**IST 412: Complex Software Systems**

**Term: Summer 2020**

# Topic: User Study & Requirements Specification

**Pennsylvania State University: World Campus**

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**Group Study Findings**

Sabahat Aziz

**Study Design:** **Eliciting Method:** **Forms of Communication**

Eliciting requirements are a set of activities created by designers, stakeholders, and customers, that collect information about the design, functions, and properties of a system. These requirements are then implemented into the design of a project. Gathering all that data, analyzing and discovering new ideas regarding the system, and understanding the concept of the program is a very crucial part of a project development process. It’s crucial because this first step leads into developing a system that is beneficial for all users and ensures that it’s full of great quality and content, as in the users will be satisfied. The eliciting method I chose to discuss would be forms of communication.

Forms of communication are extremely useful especially concerning employees. One-way designers can have a form of communication is by hosting meetings. In these meetings we can discuss and go into detail about the complexity of the project. These meetings are vital to the success of the system. Effective communication gives the creators an idea of what the project is missing, what it can improve on, how and what the program can be used for, the benefits of it, along with the technical and functional properties. Gathering recommendations and having this form of interaction not only creates a relationship with the designers and the users, but it also helps the creators understand what the users really need, therefore enhancing the project.

**Targeting Group:** **Employees**

A targeted audience is another essential element that plays a role in the success of a system program. A target audience is a set group of people that are going to be your potential customers. It is imperative to gather feedback from many target group sources such as new or old users, stakeholders themselves, managers and more. The group I chose is employees.

Employees already have set knowledge about the company their working for, products, and technologies. Unlike a specific target audience, like a group of 20-year-old males, the major reason for having employees be one of our main focus groups is that they’re diverse. Diverse in the sense that employees are a diverse range of people. They’re different culturally, have different levels of education and knowledge, different skills, and different opinions and inputs. Once they use the system, they will be able to tell what works best for them and what doesn’t. They can relate any of their criteria back to other users who might have the same criticism. With these responses we can create the system mFinance for Callisto Finance. Employees who already work for Callisto Finance will have an understanding of what other users will need on the design we create. They can judge the attributes and we can update our program based off of that.

With appropriate candidates, effective communication, and user participation our software will be able to benefit everyone. We will be able to consider everyone’s needs and go accordingly to that.

**Participant Description:**

Data:

[**Albana Beqo**](https://psu.instructure.com/groups/596909/users/6846588)

**Study Design: External Vendors**

**Eliciting Method: Task and Process Analysis, Background research, Interviews**

In order to elicit requirements for the external vendor stakeholder we have decided to use a combination of eliciting methods. We believe that viewing things from different angles can enable us to draw upon different perspectives and therefore get a more complete visual of the system requirements needed to build the loan application system successfully.

A task and process analysis is essential in order to fully understand the loan process end-to-end and be able to pinpoint how the system will communicate with other systems via published APIs, or how external vendor input/output may be necessary in order for the loan process to flow. The data collection and data flow can be easily tracked through this analysis. The information needed can be found in the current business models, and business processes, process manuals, or through the conduction of user observations.

Background research is also an appropriate eliciting method here as well, because drawing on best practices that are already successful outside of the company can be advantageous in many ways. Technology has really advanced a lot in the past decades and conducting a research to find out what works best and what does not, can give your ideas a new perspective, but it can also help you to avoid making mistakes that have already been made.

Finally interviews with vendors such as brokerage companies could be beneficial in taking in their point of view and their perspective. However, this method is not appropriate for certain vendors, such as banks or financial institutions.

**Targeting Group: Other Banks and Financial Institutions, Brokerage Companies, Credit Rating Institutions**

The targeting group discussed here are the external vendors upon which the company relies to conduct its business. External vendors are essential to Callisto Finance. No banking or financial institution would be able to conduct business on their own, without the ability to interconnect and cooperate with the myriad of other financial and banking institutions which are essential and an integral part of any financial institution. The online system mFinance that facilitates the loan application, approval and disbursement process for Callisto Finance, is no exception from the rest of the financial institutions. In order to properly function mFinance must rely on external vendors. For the most part, the external vendors are other financial institutions, which are mostly contracted vendors of the Callisto Finance. Such institutions could be other banks, credit rating vendors such as Experian, or risk solutions companies such as LexisNexis. However, there may also be other external vendors who could also be regular users of the system, such as contracted brokerage companies, or other lending financial institutions.

Developing a system that will securely and effectively enable the necessary communication with such vendors is essential for conducting business. Furthermore, building a system that communicates with such crucial vendors in a seamless, flawless and secure manner is even more important, and could even be used as a competitive vantage point for the company that invests in such a system.

