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Introduction

Significance

Analysis of current, past, and future technological implications in the organization offers awareness to the organization. Recognizing resources available or that may be offered keeps users informed and appreciative of what is given, especially as a non-profit. The organization may also benefit as a whole with given suggestions to enhance the current flow of daily procedures. The library is a public place everyone can relate to on a personal level. The field engagement project allowed us to critique this particular location and give educated suggestions on a place that we have all had a personal experience with. This project serves the community, including the employees of the branch. It is a local place offered to everyone whether they're there for leisure, research, socializing, or any other service. A positive social atmosphere is mandatory for the success of the organization. Our review had a goal with the well-being of the organization in mind, because they are a service for the public, we promote social prosperity.

Key Finding

- The Wicomico County Public Library needs recommendations on known innovative technology that could improve productivity in communication and other facets of the organization.

Research Goal

- Our field engagement aims to improve the technological and financial efficiency and optimize current assets in the main branch of the Wicomico County Public Library.

Site Characteristics

Organizational Functioning

From the WCPL website: “The library offers free public access to information, cultural and recreational resources through books, magazines, books on tape and CD, videos, music, DVDs, and more. Public access computers with filtered access to the internet are available at all library locations. Help finding what you need is always available. Community members are welcome to join together at the library for special programs and in public meeting rooms. It is the mission of WCPL to serve the people of Wicomico County by supporting education, enriching lives, and building community.”

Organizational Policies

Please click [here](#) or visit the “Policies” tab on the Wicomico Library public webpage.

Theoretical Framework

Rogers Diffusion of Innovation

- Relatability – Everyone has a common goal throughout the system, regardless of which office/department they're in. Taking care of the books/CDs/playbacks/other public rentable items and making sure they're accounted for enables all other logistics to be created to ensure that happens.
- Trialability – All staff may be observable, but because systems have a high rate of user error, practice would help any member become proficient in each task. The library deals with a lot of items that need to be taken careful track of to prevent dilemma.
- Observability – All staff may observe each area similar to the way I did. They can observe how to do each role and see the usefulness. Each department connects to help the library run efficiently.
- Late Majority – Adult services staff uses user-friendly computers on environments that are straightforward. They are not required to use or learn much more on technology aside from what they're given. Circulation people may fall between early and late majority. They would lean more toward late majority though because they are using the same sort of tech every day just scanning and organizing items accordingly.
- Early Majority – Tech services is comprised of these people that pick up ideas before those in other departments of the library. They work with equipment that is not as user friendly and more back end type of database systems. Because of this, they must learn from each other in the office when they may have an issue or if there is a new system implemented (ex. The new ILS the branch is about to institute). They utilize more machinery in the office space than those that perform daily monotonous tasks. Circulation people may fall between early and late majority.

Garbage Can Model

- People – People are necessary in tech services, circulation, and adult services. They are mandatory in tech services, necessary in circulation, and potentially unnecessary in adult services. At adult services, they're mostly for offering solutions for others that need help. In tech services, they are decision makers.
- Choices – Executive choices are discussed with staff meetings and are passed from a greater authority. Information comes in and is just passed to each library branch. As the garbage can model suggests, there is an unclear choice in technology. It's trial and error implemented by the library based on what the branch's greater authority pays for them to implement.

Media Richness

- The library enables the option to have face-to-face interaction in many situations but also enabled the option to avoid interaction with others. Adult services poses as a help desk, circulation poses as a help desk in addition to a way to create library card accounts and check out books, tech services has a doorbell that enables people to come speak with more management type personnel face-to-face. On the other hand, rather than using adult services, there is the option to use a computer on your own to find what you're looking for, circulation has a self-checkout option, and tech services has personnel on computers a good majority of the day so you could contact them by e-mail rather. There are many opportunities for the community to have someone to speak with or a technological source to use.

Impression Management

- The process by which people try to influence the image others have of them. All library staff has the chance to shape the community and each other. Making the library catalog available to the public makes the resources the library offers open to anyone's disposal. The staff can also help fellow community members create library cards, which shapes the community with a sense of belonging. The freedom to access the Internet shapes the public to allow them to reach out further than they would have been able to without.

