 8 Codex for GDS).

3.2.3 Level of Difficulty
Several criteria will be considered in identifying the level of difficulty of the input text, including length of text and "level of difficulty" of the grammatical items extracted from the text. The number of characters contained in the text will be compared with the character count knowledge repository. Some examples of the grade, frequency of use and level of difficulty of each character. Different compositions of characters, words, and grammatical items in the text provide evidence for different levels of difficulty of the text. In addition, machine learning models will be developed to enhance the identification quality.

3.2.4 Theme Keyword & Concept
Any input text has to be divided into meaningful units for theme and genre detection and the frequency of which will be measured, before analyzing the theme of the text. The text has to be automatically segmented into meaningful words or phrases with natural language processing before further analyzing its characters, words and sentences. Each segmented word or phrase is categorized and tagged by its part of speech, as the first step of text mining. The frequency of occurrence of each character and word in the input text is analyzed to assess the characteristics, genre and theme of the text. Exercise questions prepared by teachers are also analyzed by this system. Based on analyzing exercises, Chinese text can be matched to the level of difficulty of exercises questions. In addition, machine learning models will be developed to enhance the matching quality.

This platform is expected to exhibit the ability to "learn" as machine learning. Based on analyzing data from records of feedback by different users, the identification models of level of difficulty, theme, and grammatical items will be adjusted automatically.

3.2.5 Current Status
Sample database being deployed. Apart from the stated project aims, it is hoped that a digital depository of Chinese texts can be developed. Statistical data is being collected from this platform, such as number of views, number of users, grades of users, demographics of users, etc., the analysis of text and use of text can be improved. We intend to invite trial users who are teachers and publishers to validate the usefulness.

3.3 User Profiling
Based on the above knowledge base, a matrix of itemized knowledge is built to represent learning attainment. A simplified dashboard representation will enable users to navigate for easy access. This aspect has not been commenced.

3.4 Content Analytics
Based on the above knowledge base, all input texts and exercises are analyzed and retained as content metadata. Correspondingly, content metadata can guide page regeneration according to layout template and question type. This aspect is being tested with one single template with fill-in-the-blank question type.

3.5 Learn Generative Pre-Trained AI
A parallel process is to analyze and record all content in the form of Structured Sentences Database. User interactivity through Chinese Learning Chatbot will be based on millions of Structured Sentences collected and processed during the machine learning process. This aspect has not been commenced.

3.6 Deployment Phases
Chinese LearnFree will be launched in two phases with sub-phases:

(1) Test-Phase One: TAIYAI Text Analytics
Analyzing any Chinese text for use according to K-6 curriculum requirement and;
Recommending matching exercises according to grade level and K6 curriculum requirement.
Demo Prototype: April 2024
Pilot Launch: October 2024

(2) Test-Phase Two: TAIYAR Writing Analytics
Analyzing student input text according to grade level and K-12 curriculum requirement and;
Making grade level compatible recommendations.
Demo Prototype: October 2024
Pilot Launch: January 2025
Local Launch: April 2025

(3) Launch-Phase One: LearnFree (K1 to P6) Kindergarten to Primary
Establishing student Chinese knowledge profile by analyzing student input and;
Generating personalized learning-related prompts for assessment and attainment.
Demo Prototype: October 2024
Pilot Launch: June 2025
Soft Launch: July 2025
Local Launch: Sept 2025

(4) Launch-Phase Two: LearnFree (K1 to P12) Kindergarten to Secondary
Establishing student Chinese knowledge profile by analyzing student input and;
Generating personalized learning-related prompts for assessment and attainment.
Demo Prototype: October 2025
Pilot Launch: June 2026
Soft Launch: July 2026
Local Launch: Sept 2026
International Launch: Nov 2026

4.0 Sales and Marketing

Typologically speaking, "AI as a service" is very similar to "Software as a service" since the products are both digital in nature. However, **Chinese LearnFree** combines the production of physical books and exercises (market by Taiyar) and creates a special hybrid category in product and solution.

4.1 Product history and marketing strategies
Taiyar has been marketing and selling customized exercise books since 2016, but the provision of full text analytics for school-based curriculum will be a new service offering for the education sector. Furthermore, a self contained Chinese Learning Chatbot as **Chinese LearnFree** will be a totally new product / solution from a marketing and sales point of view.

