A.O.K. Laptop System Overhaul

Course Project: IS 436 Structured Systems Analysis and Design

Deliverable 1 – “System Request” (D1)

10/03/2019

Team Name: Meticulous Evolution Consulting

Project Sponsor: Library Services Manager, Paula Langley.

Presented By:

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# Team Introduction

### Upen Adhikari - Quality Assurance

I’m Upen, I’m currently pursuing a Bachelor of Science in Information Systems at the University of Maryland, Baltimore County. I have worked in a couple of course projects during the semesters here at UMBC. I have played several roles while working on different course projects as a developer, project manager, system analyst, and a tester. For this specific project, I am responsible for performing various tests to ensure the software created by developers is the best fit for the purpose. In addition, I am closely working with my team members to ensure the quality of software development and deployment.

### Omar Al-Hedari - Project Manager

I’m a current student at the University of Maryland, Baltimore County studying Information Systems for my Bachelors. In the previous semesters for group projects, I’ve taken care of planning and guiding towards the end goal. This attention towards the bigger picture in tandem to the smaller details has resulted in full marks for each project. I plan on applying my previous management experience to maintain the flow of operations/tasks.

Just like I have done in my previous semester-long projects, as the project manager for this semester maintaining the focus needed to achieve the goal for the semester by constant follow up with group members on what is needed to be done for each phase of the project.

### Nima Roomi - Lead Developer/Programmer

Hi, I’m Nima a Senior at the University of Maryland, Baltimore County majoring in Information Systems. I have experience programming from classes and from personal projects. I am competent and experienced in web stack technologies and languages. My focus is currently on front-end web development with React, but I am competent in back-end, specifically Node.js and PHP.

### Alex Varghese - Database Administrator

I am Alex and I am studying at UMBC for a bachelors in Information Systems. My experience in programming and IT comes from multiple information systems and computer science classes. I have experience in programming languages such as C++, Java, and Python. I am also experienced in creating databases using sql developer and have some experience with NoSQL with MongoDB.

# System Introduction

## Existing System

The laptop loan program is a new system for the A.O.K. library. The system aims to provide technology access to students, who either temporarily or permanently don't have access. The laptops are provided for short term loans (4 hours) and long term loans (3 days). UMBC students have varying needs when they use the system. Some students need laptops for an online in-class exam. Some students need specialized software UMBC licenses on school laptops. Some students need a temporary laptop since theirs broke and needs repairs. This system was introduced as part of UMBC’s focus to provide fair and equal access to all at need students. Many students depend on this program and for the program to be swift and reliable.

## 

## Existing Issues and Proposed Solutions

The laptop loan program is facing issuing regarding efficiency and reliability. Laptop loaning procedure/policy is inefficient which results in laptops being unused. Laptops can be loaned from the Circulation Desk at the A.O.K. library but patrons usually come in bursts of high demand rather than equally spaced. The circulation department added an online queue to alleviate these issues. However, the website is extremely confusing to use and unresponsive to changes. The patron is only given limited information such as, when the request was placed, and when it is time to pick up. The patron cannot check their position nor remove themselves from the list, without manually calling. The laptop loan program has been a huge hassle for the department. A laptop checked out is expected to be returned in equal or similar condition. Nevertheless, laptops are frequently returned damaged. The software used to check out and return books is called ALEPH. ALEPH is an integrated library system for the management, loaning, and automation of library services. Unsurprisingly, this system was not designed or intended to be used for anything other than books and DVDs. So, currently, the library has no proper way to log damages, repairs, and changes for the laptop inventory. The current procedure is to fill out a repair request using a paper sheet, writing down any damages. This system is ineffective since patrons have complained that “they did not damage the laptop” and the library has no photos or concrete evidence to back up any claim. With our proposed system we will implement additional software to interface with ALEPH to provide proper logging, queueing, and loaning support. This software will be intuitive so it is easy to use for patron and will also reduce departmental strain. It will also increase patron accountability and will reduce laptop repair and maintenance costs.

# System Request - A.O.K. Laptop Overhaul System

## A.) Project Sponsor:

Our sponsor is Library Services Manager, Paula Langley she provided us with appropriate information for analysis and subsequently this request. We approached her with the intent of improving efficiency within the library’s circulation department. We discussed several aspects, roles, and processes of the circulation department. As we discussed potential areas of improvement the focus gradually shifted towards the patron side. The manager taught us about the relatively new laptop loan program. The program had undergone many iterations, due to some persistent issues. We decided to analyze the existing and previous system’s issues and address them. The manager will be our sponsor providing us with access to appropriate resources such as system access, specialized and knowledgeable personnel, and an appropriate budget.

