

1. Section 1:

a. Team members

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b. One paragraph each about the economic, technical, and organizational feasibility of the project

The new information system that will be applied to the South Liberty Public Library needs substantial funds in development cost at the beginning and yearly moderate funds in maintenance work. The current funding mainly comes from local government and some philanthropies. To cover the cost, the Public Library needs to implement new ways to raise funds, such as applying new project to government, asking funds for loyal patrons from library, holding fundraising events to philanthropies. Although the system will not bring huge tangible profits to the library, it will bring significant intangible benefits to library. It will bring patrons a more comfortable service experience and increase their satisfaction. The librarians will experience reduced workloads and decreased mistakes in work. The intangible benefits might also convert to tangible in some situations. For example, the high customer satisfaction might bring more donations to the library.

The new system will be a strong fit with South Liberty Library's business mission and organizational values. This is true because the primary objective is simply to automate the current materials process. We estimate that South Liberty's staff will already have the skills to work effectively with the new system. The logic of the process will not be changing so experienced librarians should have no problem understanding how/what the new system does. Government or Political assessment of the new circulation system will likely be positive and beneficial for the library. Bringing the SLPL into the 21st century should garner public support.

We estimate there will be a minimal technology skills gap amongst the staff. Utilizing web processing software and data organization software such as Excel is the norm in nearly all US households. Since the software we will implement is not advanced South Liberty's staff should have no problem adapting to it. Also, Resources if not currently available will be easily attainable. The Library will need to make arrangements with a local utility carrier to arrange for broadband internet service. This will be routine and inexpensive. The library will need to acquire 3 new basic desktop computers for staff to use and to serve the main search resource for patrons. The library will need to procure these through donation or purchasing them. A possibility exists to reuse second hand or donated computers as search terminals because the search process requires minimal computing power. There will be no

competition for internal technology resources. Furthermore, we will use cloud based server ,Windows Azure, to store our database and Windows Azure will help us maintain the database by doing updating the system, fixing bugs and adding more functions or features for the system application. Thus, it is not necessary to train the librarians as developer, which can save a lot of time to keep the experienced librarians to serve the patrons.

c. Inception Deck

i. Vision South Liberty Library's new information system will provide seamless, automated experiences for its patrons from book searching, check-out and returns, and maximize our patrons' reading experiences. Automating the current system will also make the process more efficient and less labor intensive for South Liberty's librarians.

ii. Elevator Pitch: This project will automate many of the tedious steps previously performed manually by librarians. This system will automate book searches, check-out, and return processes in addition to tracking and charging late fees to past due rentals. Implementation of this project will increase librarian and volunteer productivity by simplifying procedures and saving time, which ultimately saves the South Liberty Library money and will enable it to provide better services for its patrons.

iii. Product box

South Liberty Public Library Automated Materials Circulation System



* FAST!

* RELIABLE!

* EFFICIENT!

HAPPY PATRONS – HAPPY LIBRARIANS

iv. Not List (Project scope)

SCOPE

PROJECT OBJECTIVE

To construct a new electronic inventory system of library materials, both circulating and non-circulating for the South Liberty Public Library. The project will be completed within three months.

DELIVERABLES

- An electronic inventory system to manage both circulating and non-circulating materials.
- The system will allow for the creation of digital patron accounts.
- The system will allow librarians to check-in and check-out materials to patrons.
- The system will allow patrons and librarians to search for materials and view the current status of materials.
- The system will allow for the creation of digital patron accounts.
- The system will keep track of patron wish lists and auto-notify them if a material on their wish list becomes available for check-out
- The system will track the amount of time materials are out on loan. If materials are not returned by their due date the system will continue to track how long the material has been on loan and record the patron's total fine for overdue materials. Fines will be viewable by the patrons

MILESTONES

1. Project Part I—March 25

Team Formation. Feasibility analysis. Inception deck. Functional and Non-functional Requirements. Plan and schedule the project. Team website for documents, artifacts, and project management.

2. Project Part II & III—May 6th

Complete project and give presentation

TECHNICAL REQUIREMENTS

1. Windows Azure account
2. Three new basic desktop computers for use by SLPL librarians
3. Three to Four cheap second hand (possibly donated) computers that will serve as internet access terminals to patrons so they can use the SLPL electronic inventory system to search materials and edit/view their wish list while in the library.

4. Internet connection through our local service provider.
5. A wireless internet router
6. The system shall fully operate with current versions of Microsoft Internet Explorer, Firefox, and Google Chrome as well as standard Android and IOS browsers.