4.1.1 Identifying (or creating) a market through transgression of services
For the purpose of this AI incubation project, **Chinese LearnFree** will be a separate product aiming toward Chinese learning attainment, for the adoption by parents and use by students. Whether teachers or tutors are intermediary will be part of the subject of investigation. Simply put, we shall determine whether LearnFree is B2C or B2C2C in due course.

As a result, sales and marketing includes market research, product development, prototype creation, testing, and refining. This can also involve conducting surveys and interviews to gather customer feedback, analyzing market trends and competition, developing and testing prototypes, and iterating on the product or service based on the findings, as well as applying additional funding for pilot project application.

4.1.2 Marketing goals and objectives
Blue ocean strategy is a business concept and opportunity that encourages companies to seek new market spaces that are uncontested by competition. By segregating existing business models with AI, hopefully new usage scenarios will arise with new customers and users. The strategy for **Chinese LearnFree** emphasizes finding new demand and creating new customer value, rather than simply competing for existing customers in saturated markets.

4.1.3 Creating awareness and attractions
Throughout previous sections, innovation and creativity lie only in technologies over known behavior and product offering. **Chinese LearnFree** (can also be the Uber in tutoring) will develop a protocol that also monitors tutors for time and money well spent against student self learning, so that parent-customers see a need for higher level supervision. How can we create awareness and attractions for services that never existed before.

4.1.4 Converting and retaining customer
One of the advantages Taiyar and **Chinese LearnFree** have is the service relationship with existing schools. As demonstrated during Book Fair 2023, parents went all the way that might benefit their children academically. Without a doubt, school adoption will drive parent-customer adoption.

4.1.5 Marketing methods and budget
While it is still early to determine execution plan and measurements and KPIs, having knowhow in e-marketing will be critical for products that sell and work online. More advanced tools such as personalized marketing using AI will also be considered.

4.1.6 Competitive Analysis
We have not conducted extensive competitive analysis as we have not seen similar offerings for Chinese or any other subjects.

4.2 Customers and Users
Target customers for **Chinese LearnFree** will be concerned and motivated parents, and users are studious students, learners of a curriculum bounded Chinese subject.

4.2.1 Market Size
There are about 300,000 and 250,000 primary and secondary students in Hong Kong, and about 30,000 to 40,000 children attending kindergartens. All of them require Chinese education, and a prompt to excel or attain some Chinese proficiency. Among the named students, about 2-5% are non-native speakers, and this trend is still growing as the influx from the mainland increases.

4.2.2 Parent-Customer Profiling
According to the strategy laid down by MOCK100, about 25% of the mean population can be moving up one quartile as a result of the **Chinese LearnFree** protocol. These parent-customers are likely to be middle class and willing to spend resources to help their children excel. As we observe spending habits over middle class parents in clothings, games, travels, and tutorial support, having extra means at the starting line or an angle (or tips) during testing times are all well and reasonable.

4.2.3 Target Adoption 2024-202

Chinese LearnFree, Target Adoption 2024-2028

Hong Kong Student Projection / Chinese LearnFree Pick-up Rate	2024	2025	2026	2027	2028
Kindergarten					
K1-K3	Pilot	5.00%	7.50%	10.00%	10.00%
40000	1000	2000	3000	4000	4000
Primary School					
P1-P3	Pilot	3.33%	10.00%	20.00%	25.00%
150000	1000	5000	15000	30000	37500
P4-P6	Pilot	3.33%	10.00%	20.00%	25.00%
150000	1000	5000	15000	30000	37500
Secondary School					
S1-S3		Pilot	10.00%	20.00%	25.00%
130000		500	13000	26000	32500
S4-S6		Pilot	10.00%	30.00%	30.00%
120000		500	12000	36000	36000
Total Students per year	3000	12500	46000	90000	111500

If the association with Science Park is conducive to marketing to local schools and parents, the above projection offers a snapshot to a new Chinese learning chatbot to the Hong Kong education market.

4.3 Project Phasing

4.3.1 Pilot Phase

Pilot schools are schools that apply **Chinese LearnFree** with full or partial funding from HKG or HKJC Charities under the education technology funding categories. Currently, we have targeted 1000 students from kindergartens, 2000 students from primary schools and 1000 students from secondary schools, adopting between 2024 and 2025. No consideration is given to parent-customers who may have subscribed to Chinese LearnFree during the same through the marketing of Taiyar Text Analytics.