Many people come through the library and are able to retrieve impressions others have us via regular communication skills used between interactions, whether its with other members of the community or the staff. The staff also goes through this concept because they see each other on a daily basis and are able to gather each other's impressions of one another. They appear to joke and get along in a friendly manner; regardless of which office space they're in.

Observations & Analysis

Technological Observations (See observation tables (Appendices A and B) and “Technology: Field Research” in Appendix E for more information)

Hardware Features

- Hardware offers a range of barriers for the staff. On a micro-level, tech services deals with correctly entering books into the Millennium database to increase productivity. Although, this enables a high chance of user error. There are a lot of landlines and internet access ports in each office as well as printers, fax machines, and more. Computers are in the desktop form and are primarily using the ILS the branch provides. The new ILS implementation may be a barrier for many users that may be unfamiliar.

Software Features

- Usability
- Design Features & Data Entry System
 - The branch uses the same interface throughout. Each user uses the same system, which makes things convenient. It is important everyone knows how to use each system. Sometimes the issue comes where when a staff member is out of the department they typically use, they may not know how to use the system. For example, tech services uses a different method in Millennium when entering books into the back end to the database than adult services, because adult services would be browsing the front end of Millennium to view the catalog. Though they work through the same environment, they have different uses for the application that may create some barriers between the staff departments.

Analysis

Themes Drawn from Interviews

- People are accustomed to current standard operating procedures and not all are willing to adapt to change.
- Employees have a simplistic view of technologies needed to complete their jobs and are blind to others that may increase efficiency.
 - The processing lady, Charlotte, didn't like how much space her typewriter (that she used to label incoming books) took up, but she didn't express openness to another technology because she felt as if the typewriter was the only tool to complete the task.
 - The staff does not have a lot of say in its resources. They work with what they're given, but in the case that there's something they really require (equipment, hardware, or literary), they can request it. If there's money, they will receive, but there's not a lot to go around.
- There are compatibility issues when it comes to communication in the workplace.
 - A number of employees are part time. There is an online, internal discussion board-like system in place for communication, but because some employees are part time, it's hard to get caught up on all that happens in the workplace. Word of mouth is efficient, but not everything always gets relayed.

Barriers Drawn from Observations

- The environment and physical setup.
 - Upon observation, the library looks and feels crowded. The shelves are too high and everything is closely packed in. The way the library is organized is the best possible solution to the space problem, but it an insufficient fix. The shell of a building was built as an armory initially, as learned in the interview

conducted by Ashley (with Scott Mahler, Appendix F). The space was chosen for its proximity to the downtown area, ease of access, and its convenience for the community, but it was built to serve as an armory in 1930. It is not ideally set up to be a library. Scott mentioned that the shelves are too high and the general feel of the library is crowded. Ideally, shelves would be lower and spread out further, allowing patrons to browse more easily among many, many other things. On the back end, the receiving set-up causes a lot more work than is necessary. To be processed, books come in on the basement level and have to be placed on a freight elevator to travel upstairs, where they are put into circulation, checked in, or otherwise put out on the floor. New books have to be carted elsewhere to be processed. Ideally, they would come in one way from the book transport mobile and exit on the opposite end with less manual labor. Though they do work efficiently with the space they have, some employees share desks if they are part-time and some regular volunteers don't even have spaces to call their own. There is not a lot of storage space, which has led to clutter in some areas. Overall, though, the library appears as clean and like as much of a well-oiled machine as it can be to patrons.

- Employees are very comfortable with the interlibrary system, Millennium.
- IT staff shortage.
 - Systems will stay down if the one-man technology staff department is absent for the day. There will be a gap in efficiency if something happens when he is out of the office.