**Requirement Materials: Field Observations, Use Case and User Stories, Questionnaires, Surveys, Process Manuals, Background Research**

There is a wide variety of materials that could be used to elicit external vendor requirements. The starting point could be the creation of use cases and user stories and the collection of internal, current data using questionnaires and surveys. After this initial data is collected, it could be compared to data retrieved from existing process manuals in combination with field observations in order to ensure that the current processes are in synch with the business requirements. And then the results of such comparison could also be placed against data gathered from conduction a background research. This could serve to conduct a thorough analysis of how things operate in paper versus in real life within the company, and then we could compare internal operations to external operations in order to achieve a broader perspective.

Throughout the entire process, the materials will be completed with the help of the system users, including customers, employees, SMEs and management.

Participant Description

The participants in this study are representatives of typical third-party vendors for the new system. As described above, there can be various external vendors, therefore, we have chosen to elicit requirement material from the most common ones. In this study we have created personas for other banks’ representative, brokers, and Lexis Nexis representatives.

A bank representative, needs to have access to basic loan information such as loan account number, name of accountholder, social security number, date of birth and address. They need to have access needed for transactions that transfer money to the loan account. They also need access to a secure portal for these transactions to be performed and they need data to be protected.

Brokers are external vendors who need similar access to that of a customer, but with a broader scope of privileges. Their access to the system should be at a level between customers and internal employees, guided by laws and regulations that govern brokerage practices and contractual agreements. They will need to complete an online application, but maybe have more data available to them than a regular customer would. They should access a more detailed application status check.

Lexis Nexis representatives and other third-party credit rating agencies need access to customer’s personal information that is gathered from the system. They may need to be able to provide feedback for data inaccuracies and request revision of data in order to process credit rating requests.

Data:

Ryan Carey

Study Design:

**Eliciting Method:** Contextual Interviews, simple interview, field observation, background research.

The best way to figure out what the government wants our project to do will be observing how existing entities, like banks and auditors, handle the regulatory requirements imposed on them. Then, we can satisfy the same requirements. We also need to do some research to determine whether performing the requested services through an app will incur any separate regulations.

**Targeting Group:** Government

The government is inherently involved in certain transactions as a result of the National Bank Act. There are restrictions on the types of investments a bank can make, as well as on the total amount they can lend to any one person or entity. The *Electronic Fund Transfer Act* of 1978 may have some bearing on our project as well. These things need to be considered to avoid breaking federal law.

**Requirement Materials:** Notebook, Camcorder, Internet

A good method of figuring out how to handle government regulations is to perform contextual interviews with companies that already do so successfully. We will already be doing that as another group member has said, so we will put some focus on how the bank deals with the regulations imposed by the government at the same time. Finally, it is always better to call the government than to have the government call you, so we will also need to set up a meeting or a call with someone from whichever federal regulatory agencies Callisto Finance falls under.

Participant Description: An employee of a bank who deals with government regulations in both paper and electronic forms regularly. They should have a good idea of what we need to do, and their time isn’t as valuable as the supervisor so a field observation works well. A bank supervisor or manager to fill in the gaps regular employees may not have to deal with, and a bank auditor to inform us of what mistakes they often see.

Data:

Federal Deposit Insurance Corporation – Specifies the required insurance limit for banks since 1933, updated often enough to remain relevant.

Federal Reserve Board – Provides oversight of federal reserve banks, of which there are 12.

Office of the Comptroller of the Currency – an independent bureau within the Department of the Treasury.

National Credit Union Administration – An alternate body to the FDIC that controls credit union deposit insurance.

PATRIOT Act – A counterterrorism act that requires communication and information sharing between many different institutions and the government, of which banks are one.

United States Constitution – Supercedes all or nearly all other laws and documents.

Dave Blon

Study Design: **Focus Groups / Workshops**

The eliciting method to determine project requirements that I have chosen is the use of focus groups and organized workshops. The point of the focus group is to create an interactive session with the selected group of people. We want to essentially capitalize on the on the “synergy” of the group to create a great effect on the potential project. We need to prepare the group by selecting those who need to be a part of the group to come out with the best possible outcome for the stakeholders and the team operating on the project. There needs to be a structure of who will do what and any topics of interest that the selected people will go over. There needs to be organization of when, where, and how the focus group will take place as well. When the group takes place, there needs to be concrete understanding that everybody involved should share their opinions, ideas, and interact freely, or else the focus group could fail. In the end, there should be a report of what the group agreed on, what they disagreed on, and the key takeaways from the meeting.

We can also look at workshops to elicit some requirements. They are very similar to a focus group, so they can fall under one category with a few small differences. Again, we need to determine the where, what, and how the workshop will be conducted. Then we need to gather a selected number of stakeholders who can understand that everybody’s input is valued and not just a few dominant figures. A difference from conducting a workshop compared to a focus group is that in workshops we may conduct interviews before the session begins. This allows us to gather some preliminary information so that we can find a starting point and a desired direction of the meeting. Then in the end, just like the focus group, we can have a record of everything we went over including agreements, disagreements, and focal points we can really streamline in the project.