4.3.2 Testing Phase

Between 2025 and 2026, 58,500 student-users are projected for adoption.

4.3.3 Launch Phase

Between 2027 and 2028, an average of 100,000 student-users is being projected for adoption.

4.4 Projected Spending
Normally parents spend $2000-$4000 per year on textbooks and exercises and storybooks. It is also common for middle class parents to engage private tutors to support their children on a weekly basis, at about $6000-$12000 per year. When **Chinese LearnFree** proves to be effective for users and customers, it is reasonable to expect a subscription rate at $1200 per year per user

4.4.1 Current Status
Although **Chinese LearnFree** is not yet available in Hong Kong, the latest deployment or FlowGPT at HK$148 per month still attracts a sizable user/customer. In addition, Taiyar's customized exercise books are sought after by certain parents/customers, as demonstrated during Hong Kong Book Fair 2023 and their average spending was about $368 per transaction.

4.4.2 Target Pricing and Revenues
List price at $1200 and discounted at $120 is being considered for the initial Testing and Launch phases. The consideration of 90% discount is in line with mainland subscription practices.

Target Revenues
2024 $1,800,000 @$600/user subscriber
2025 $1,500,000 @$120/user subscriber
2026 $5,520,000 @$120/user subscriber
2027 $27,000,000 @$300/user subscriber
2028 $66,900,000 @$600/user subscriber

4.4 Target Marketing Schedule
Education products and services are time sensitive, and they are largely affected by the school calendar and examination schedule. As a result, "Chinese LearnFree" is targeted to reach the Hong Kong school market as early as October 2024, although a working prototype will not be available by June 2025. A tentative schedule is as follows:

Demo Prototype	October 2024 (K1-P6)
	October 2025 (K1-S6)
Pilot Launch	June 2025 (K1-P6)
	June 2026 (K1-S6)
Soft Launch	July 2025 (K1-P6)
	July 2026 (K1-S6)
Local Launch	September 2025 (K1-P6)
	September 2026 (K1-S6)
International Launch	November 2026 (K1-S6

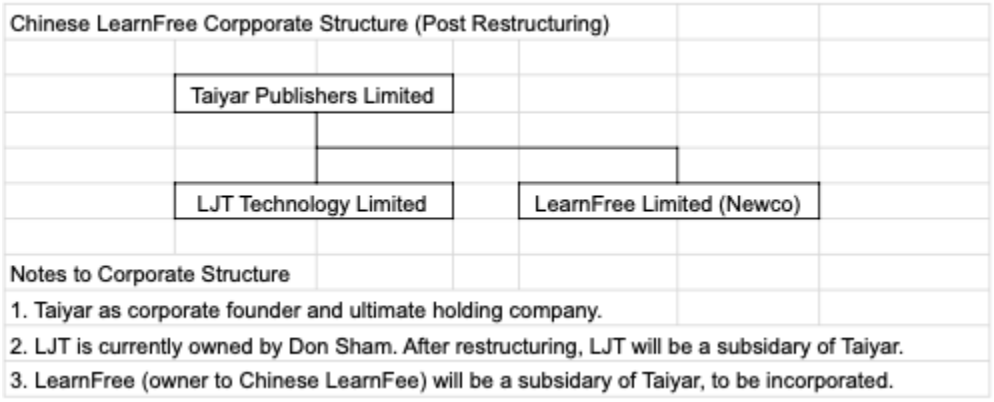
5.0 Corporate Information and Core Team Members

5.1 Corporate Information
For the purpose of this AI incubation application, the registrant shall be LearnFree Limited (a company to be incorporated in Hong Kong with limited liability). In view of the application requirements stipulating an applicant with less than five years of incorporation, LJT Technology Limited shall act as the applicant and is deemed to be a wholly owned subsidiary of Taiyar Publishers Limited.