Recommendations

Personnel:

Expand the information technology staff. In the ten times we visited, we never came across the one-man IT department. Everyone referred to him as “the tech guy.” Computer Science and Information Systems majors run abundantly around the Salisbury University campus and frantically search for internships as they begin their last year in school, so that would be one resource for *FREE* help. Training takes time, but in the library’s scope, costs next to nothing, so even though the turnover rate would be high, the extra help on hand would be invaluable to the everyday workings of the library.

Increasing the personnel will benefit the internal environment. More staffers will reduce uncertainty and lower equivocality in the workplace, thereby increasing efficiency. Systems will go down and stay down less frequently and problems will be solved in a faster manner. It will also benefit the student portion of the community by producing more internship opportunities for the fitting degree paths.

Pragmatic:

Spend the money to redesign the library. That may mean cutting back on using physical space to hold books that don’t get checked out as frequently and converting them to an e-book. Shorter shelves with fewer books will create a more open and inviting space and encourage people to not only visit, but also spend time in the library. Installing new lighting will make the environment cozy (rather than keeping the harsh fluorescent lighting) and increase energy efficiency, cutting back on electric costs and will thereby enhance corporate social responsibility and make the library appear environmentally friendly. These changes will largely impact the community and the patrons the library serves.

Communication efficiency:

In the near future, the branch will undergo software changes. There will be a new ILS implemented throughout the Wicomico County Public library. By opinion, whether it's more or less efficient to each staff member, it will have to be used without discretion. With given circumstances, everyone should know how to use the new system. A recommendation would be to hold monthly staff meetings to remove any ambiguous ideas members may have about how they should be using the system. Monthly meetings would enable any questions or common errors to be discussed. Shedding light on possible issues may clear the air for anyone that may have uncertainty, in addition to preventing other future errors. Enforcing meetings encourages face-to-face communication between all personnel, which enables a higher media richness. Face-to-face communication amongst everyone at these meetings will create a positive impact amongst staff and therefore on the library's services.

Technological:

While the Wicomico County Public Library does offer patrons access to desktop computers and laptops throughout the space, it is evident that these models are being to become outdated and could possibly lose support from Windows services. The majority of computers were still running a version of Windows that may be capable of completing tasks patrons need to use them for, but they do not offer the features that the library needs to progress in the goals they stated from our interviews. These goals include utilizing the cloud to make saving and transferring documents a lot easier between computers. Also, with the new ILS software on the way, upgrades to computers that the staff use will help with the transition process, as the faster processors and added memory will contribute to the software running smoother. After conducting some research on various models of computers on the market currently, our group was able to find both desktop computers and laptops that would not only help the staff, but would allow patrons to have a more enjoyable experience while at the library.

The Lenovo ThinkPad 11e laptop computer would be a great fit to have in the homework help center, where kids of all ages can come in to work on homework and projects. The model comes with the latest version of Windows 10 Home, with an Intel Celeron N2940 processor that will be more than capable of running the software these kids need to complete their tasks. The added benefits of the laptop's design is its "rugged construction," that allows it to be extremely durable in case of any accidents or drops from the kids. Also, it offers great battery life off of the charger, which allows it to be very portable and can be moved throughout the library. The model is very reasonably priced compared to other new models on the market, with a price tag of \$569.

The computers that we would recommend for the staff to use while they transition to the new ILS software is the ASUS M32CD desktop computer, which also comes equipped with the latest version of Windows 10. The 6th generation Intel Core i5-6400 Quad-Core 2.7 GHz processor will offer the processing power needed to handle the new software and even more potential upgrades the library plans to make in the future. One of the major positives of this model is the outstanding resolution, which offers a 4K 1920x1080 display, that is top of the line. Also, the model allows for Bluetooth 4.0 connectivity between other smart devices, which could allow for seamless connections with devices like smartphones, tablets, and even more. The price of this desktop computer is also very reasonable for the library to afford, as the standard model is priced at \$582, including the monitor.