## B.) Business Need:

The new system offers effective and efficient customer service, reduces the workload of the employees, improves tracking, increases employee morale, and provides detailed information about the business transaction. Our proposed system will provide proper logging, queueing, and loaning support. Additionally, the mandatory photo attachment feature of the new system will help reduce the damage repair costs and maintenance cost of the laptops. The built-in tracking system will provide live status updates and accurate information to users which will help to resolve issues for both the patron and the library. These changes will booster UMBC’s stance on inclusivity by diligently providing technology access to students who need it. This program will greatly improve UMBC’s goodwill/reputation.

## C.) Business Requirement:

The Albin O. Kuhn Library has a fairly small budget. They need these changes in order to reduce their long term costs. Similarly, since the budget is tight, the solution must be economical and appropriate to implement. The library is host to several legacy systems, such as ALPEH. The new system must integrate when needed to legacy systems and ensure compatibility. New systems must have minimal costs with respect to hardware. The library’s IT department is understaffed and overworked, so new hardware must be easy to manage. Hardware must be approved by Sheffield, Carolyn Associate Director, Library Technology & Digital Strategies to ensure proper resource allocation and training.

## D.) Business Value/Feasibility Analysis:

### Technical Feasibility:

There are some risks that could occur when implementing this system, such as user familiarity with the technology. For example, because ALEPH does not store pictures, we would have to implement an additional system to be able to store the pictures of laptops to check for damages. This change can cause confusion with the library employees, but we can fix this issue by requiring a seminar for all employees to familiarize the workers with the new system. Project size: The development team for the app will consist of 4 people and the mobile app will take 6 months to develop.

### Economic Feasibility/Cost-Benefit analysis:

Tangible:

This system is economically feasible because UMBC is not looking to turn a profit with this service. Loaning laptops to UMBC students is a student service that helps those students who don’t have the necessary funds to purchase their own laptops. One economic benefit that the new laptop loan program offers is that it reduces the work necessary work of the administrative and technical staff and will reduce operational costs. Another economic benefit is that with the mobile application, we will be able to track the damages of the laptop with pictures and we will be able to charge the appropriate students who damaged the laptop. With the proposed system we believe that we would be able to cut down some of the miscellaneous expenses such as printing cost, staple, paper and the storing cost for paper file storage and documents.

Intangible:

The intangible benefits relates to subjective values so we believe that the implementation of the proposed system will help to provide effective and efficient customer service by avoiding Operational inefficiencies.It will also helps to boost employee morale and increase the Goodwill of the library and of course the goodwill of the UMBC’s as well. Not only this, the new system will be environmentally friendly because less consumption of paper will contribute to the environment.

### Cost-benefit analysis:

Fig 1.1

|  |  |  |
| --- | --- | --- |
| S.NO. | Benefits | costs |
| 1 | Reduced damage costs | $7500/year |
| 2 | Total | $7500/year |
| 3. | Development costs |  |
| 4. | Mobile app development (android) | $33000 |
| 6. | Mobile app maintenance | $6600 |
|  | Total | $39600 |

### Organizational Feasibility:

* The library manager approves the project.
* Umbc’s library has enough space to accommodate hardware devices so it may not change the organizational structure.
* The system will be running in the same existing hardware.
* The new system is much easier to handle and operate because the system will be user-friendly and existing library workers will not have a hard time to learn about the new system
* We talked with few employees of the library and they are excited to implement the new system as they responded that this system would save a lot of time and energy.
* It may reduce workforce.

Aware of the capacity of the library in where to have the devices that the library has to provide

## E.) Special issues or Constraints:

## F.) Project methodology option:

We have chosen **Agile methodology** to design and implement our project because Agile methodology will always gives an opportunity to learn with each iteration and also will be the best fit if we had to address the changing requirements. It allows us to work through prototype and improve it with every cycle following the specific guidelines from the stakeholders during the development phase. We learnt from the class that Agile is flexible and it will also increases the productivity of our team. As our development begins we can get rapid feedback from each version and move forward by implementing it. As we have clearly listed the business need and requirement for our project, we can prioritize the features to be implemented and work in general to deliver the project on time.

**Detailed project work Plan with estimation dates:**

***Schedule***

**Figure 1.2 Detailed project work Plan**

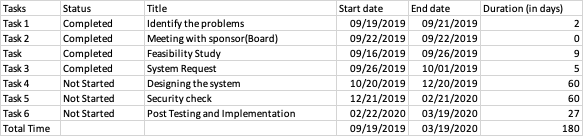


Fig. 1.3. Work Plan