5.1.1 Taiyar Publishers Limited
(For items a, b, c, d, g, j, please refer to Appendix 9A)

5.1.2 LJT Technology Limited
(For items a, b, c, d, g, j, please refer to Appendix 9B)

5.1.3 Corporate Structure

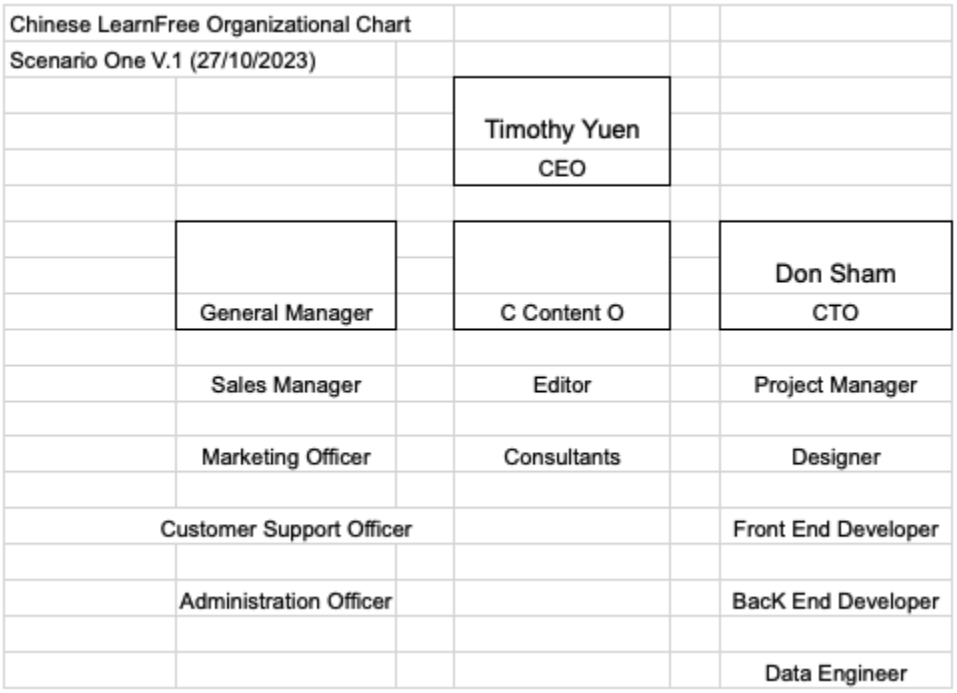


5.2 Manpower Plan

5.2.1 Founder & CEO
Yuen Tai Yan Timothy (HKID D202843)
(For items h, i, please refer to Appendix 10)

5.2.2 Co-founder & CTO
Sham Kwok Tung Don (HKID)
(For items h, i, please refer to Appendix 11)

5.2.3 Organizational Chart (Scenario One V.1 27/10/2023)



6.0 Finance

6.1 Sales Forecast

6.1.1 Related Party Subscription

Sep-Dec 2024 $600,000 subscription income from Taiyar users.

6.1.2 Pilot Project

Sep-Dec 2024 $1,800,000 subscription from participating pilot schools.
Sep-Dec 2025 $600,000 subscription from participating pilot schools.

6.1.3 Open Market Subscription

Sep-Dec 2025 $1,500,000 subscription from viral users.
Sep-Dec 2026 $5,520,000 subscription from viral users.