Reflections

Public library services offered throughout the country vary in their technological implementations. To offer a service to the community that may be deemed more beneficial, it's imperative to keep up with today's technology. This field engagement process allowed us to get a closer look at some of the software and hardware our library location utilized. From the consumer perspective, public technology is offered in addition to services provided to the consumer, operated by a staff member. We were able to get a more in-depth look at back end technologies available and how they are used to maintain the library. This process taught us how clients (the library staff in this case) perceived what's available to them, issues clients have with the given technology, and the effectiveness of the technology in the place.

Pragmatically

Using automated environments rather than manually documenting or processing things is the pragmatic way in this century. The only thing that makes it less realistic is the cost at which we must pay to utilize the services. Newer technology typically starts out at a much higher cost. For example, the price of external hard drives was once very expensive for a low amount of storage. As technology has advanced, larger amounts of storage has become significantly less expensive. This is not because of a lack of demand but rather because of innovation in the field. Today, our understanding is increasing regularly. Our "old" knowledge is soon outdated by "new" studies that make external hard drives cheaper to obtain. As we innovate, we offer the "latest and greatest" things practically every day, outdating "old" findings.

Regulatory

Technology is revolutionizing itself every day. As soon as one device is purchased, it is almost instantaneously out of date. We must stay informed and up-to-date on current and future technologies that are to come.

Socially

Society promotes certain technologies and makes them more popular. The higher the demand for a particular software or device will cause the community to shift with what they use. It is important to stay current in this aspect. For example, the library offers a catalog that can be offered remotely.

Consumers can access what is available without having to actually go directly to the library as the only method of checking availability. This is a feature that parallels with the way the world is moving.

Remotely accessing information is quick, efficient, and socially acceptable.

Culturally

In a cultural sense, the implementation of this technology is becoming the norm throughout every community. It is becoming “the norm” and is considered acceptable by the people at this time. There is some diversity in some processes but overall, the purpose is similar. If I went to the Baltimore County Public Library vs. the California State Library, the technologies offered in each would enable the same functionality. There would not be a culture shock between the libraries because the purpose of each public library is culturally the same and therefore culturally acceptable.

Personally

Personally, we got ourselves into just the right amount of work. A little bit of classroom-based learning and a lot of on-the-job observation took place to get us from start to finish. The most difficult part of our project was scheduling. The library is (primarily) a 9-to-5 business. We had class and other academic obligations each day from 9 to 5, so we had to stretch ourselves thin from time to time and make other arrangements. We were blessed that the library was so conducive to our learning in the long run and that they were as flexible as they could be for us. We found a lot of the “doing” for the project easy. Suggestions came right to us because the library has just the basics. They make great use of what they have, but if money was limitless, a lot of improvements could be made and patrons could be served even better.

Appendix

Ashley Chafin
 WCPL – Main Branch
 08 February 2016
 1:45 to 3:15

Time	Who	Tech Used	Observation	Questions/etc.
2:20	Security guy	Bluetooth headset, walkie-talkie-like radio, a watch, iPhone 6 or 6S	Shirt way too big for him. Talks to reference desk lady (RDL) about weather. On his phone. May be flirting. No wedding ring. RDL lady clearly has no interest in talking to him. He's probably not the most effective staff member	What calls for the need of a security guard? Is he the only one?
2:25	Scott (Adult Services)	Wheels, printing press	Scott is reshelving books. His cart seems to be organized for efficiency.	He probably used the Dewey Decimal System (nonfiction) to organize the books so he maximizes his effort.
2:30	Security guy, RDL	Phone, PC, web	Security guy stands by until the phone rings. RDL answers the phone. She says that they don't give out Maryland State Police applications, but [he/she] was welcome to come in and use the computers to find/fill the application out online.	I totally eavesdropped. I assume a patron was on the other end of the line in search of a job.
2:35	RDL, patron	Printer/PC/some sort of wireless connection, surge protector	Patron asks RDL to print his stuff. She takes his name and pulls up his account on her desktop. She takes his money (I didn't see where she put it, but it was all in change). He retrieves his prints. No delays or better ways to do it.	I assume she pulled up his account to either charge it or check to see if there were any holds (etc.).
2:40	2 patrons	F2F convo	Two guys talked about alcoholism.	They seem to have known each other. This may be irrelevant, but I needed to include it. They were speaking in very muffled tones for about 3 minutes and it's all I could think about.

