Project Status Report

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1 Project Description

Laser Mate! is a self-defined software engineering project that has the potential to reach an approximately £2.5 billion annual profit. The goal of the software is to provide a mobile web platform to enable sit-in restaurant customers order and pay for their meals online.

The continuous business closure due to the current covid-19 pandemic resulted in a sharp financial loss for many restaurant owners. To rebound from this year-long recession, owners must adapt and implement innovative ways to survive and recover from these circumstances. This dissertation work aims to provide a cost-effective software platform that promises an approximate 50% reduction in waitering expenditure, helping all restaurant businesses get through this difficult economic crisis and skyrocket from previous business performance.

The issue with traditional restaurant food ordering is the cost implications, in particular, an average waitering cost of £37,000. According to PayScale [1], the current waitering staff cost in the UK is £6.95 per hour and the average number of waiters in a restaurant is 2.6 people [2]. A typical restaurant also requires waitering staff for 6 hours each opening day, from 12pm-2pm and 5pm-9pm. Assuming hypothetically that a restaurant opens for 340 days a year, the subsequent average waitering staff cost is 2.6 people x 6 hours x £6.95 per hour x 340 days = £37,000.

The sit-in mobile ordering platform reduces waitering costs by approximately 50% as it redirects the meal ordering and payment process to the customers, reducing staff cost by £18,500. To operate a restaurant business, owners must recruit waitering staff to take customers to the table and to record and deliver meal orders to the kitchen. Other tasks of a restaurant waiter include to deliver and collect meals and to give and take payment. Restaurant owner would no longer require to record and deliver meal orders to the kitchen, as well as that to give and take payment, saving approximately 50% of the aforementioned £37,000 staff cost, at £18,500. This cost saving outcome is particularly crucial in light of the covid-19 pandemic, in which restaurant owners would hope for a significant profit boost to recover from previous losses due to restaurant closure.

The revenue-cost analysis indicates that each restaurant account signup would attract an estimated £5,500 profit each year. The digital transaction cost in mobile web application is 1% lower than that in bank card (0.39% + 2p vs. 1.75% per transaction), allowing us to have an additional 1% profit. Coupling this 1% fee difference with 20% of the £16,800 staff-saving cost as discussed above, we would roughly generate £7,000 per year per restaurant. Consequently, this would result in a £5,500 profit after tax and costs deductions. In

terms of the annual profit analysis, Statista indicates that the E.U. [1] and the U.S. [2] combined will have approximately 1.5 million restaurants. This means that we will hit £2.5 billion at 30% market penetration (30% x 1.5m x £5,500).

2 Progress Report

- Completed: project proposal, final software product demo, user stories, MOSCOW, software paper prototype, software design section, related software products, database organisation, evaluation
- Ongoing: software coding, testing, dissertation

3 Project Planning

- Project Proposal: describe project work, unique selling point, revenue-cost analysis, annual profit, start-up cost, and literature review
- Final Software Product: showcase the platform design and descriptions for the restaurant customer platform, restaurant owner platform, company staff platform, and company CEO platform
- Software Requirements Statements: user stories and MOSCOW
- Software Design: paper prototype, justifications of design options, demonstrating related software products, relational database organisation
- Evaluation: paper prototype, testing documentation, final software product, future work

4 Problems and Risks

- Establishing legal and accountancy terms. Mitigation: recruit a legal and accountancy advisor pre-launch.
- Software security. Mitigation: crowd source a security company pre-launch.
- Integrity for payment portal. Ensure that the payment company is registered under the Financial Conduct Authority (FCA).

5 Ethics

- Write ethical consent form in evaluation.
- Consider ethical designs by establishing terms and conditions, legal policies, and staff health and safety.
- Deploying adequate software security measures for payment portal and hackers.
- Consider informed payment processing through system notifications.