LIMITS AND EXCLUSIONS

1. We will not be re-engineering the current process. We will simply be automating it.

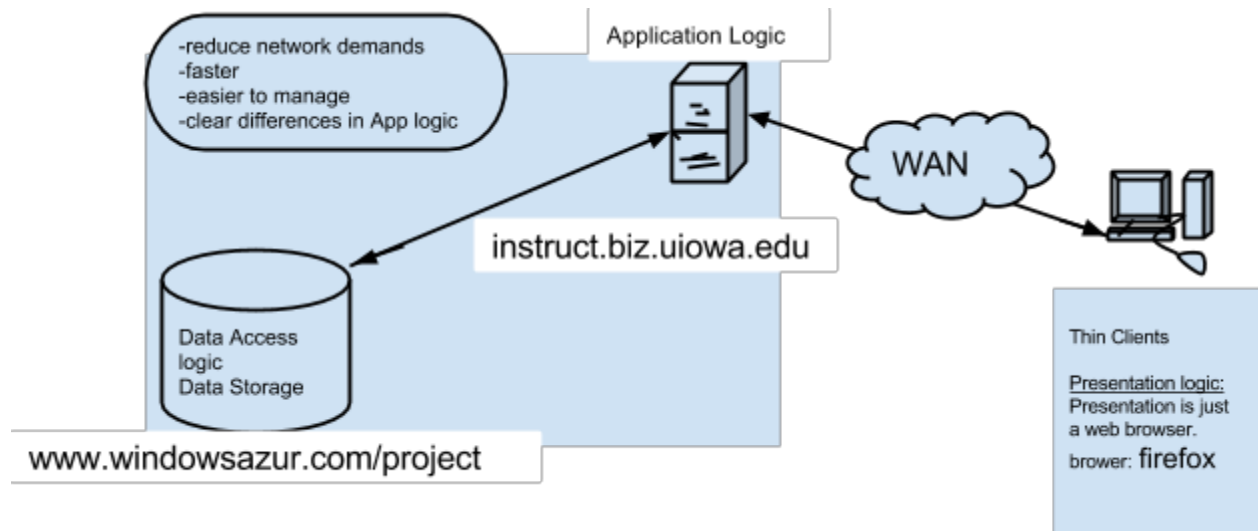
CUSTOMER REVIEW

Professor Colbert -- Mayor of South Liberty

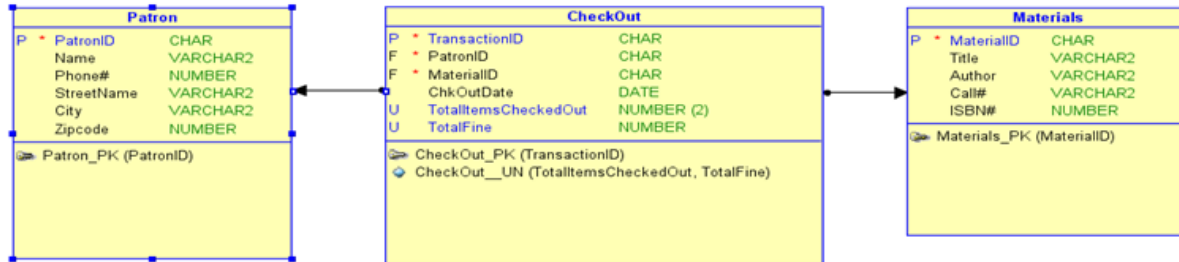
- v. Show the solution
 1. Architecture and environment (~ 1--3 paragraphs + diagrams)

The SLPL project will utilize thin client architecture . This method has several benefits such as low cost, software maintenance handled by Microsoft Azure, and it will be easily scalable. SLPL will purchase 3 baseline desktop computers for staff to use. Staff computers will run Windows 7 operating system and will be equipped with Microsoft Office to allow staff to perform basic administrative tasks. SLPL will also scrounge up 3-4 used desktops to serve as terminals for guests to access the automated materials system. They will function as the ultimate thin client. The terminals will be locked down and only allow patrons the option of utilizing a Mozilla Firefox web browser. The terminals will run on a free operating system such as Ubuntu to save costs.

Diagrams:



