

Internship Reflection: The Making of Pawncore

For my internship, I participated in the Phoenix Flight Entrepreneurial Internship offered by Florida Poly. This program is centered around learning LEAN startup, agile project management, and professional skills while pursuing a Minimum Viable Product. For this program, my team and I coined the idea to develop a Pawn Management and Point of Sales System (Pawn POS). My team members consisted of Computer Scientist, Atef Alhassan, and Business Analyst, Maverick Hope. Going into this internship, I had hoped to accomplish three learning goals:

- *To understand on a high-level lean startup and agile project management.*
- *To understand and be capable of taking a software idea to a marketable software product.*
- *To understand and practice professional skills needed to build a career as an entrepreneur.*

The idea to create a Pawn POS comes from my personal experience working as a Pawn Broker utilizing several Pawn POS software systems. After using such systems for an extensive period, I felt I could create a superior product which would increase a company's profits through increasing efficiency of their process flows. Due to my prior experience, I took the position of leader for my team. Our goal for the entirety of the program was to develop a company with a minimum viable product and learn how to take such a product from idea to a reality. Starting with nothing, my team and I researched the market size, competitors, and target consumers for pawn point of sales systems. We determined that there was a reasonable market for such a software granted we had features and pricing compared to those of our competitors. From this point, we started to plan out our software from head-to-toe. For this software, we developed

formal documentation in the form of a Software Requirements Specification and High-Level Architecture Specification both of which were learned in my Software Engineering course the previous year. In addition to the specifications, a user flow diagram, basic wireframe, and database diagram were developed. In our planning, it was determined that our software would utilize a Client-Server integration with the client web server supplying the user interface and a web server application programming interface (API) which would interact with our database. The client web server and the web API directly interface with one another to control the handling of data. This architecture also utilized several libraries and software such as NextJS, React, Strapi CMS, NodeJS, and MariaDB, a fork of MySQL. Following our planning, development set in. Development took up most of the time spent in the program. Prior to the program, I had experienced working with Strapi CMS and NextJS through previous personal projects. However, when developing the Pawn POS, I encountered several new things and challenged myself to accomplish things I had never tried. My team and I underestimated the actual scale of the software, and that was especially apparent on our sprint planning. Prior to working on a sprint (two weeks of assigned work), we would estimate time allocation for each task. On almost every sprint we were behind on where we expected to be. Each sprint fell short because we didn't understand the sheer amount of code that was needed for our seemingly simple functions to work. As we ended of the internship program, my team and I did not have a minimum viable product. We were able to utilize Strapi CMS to develop our database and sample backend API. In addition to the backend, the frontend had many components developed to be used, but not every UI page was designed and developed. As per integrating the backend with the frontend, the frontend had successful integration on only one of the pages. Unfortunately, we were unable to complete our product, but we were able to experience the sheer amount of work that goes into

designing and developing such a software. Since the internship is finished, my team is still up in the air as to whether we would like to continue our progress on the software, because after our market research on the competitors, we realized the amount of time and energy needed to develop a system that would even compare to the systems who are already established. In addition to this, it is unlikely that a customer would switch from their current system which stores all their data to a new system for only an increase in efficiency. If my team and I were to develop more effective value propositions, it may be worth exploring the completion of this project. Despite of falling short on completing a minimum viable product, this internship experience enabled me to achieve and exceed my learning objectives.

For my first learning objective of learning lean startup and agile project management, I continuously learned and practiced this throughout the entire program. Focusing on the lean startup, before development of our application, we explored our market size, identified a need for our product, and identified and investigated our main market competitors. We were able to achieve this through developing a customer portfolio with an estimation of our average consumer, created value propositions in which our software solves a problem our target consumers are facing, and exploring who our consumers are already using. For our specific product, we were able to identify several other systems, but most were out of date, hard to use, or didn't have a lot of functionality. To switch focus on the agile project management, I was able to gain a load of experience by assuming the leadership role. On each sprint, we would assign tasks that needed to be done and allocate a time estimation for each task to ensure we would be on pace. As a leader, I would also organize team meetings and divide the work amongst ourselves to fit everyone's learning objectives and prime expertise. A big learning experience to come from the agile workflow was the difficulty of time allocation. It seemed that nearly every week we

would underestimate the amount of time to complete each task, which led to us becoming severely behind schedule and unable to complete an MVP. As a takeaway from this learning objective, I learned that time allocations can be difficult and its often better to over allocate than under. Also, prior to in depth planning of a product, its very important to do market research and identify a need.

To move on to the second objective, I had wished to be capable of taking a software idea and turning it into a marketable product. Although I was never able to complete my product, I feel as though I have learned from start to finish taking a software idea to a product. Previously in my software engineering course, I had taken an idea and turned it into a complete shippable product, but I never explored the marketing side of things. This internship experience enabled me to take my large, real-world idea and plan it, develop it, and begin to market it. Even though our product was not complete, we identified the market and target consumer for our product. To further our marketing, we built a mock website sales funnel to market and determine interest in our application. Our next step if we would have had more time would to have been advertising our application. In addition to designing our software, we built the business around it. We gained experience in coming up with a name, designing logos, and creating a design guide for our entire company.

Ending with our last objective, this internship enabled me to practice professional level procedures and formatting so that I could build a successful career as an entrepreneur. Throughout this internship, I stressed my professionalism in creating formal specifications, in communicating effectively with my team, and through taking a leadership role in my mock company. By taking a leadership position, I was able to initiate professional communication, and experience preparing, running, and executing meetings with my team members. In addition, I

was able to practice taking an idea and forming a business around it just as a true entrepreneur does.

I felt this internship experience was extremely beneficial for myself in creating everlasting experiences in entrepreneurship. By the end of the program, I can say I completed all my planned learning objectives with no issues. Even though my team was unable to successfully develop a minimum viable product, we determined a need for our product, designed our product, and built a business around such product. We began the program with learning and practicing lean startup while planning an agile project development. Throughout the program I took an idea I had and designed it into a marketable software product while practicing my professional skills in a leadership position. Thus, furthering my ability to perform a career as an entrepreneur. Overall, this internship experience has increased my ability to perform in a professional environment and has utilized my course material in a professional, real-world example.