				I only caught every sixth word or so and I couldn't piece enough details together to gather any conclusions, but they were standing uncomfortably close to the back of my chair and I was really uneasy. Everyone carries a backpack with them and I genuinely haven't felt safe the entire time I have been here so far.
2:45	Scott/2 patrons	PC, pencil, paper	2 people bring papers to the front desk and eventually get sent away because one of them is missing a license/other form of ID.	Scott must be a notary or something. I really couldn't hear the lady talk, but Scott is very loud and I heard all that she said.
2:50	Scott/RDL	F2F convo	RDL asks Scott about me. The phrases I heard were "constraints in budget," "money no object," and "I'm not sure." All from Scott. I like most of those terms.	I have to assume she asked because she had never seen me before. Paula didn't introduce me to her, but I'm sure she sees several familiar faces every day and I wasn't one of them. I have to assume she asked him about the project.
2:55	Patron	Computer, web, google search	Patron is looking at pictures of labs and has been for a while. Mostly black; some yellow. Note: he finally stopped looking around 3:08.	I saw this as very, very bizarre behavior. I'm not quite too sure what was going on. Nothing but looking at pictures.
3:00	Patrons on computers #1 to 12	Social networks, google, email, PC, YouTube, etc.	1 – FB, 2 – something I couldn't identify, 3 – CNN? Video of Ted Cruz, 4 – puppies, 5 – FB, 6 – FB, 7 – email, 8 – YouTube, 9 – FB, 10 – yahoo news, 11 – a gaming site of some sort, 12 – FB	5 and 6 seemed to know each other. Patrons have no problem using the computers, but none of them aren't typing/know how to type correctly.
3:05	Patron	PC, Scanner, cable, headphones	A new patron walks into the library, scans his card, and sits down to an unlocked PC. He pulls an iPhone 4 charging cable out of his bag and plugs it in. He seems in a good mood and begins to do something seemingly more	He probably needed to charge his phone. When he scanned his card with the scanner, it probably unlocked the computer for him. I know they have a 2 hr time limit.

			<p>intricate than the rest of the patrons, but he did type in google.com to get to his search bar.</p>	
3:10	<p>General observations: Everything is dated. The library is horribly lit. It's all fluorescent and I'd really get a headache if I tried to read anything in here. The furniture looks like it is from the 1970s. The staff seems very approachable as a whole and really invested in their jobs and the welfare of the patrons. Overall, the patron demographics are diverse. I don't think I paid as much attention to technology as I could have because everything I was exposed to today is primal, natural, and basic to me. Computers, lighting, mobile electronics...etc. I'm interested in the software and IT aspect of the behind the scenes of the library and I'm more than excited to see that in action during some point next week.</p>			

Date: 2/11/16 (FO2) Field Site: Wicomico Public Library Name: Ben Clemente

Time (note time for that observation in 5 minute intervals)	Who is Involved (Organizational member)	Technologies Involved	Observations (Task, how well accomplished, cause for success/any delays, obstructions)	Questions (insights: concepts, tools, flexibility, efficiency)
2:30pm	Paula/Glen	Computers, Telephones	<ul style="list-style-type: none"> • Old software was very outdated • New software similar to Amazon (makes suggestions based on previous books) 	<ul style="list-style-type: none"> • Why was the software outdated? • What needed to be upgraded?
2:35pm	Glen	Computers	<ul style="list-style-type: none"> • How the process works for getting data from vendors • Power flickered on and off • Technology reset 	<ul style="list-style-type: none"> • How often do these power issues occur?
2:40pm	Glen	Computers	<ul style="list-style-type: none"> • Learning about the catalog software: Millennium Card Catalog (2000) 	<ul style="list-style-type: none"> • How could the software be improved?
2:45pm	Shara	Computers	<ul style="list-style-type: none"> • Use software to create orders from vendors, generate invoices, and keep track of books 	<ul style="list-style-type: none"> • What are the responsibilities of each team member?
2:50pm	Shara	Computers	<ul style="list-style-type: none"> • Matching order numbers with ISBN number • Correcting bib numbers for same paperback and hardcopy books 	<ul style="list-style-type: none"> • Do the different numbers get mixed up easily?
2:55pm	Shara	Computers, Barcode scanner	<ul style="list-style-type: none"> • Inputting SCAT codes to sort different genres of books 	<ul style="list-style-type: none"> • What happens if a scanned book is not recognized?
3:00pm	Paula	Computers	<ul style="list-style-type: none"> • How holds are handled: email sent out, how books are held 	<ul style="list-style-type: none"> • How long are the books held until they go back on shelf?