2. Business Domain Model



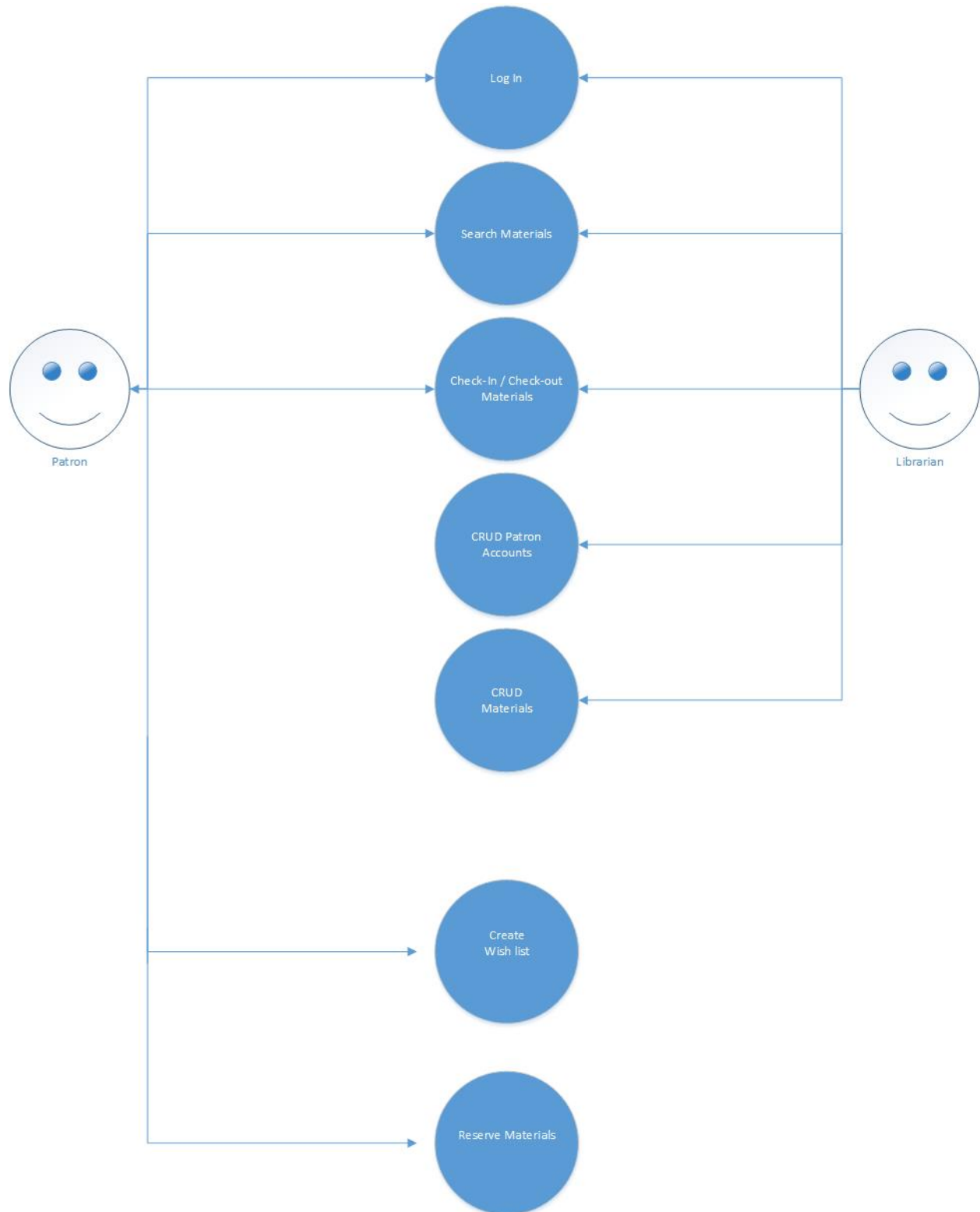
a. Associations, multiplicities, and named associations

A patron *has* one checkout, and a checkout *has* exactly one patron per checkout. --This is a one - to - one relationship

A checkout can *include* several materials. Materials *have* exactly one checkout. -- This is a one - to - many relationship

SLPL Automated Materials Circulation System

Bai, Frink, Ceurvost, Ding



vi. What keeps us up at night (risks)

The SLPL materials automation project has few risks. The project has low complexity, it will be using established technology, the organization is stable, its extremely likely, if not certain, that there will be positive customer and staff buy in to the new system. The few risks we were able to identify are gold-plating, scope creep, and political risks. As amateur developers we run the risk of gold-plating the project and experiencing scope creep. Since we secure our funding through the government there exists a possibility that an anti-librarian politician might come along and cut some of SLPL's funding.

scopecreep

vii. Size it up

1. High level business requirements

In order to give a birth to the new project. Business requirements is necessary. We need to give the high-level statements of the goals, objectives, or needs of the enterprise for investors. Specify the reasons why a project is initiated, things that the project will achieve, and the metrics used to measure success. For this project, we built up four business rules to capture as project vision, mission, and scope. Showing the advantages it will offer and how it will improve the business for the library. First, the system is very secure since only librarians are allowed to add, modify, and delete materials in the materials database. It can protect the database information. Second, no-members should be able to search materials by author and title without being required to login. It can help the library increase the number of patrons attracting more people to register at the SLPL. Third, each member can only hold 5 items in the system, he cannot check out items if he already check out 5 items. It will help other members to borrow the similar books or to have more chance to borrow the book which others' want to. Last, the system allows when a member has a past due on record, he cannot check out more books, which is able to assist librarians to prevent the loss of the materials in library.