Participant Description:

The people involved in this study were from a few different professions and backgrounds. Some work in government or work in the government field to analyze regulations and policies. Some people are customers at other financial businesses. They are necessary to give advice on how customers would expect to conduct business and go about using the web software. They participated by giving good feedback on what a customer would like and see as a problem. These are participants who would have be associated with different types of loans who give ideas on how a specific process should be designed and implemented. Finally, there are participants in the design study who have a share in the product. They gave input on what they expect to risk and how to gain from that risk as well. They are the ones investing money and reputation on the product, so they have their own ideas as to how the feel the direction of the product should move.

Data:

**Government Participants**

* Follow the guidelines on **AICPA/FAF/NASBA “BLUE-RIBBON PANEL” ON STANDARD SETTING FOR PRIVATE COMPANIES**
* Comply with **U.S. FEDERAL FINANCIAL INSTITUTION REGULATORY AGENCIES GROUP**
* [**Bank Secrecy Act/Anti-Money Laundering (BSA AML)**](https://www.csiweb.com/how-we-help/risk-management-services/regulatory-compliance/federal-regulations/bsa-aml-compliance/)Comply with BSA AML regulations by integrating a strong anti-money laundering compliance program using CSI’s BSA AML audit tool.
* [**Bureau of Industry Security (BIS)**](https://www.csiweb.com/how-we-help/risk-management-services/regulatory-compliance/federal-regulations/bis-compliance-regulations)

BIS compliance laws administer and enforce export controls on U.S. commercial products, software and technology.

* **Fair and Accurate Credit Transactions Act (FACTA)**

In addition to allowing consumers to request credit reports, this act contains guidelines to prevent identity theft and requires security around the disposal of consumer information.

* [**Federal Financial Institutions Examination Council (FFIEC)**](https://www.csiweb.com/how-we-help/risk-management-services/regulatory-compliance/federal-regulations/ffiec-compliance)

This five-member agency is responsible for establishing consistent FFIEC guidelines and uniform practices and principles for financial institutions.

* [**Financial Crimes Enforcement Network (FinCEN)**](https://www.csiweb.com/how-we-help/risk-management-services/regulatory-compliance/federal-regulations/fincen-requirements)

FinCEN compliance regulations activate section 314(a) of the USA PATRIOT Act, giving law enforcement the power to request information from financial institutions connected to investigations.

* [**Gramm-Leach-Bliley Act (GLBA)**](https://www.csiweb.com/how-we-help/risk-management-services/regulatory-compliance/federal-regulations/glba-compliance)

GLBA compliance focuses on the security of consumers’ personal financial information by enforcing various rules that determine how financial institutions and related industries collect and protect confidential information.

* [**Health and Insurance Portability and Accountability Act (HIPAA)**](https://www.csiweb.com/how-we-help/risk-management-services/regulatory-compliance/federal-regulations/hipaa-compliance/)

HIPAA compliance rules promote the secure flow of health information while supporting the highest levels of patient care.

* **Office of the Comptroller of the Currency (OCC)**

OCC compliance mandates supervisory actions, and it issues rules and regulations related to investments, lending and other practices.

* [**Office of Foreign Assets Control (OFAC)**](https://www.csiweb.com/how-we-help/risk-management-services/regulatory-compliance/federal-regulations/ofac-regulations)

OFAC regulations implement the Specially Designated Nationals List (SDN List), which prohibits U.S. businesses from engaging in financial transactions with any parties identified on the SDN List.

* [**USA PATRIOT Act**](https://www.csiweb.com/how-we-help/risk-management-services/regulatory-compliance/federal-regulations/usa-patriot-act-regulations)

In response to the terrorist acts of 9/11, USA PATRIOT Act compliance requires financial institutions to meet regulatory guidelines when verifying the identity of customers opening accounts.

Customer Participants

* Easy to navigate between pages
* Easy to read instruction on how to apply for loans
* Support services
* Multiple Options – Loans, Payments, Account Information, Security, Help, Enquiries
* Low Income Consultation
* Complain Engine
* Savings Campaign

Shareholder Participants

* Conferencing system
* Site – Investor Interaction
* Leadership Sessions
* Quarterly Reporting System
* Share Board

**Requirement Specifications**

**Functional Requirements**

|  |  |  |
| --- | --- | --- |
| **Req #** | **Title** | **Description & Rationale** |
| **F-1** |  |  |
| **F-2** |  |  |
| **F-n** |  |  |

**Non-Functional Requirements**

|  |  |  |
| --- | --- | --- |
| **Req #** | **Title** | **Description & Rationale** |
| **N-1** |  |  |
| **N-2** |  |  |
| **N-n** |  |  |

**Interaction Requirements**

|  |  |  |
| --- | --- | --- |
| **Req #** | **Title** | **Description & Rationale** |
| **l-1** |  |  |
| **l-2** |  |  |
| **l-n** |  |  |