Date: 2/11/16 (FO2) Field Site: Wicomico Public Library Name: Ben Clemente

3:05pm	Paula	Computers, Barcode scan	<ul style="list-style-type: none"> Scanning order forms from other counties to match up with local library records How the circulation room works 	<ul style="list-style-type: none"> What other counties do the books come from? What software problems occur?
3:10pm	Paula	Computers, Fax machine	<ul style="list-style-type: none"> Making copies and printing out forms needed for records Learning about the lack of a surveillance system: broken security camera 	<ul style="list-style-type: none"> Is there a more efficient way to do this process? How did the camera break? Why hasn't a new one been installed? How many students show up on a daily basis?
3:15pm	Elizabeth	Computers, Copier/printer	<ul style="list-style-type: none"> Learning about the various technologies used in the homework help center 	<ul style="list-style-type: none"> Are these technologies effective in helping the kids get what they need to get done?
3:20pm	Elizabeth	Computers, Security camera, television		
3:25pm	Tracy	Computers, Laptops, printer		
3:30pm	Tracy	Computers, Laptops, printer		

In-Depth Observation 1

Time	Who	Technology Involved/Observation	Questions
3:30	Paula — Volunteer coordinator	-Door buzzer — had to ring in to access certain areas, but the receptionist had to get up every time someone buzzed	-Is the door buzzer necessary? If so, then can we get something to remotely unlock the door? It seems like a burden for the receptionist to have to get up every time the door rings.
3:40	Paula — Volunteer coordinator	-Telephone -Computer	- Can updates to these devices help the communication efficiency through the building?
3:45	Charlotte — Tech processing	-Computer — slow, outdated, blurred screen, even slower	-Updated computers and software are needed. However, if they are able to update them will charlotte and other be willing to learn new software/skills? Will they be successful at it?
4:15	Charlotte — Tech processing	-Typewriter — serves as a label maker, large for the area, other technology would be beneficial	Charlotte said that there isn't anything that does the same skill as this typewriter — is that true?
4:35	Charlotte — Tech processing	Lack of door system — there was a knock on the door and she had to get up and answer	Could a security system or buzzer for the door leading outside be beneficial to them? Is that something in their budget?
4:45	Ms. B — Circulation	Computer — Slow, bulky — had to use it to check books in and out, look up return dates, availability, etc.	They have to do so much work on the computer in circulation — what would be the best type of computer for them to benefit from?
5:05	Ms. B (helper) — Circulation	Scanner — to scan incoming and out coming books. She also had to scan it to check the status of something — DVD, magazine, etc.	Is there a portable scanner that is available? Since they had to take all the books to it, it may be easier to to it to the books.
5:15	Ms. B — Circulation	Telephone — Had to answer the same questions multiple times. There has to be an easier way to do this.	Could they have an automated system to answer the receptive questions that she had to answer? There was a lot of the same questions about hours, book checking in & out, etc.