viii. Show what it is going to take

1. Cost details

a. Development cost

- An available domain (\$10 - \$15)
- An admin computer to management the server: \$800
- Eight new basic computers for check out and search:

\$800

- Development labor: 200 hrs * \$112 per hour= \$22,400
- Miscellaneous Cost (Wire, switch, desks, set-up fee): \$500
- Data entering labor fee (depending on how much data the library has): 400hrs * \$10 per hour= \$5,000

b. Operational Cost

- A cloud server from Windows Azure:
\$230 per month, \$2,760 a year
* Including 150 GB Database server, 40 GB bandwidth;
(Reference from:
<http://www.windowsazure.com/en-us/pricing/>)
- Website maintenance (upgrade system, fixing bugs, add function or features): \$500 per year
- Hardware maintenance (fix computers): \$500 per year

* We care using cloud server since it can save us a huge an amount of server fee and it is easy to update. The cloud server can also access easily via Internet and have a safer database than local server.

2. Simple Cost / Benefit analysis

South Liberty Public Library System Design Project						
Cost-Benefit Analysis (Group 3)						
From 2014 May to 2016 April						
		2014	2015	2016	2017	
Revenue						
	Funding from Government	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	
	Reduction in Material Cost	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00	
	Donations*	\$ 500.00	\$ 1,000.00	\$ 1,500.00	\$ 1,500.00	
Total Revenue		\$ 11,000.00	\$ 11,500.00	\$ 12,000.00	\$ 12,000.00	\$ 46,500.00
Development Cost						
	Admin computer	\$ (2,400.00)	\$ -	\$ -	\$ -	
	Basic computets	\$ (1,500.00)	\$ -	\$ -	\$ -	
	Development Labor	\$(22,400.00)	\$ -	\$ -	\$ -	
	Data entering labbor	\$ (5,000.00)	\$ -	\$ -	\$ -	
	Miscellaneous Cost	\$ (500.00)	\$ -	\$ -	\$ -	
Total Development Cost		\$(31,800.00)	\$ -	\$ -	\$ -	\$ (31,800.00)
Operation Cost						
	Rent Cloud Server	\$ (2,760.00)	\$ (2,760.00)	\$ (2,760.00)	\$ (2,760.00)	
	Website Maintenance	\$ -	\$ (500.00)	\$ (500.00)	\$ (500.00)	
	Hardware Maintenance	\$ -	\$ (500.00)	\$ (500.00)	\$ (500.00)	
Total Operation Cost		\$ (2,760.00)	\$ (3,760.00)	\$ (3,760.00)	\$ (3,760.00)	\$ (14,040.00)
Total Cost		\$(34,560.00)	\$ (3,760.00)	\$ (3,760.00)	\$ (3,760.00)	\$ (45,840.00)
Total Revenue - Total Cost		\$(23,560.00)	\$ 7,740.00	\$ 8,240.00	\$ 8,240.00	\$ 660.00
Cummulative Net Cash Flow						
		\$(23,560.00)	\$(15,820.00)	\$ (7,580.00)	\$ 660.00	
Return on Investment until 2017 April			0.01			
Break Even Point			3.92			

* The new awesome information system makes people more satisfied about the services of library. As a result, more people are coming to the library and the library are receiving more donations from its patrons and private philanthropy..

** By applying the system, librarians are relieved from heavy work load. Employees work ethic and enthusiasm improved

ix. Is this project feasible? Should it be continued?

Yes it is feasible. The new system is relatively cheap to build and implement. The new system fits with SLPL's organizational mission. Patrons and librarians should adapt readily to the new technology. It should be continued.

2. Section 2:

--CONTENT FOR SECTION 2 AVAILABLE ON TEAM WEBSITE VIA LINKS--

3. Section 3:

a. Plan and schedule for the project.

The time estimates for each user story is contained in the spreadsheet. We added all the work hour we need, and we arrived at 69 hours. After considering the velocity (70%), we get 96.8 hours to complete the work.

We will take 3 weeks for each iteration, each member contributes 4 hours per week and we have 4 members in our team. In this situation, the total work hours for each iteration is 48 hours. From the above calculation, our team will have 2.02 iterations for this project. So the total length will be 42 days.

In the spreadsheet, different user stories are painted in the different color. We will complete user stories which have priority marked as 1-9 in iteration 1. In iteration 2, we will complete user stories which have priority marked as 11-28. During the last iteration, we will complete the rest user stories. Based on our estimation and calculation, the project will be done before May 4th, which is ahead of the customer deadline two days.

4. Section 4:

Team website for documents, artifacts, and project management.

a. Documents should be organized and have a small, detailed description.

b. Documents should be .pdf files.

c. GIT should be used in the creation of the team website with multiple, descriptive commits from at least two different team members.