6.2 Cash Flow Projections 2024-2026 (Appendix 12)

Chinese LearnFree, Quarterly Cashflow Projection (2024-2026)														
Scenario One V.1 (27/10/23)			Jan-Mar 2024	Apr-Jun 2024	Jul-Aug 2024	Sep-Dec 2024	Jan-Mar 2025	Apr-Jun 2025	Jul-Aug 2025	Sep-Dec 2025	Jan-Mar 2026	Apr-Jun 2026	Jul-Aug 2026	Sep-Dec 2026
Income														
Sales						$600,000.00				$1,500,000.00				$5,520,000.00
Direct Funding Support			$107,500.00	$107,500.00	$107,500.00	$107,500.00	$107,500.00	$107,500.00	$107,500.00	$107,500.00	$107,500.00	$107,500.00	$107,500.00	$107,500.00
Pilot Program						$1,800,000.00				$600,000.00				
Sub-total Income			$107,500.00	$107,500.00	$107,500.00	$2,507,500.00	$107,500.00	$107,500.00	$107,500.00	$2,207,500.00	$107,500.00	$107,500.00	$107,500.00	$5,627,500.00
Expenses														
Administration / Accounting			$15,000.00	$15,000.00	$15,000.00	$60,000.00	$60,000.00	$60,000.00	$60,000.00	$60,000.00	$60,000.00	$60,000.00	$60,000.00	$60,000.00
Cloud Services			$6,000.00	$6,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00
Equipment			$20,000.00	$20,000.00	$20,000.00									
Marketing					$200,000.00	$200,000.00	$200,000.00	$200,000.00	$500,000.00	$500,000.00	$500,000.00	$500,000.00	$500,000.00	$500,000.00
Rent	$12,500.00	3	$37,500.00	$37,500.00	$37,500.00	$37,500.00	$37,500.00	$37,500.00	$37,500.00	$37,500.00	$37,500.00	$37,500.00	$37,500.00	$37,500.00
Salary														
Project Directors (PT)	$15,000.00	3	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00
Project Manager	$32,000.00	3		$96,000.00	$96,000.00	$96,000.00	$96,000.00	$96,000.00	$96,000.00	$96,000.00	$96,000.00			
Designer	$28,000.00	3		$84,000.00	$84,000.00	$84,000.00	$84,000.00	$84,000.00	$84,000.00	$84,000.00	$84,000.00			
Front End Developer	$25,000.00	3		$75,000.00	$75,000.00	$75,000.00	$75,000.00	$75,000.00	$75,000.00	$75,000.00	$75,000.00			
Back End Developer	$25,000.00	3		$75,000.00	$75,000.00	$75,000.00	$75,000.00	$75,000.00	$75,000.00	$75,000.00	$75,000.00	$75,000.00	$75,000.00	$75,000.00
Data	$30,000.00	3		$90,000.00	$90,000.00	$90,000.00	$90,000.00	$90,000.00	$90,000.00	$90,000.00	$90,000.00	$75,000.00	$75,000.00	$75,000.00
Consultants			$60,000.00	$60,000.00	$60,000.00	$60,000.00	$30,000.00	$30,000.00	$30,000.00	$30,000.00	$0.00	$0.00	$0.00	$0.00
Sales Commission										$300,000.00				$1,104,000.00
Transportation			$3,000.00	$4,500.00	$4,500.00	$4,500.00	$6,000.00	$6,000.00	$6,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00
Misc			$6,000.00	$6,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00
Sub-total Expenses			$192,500.00	$614,000.00	$823,000.00	$848,000.00	$819,500.00	$819,500.00	$1,119,500.00	$1,425,500.00	$1,095,500.00	$825,500.00	$825,500.00	$1,929,500.00
Quarterly Cashflow			-$85,000.00	-$506,500.00	-$715,500.00	$1,659,500.00	-$712,000.00	-$712,000.00	-$1,012,000.00	$782,000.00	-$988,000.00	-$718,000.00	-$718,000.00	$3,698,000.00
Cumulative Cashflow			-$85,000.00	-$591,500.00	-$1,222,000.00	$944,000.00	$947,500.00	-$1,424,000.00	-$1,724,000.00	-$230,000.00	-$206,000.00	-$1,706,000.00	-$1,436,000.00	$2,980,000.00
Notes to Income Projections														
Sep-Dec 2024 $600,000 from Taiyar for 5000 users @$120/user														
Sep-Dec 2024 $1,800,000 from participating pilot schools for 3000 users @$600/user														
Sep-Dec 2025 $1,500,000 from viral subscribers (including Taiyar) for 12500 users @$120/user														
Sep-Dec 2025 $600,000 from participating pilot schools for 5000 users @$120/user														
Sep-Dec 2026 $5,520,000 from viral subscribers (including Taiyar) for 46000 users @$120/user														
2024-2026 cash subsidies from Science Park $1,290,000														
2024-2026 indirect subsidies from AWS not included														

6.3 Fundraising

6.3.1 Debt Financing

The ultimate holding company shall take in consideration a cash deficit of $1,750,000 and arrange SME financing if feasible.

6.3.2 Seed Capital

Alternatively, the board may deem a seed round of financing feasible if the valuation of the applicant exceeded US$10 Million during 2025 and 2026.

7.0 Incubation Programme Added Value

7.1 Data center and web hosting

7.2 Hire student through HKSTP internship program

7.3 Public relations

7.4 EdTech specialized events and organize Pilot School Programs

7.5 EdTech research and development partnership

7.6 Liaison with mainland and overseas counterparties