5:30	Overall observation	Telephones Computers Security Sys. Typewriter Scanner	This place needs updating! All the technology, and software needs to be brought up to date. This will increase their productivity by being able to work efficiently through the day without waiting for their computers to load. There can be thing implemented to make their day easier -- such as a security system, updated, computers, and software.
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Casey Smith In-Depth Observation Table

Framework Bullets	Technology/User Role	Observation—Needs, Barriers, Facilitators, Training etc.
<i>Theoretical Features</i>		
Rogers Diffusion of Innovation	Relatability Triability Observability Late Majority Early Majority	Working in close quarters within office space. One office in back end of circulation and one general large office in tech services. A few offices branched off main room in tech services. Many people doing same task in tech services. Labeling books and entering them in the system prepping them to be shelved in a community easy way.
Garbage Can Model	People Choices	Paraprofessionals (tech services) Other library branches working to connect with parallel systems in the near future (tech services/adult services/circulation) Circulation office consists of front end and back end. Front sends things to back and sometimes back sends down to tech services. Tech services manage lots of incoming and outgoing books.
Media Richness		Circulation enabled high face-to-face interactions, with the self-checkout option via computer. Lots of computers in all areas, help desks available at circulation and adult services for community users. Meeting rooms available to public use to rent out. Paying for overdue books at circulation capability. Elevator accessible to public. Lift in circulation (for books).
Impression Management		Barrier between offices and general public area (upstairs v downstairs) Management stays mostly downstairs or in back circulation office space. Most employees work together with management to enable a comfortable work environment in addition to an efficient process of duties being completed.

<i>Technological Features</i>		
Hardware features	Antenna Satellite	Many landline ports. Photocopier. Wired network. Fax machine. Printers. Wireless printing capabilities. Typewriter (can be replaced with a label maker available for about \$35 online). No scanning devices in office (new ones run for about \$300)
<i>Software features</i>		
	Data entry system	Millennium (backend. Closed network). Getting a new ILS soon. Polaris is a potential ILS to come. Scannable barcodes. Easy to make errors by user doing data entry.
Usability		User friendly. Desktop computers. Touch screen and laptop computers available in library as well.
	Design features	User entry system to search & select books. Once selected, barcode is assigned to the book then placed on book. System enters things in library inventory database in addition to catalog.

Technology: Field Research

5 Foundational/backbone technologies being used at our organization:

1. Millennium
2. Typewriter
3. Computers
4. Security System/Camera
5. Telephone

Technology 1

Features of technology:

Technology	Features	User Skills Required	User Challenges/Facilitators
Millennium	-Online Database/Catalog	-Typing -Data Entry	-Unfamiliar environment

Market analysis

Technology	Price/Features	2 Major Competing Models	Price Features
Millennium	Connectability with other users/libraries	Apollo Mandarin	Price varies on the library, size of the organization, accessibility, and contract length.

["http://www.captterra.com/library-automation-software/"](http://www.captterra.com/library-automation-software/)

Competing Model 1

Model 1	Features	Pro Features (Organizational benefits, User fit)	Cons—Features (Costs, User training/fit, challenges)
	No lagging software, internet based	Caters to only public libraries eBook access	Cloud based -- can be a security issue

Competing Model 2

Model 2	Features	Pro Features (Organizational benefits, User fit)	Cons—Features (Costs, User training/fit, challenges)
	Fully web based	Can access from any workstation with the login	No acquisition management ability

Technology 2

Features of technology:

Technology	Features	User Skills Required	User Challenges/Facilitators
Typewriter	-Keyboard -Paper feed to print on manually placed designated paper	-Typing -Paper feeding	-Ink deficiency -Paper/Ribbon jams or deficiencies -Hardware issues/damages

Market analysis

Technology	Price/Features	2 Major Competing Models	Price Features
Electronic Typewriter	Averages at about \$110+. Depending on the functionality, the price may increase or decrease accordingly. There are more user friendly options in the hardware because it is electronic.	Brother Brand Smith Corona	Price varies depending on additional add-ons (ex. A usb reader to enable typing from an alternative platform)

Interesting link having to do with a typewriter advancement:

<http://www.dailymail.co.uk/sciencetech/article-1387779/Who-needs-keyboard-plug-typewriter-computer.html>

Competing Model 1