**Iteration One**

**Louisville Office of Research and Innovation**

**Written by**

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**System Request**

**Project Sponsor:** The Office of Research and Innovation of the University of Louisville is looking to Cardinal Strategic Development Group to improve upon the design and function of its official Website. Our primary point of contact within the Office of Research and Innovation is Baylee. It’s been agreed that contact will be maintained primarily through email and the occasional face to face meetings during key points of the system’s design. As the sponsor, the office has a stake in the success of the project and the University of Louisville and its stakeholders are the final beneficiaries of the project.

**Business Need:** For this project to be successful, it must provide value to the Office of Research and Innovation. With Baylee’s main concerns voiced to the team, the project must meet the office’s needs for the overall improvement of its website. The main priority is to increase revenue generated by Research and Innovation conducted by the University of Louisville. It must also improve access to information relevant to each stakeholder whether they be students, researchers, industrial partners and the community as a whole. Another focus of the project must be the improvement in the general design and organization of the website. It must increase the efficiency of the processes conducted on the website and provide a platform for the initiatives and opportunities that the Office has made available to all stakeholders.

**Business Requirements:** The new website will have to streamline access to, and the information provided by the website. It must give prominence to funding opportunities made available by the Office of Research and Innovation to all relevant stakeholders. It must have a twitter and news widget. It also must digitize all applicable forms in order to increase the efficiency of processing relevant applications.

**Business Value:** By Implementing this project, The University should see an increase in revenue of $626,262.08

**Special Issues or Constraints:** With the Office or Research and Innovations sponsorship and as with any project, there are issues and constraints to be aware of during planning and design. We are determined that in order to navigate these potential problems, the project must fall into the several parameters determined through meeting with Baylee. The Content Management System must be the same as the one provided to the Office of Research and Innovation at the University of Louisville. The website must follow the University’s brand standards. Another constraint is established lead flows must be preserved. The website’s current “Good News” and “Funding” Newsletters must also be maintained. The Industry Research Form was also singled out as a form that must be kept in the new website of the Office of Research and Innovation. As a focus of the office is Innovation the website appearance should be cutting edge.

**Narrative**

**Thesis:** The University of Louisville Research and Innovation department website fails to drive users to their sought after sector, which results in a loss of revenue for the university.

**Researcher Problem Statement:** As a researcher, the website does not guide you to your desired destination. Researchers must navigate through the “Innovation & Engagement” page and find “I want to… Research” at the bottom. From there the best guess is to click the “Research Centers and Institutes” option, which directs you to a list of ungrouped links. There are 19 links; one for each center/institute. However, some of these are listed only by the name and unless you are familiar with the facility, you would not know if it is the place for you (example: Trager Institute). By the time the researcher finds the form necessary to apply for funding, they are irritated and exhausted. These factors are enough for a researcher to look into other institutions that may be more accommodating. When our client loses researchers to competing institutions, the university loses revenue.

The website also offers no positive reinforcement to the research community. In order to attract researchers, there must be incentives for them to come. The home page is the user’s first and last impression of the Research and Innovation Office. This problem comes from the home page not offering any objective facts about the organization. Once the user is there, we want to hold their attention.

Another problem is the low-visibility of the integrated Research Information System (iRIS). iRIS log-in can be found under the Research Support tab. iRIS is where account holders can access and manage their grant opportunities, projects, and forms.

**Business Case**

To analyze the tangible benefits our client could reap from the new system we anchored a few different revenue scenarios based on our client’s financial awards in recent years. In 2016, our client only received $134.6 million in awards. In 2019, our client saw $152.1 million in awards. 2019 was approximately a 13% increase in awards for our client. With the new system, we project our client could improve at least 15% in awards. This projection would lead to $174.92 million in awards.

**Student** **Problem Statement:**In regards to web pages focused on student stakeholders forms on the website are haphazardly organized and done.With some being available by pdf and others being available to be filled on site. Digitizing all forms will speed up the organizing, storing and processing of student applications. This should dramatically reduce time and thus increase the efficiency in granting students research grants as well as reduce time and cost for the office.

**Industry Problem Statement**: Searchability for information pertaining to the Industry, can not be located easily. There is no exactly a field that showed direction particular for industry. Many related tabs are hidden within the research business process with makes it extremely difficult for anyone to access it. Information are mixed and undefined. There is a necessity for the web pages to show potential links that can bring the users to find information regarding the university’s partner. Without a proper process, the students will lose opportunities to work with the industries while the industries will also lose incentive to collaborate with the research office.

**Community Problem Statement:** The problems with the community audience is detrimental to the site because there is no engagement. The welcome and mission statements for the office of Research and Innovation emphasize that their goals are to “serve the community.” Still, there is no justification within their site that shows engagement from the community. Including the little to no processes that allow the community to interact with the office of research and innovation that are internal, there are also no processes that allow for the other three audiences to interact with the community. If the other three audiences are unable to communicate with the community, their goals could be different from the wants and needs of the community that they serve.

The vision for the community audience within the Research and Innovation site should focus on how research and innovation at the University of Louisville “serve the community.” Also, provide processes that allow for regular communication to the community from the other three audiences and vice versa.

The office of research and innovation site does a poor job of showing the involvement within the community. If the office increases community engagement through their website, this will increase overall traffic and thus provide access to new audiences.

**Feasibility Considerations**

**Technical Feasibility**

**Functional Area**- Risk increases dramatically when the users themselves are less familiar with an application, such as with the development of a system to support a business innovation. The current member facing (front end) of the website has tabs coordinated to different locations that are not inherently difficult to reconstruct. The current tabs can be repurposed and web links to refer to Industry specific material. The effort to complete this task is moderate and within the skill set of the current team. As the website is University of Louisville website and the makeup of the team are current students of university. Thus, this project has low risk in this respect as we are very familiar with its use.

**Technology-** When a system uses technology that has not been used before within the organization, there is a greater chance that problems will occur, and delays will be incurred because of the need to learn how to use the technology. Risk increases dramatically when the technology itself is new. Due to parameters and scope of the project we will not be changing any major systems involved in the website such as the content management system or payment management system. There are no foreseeable compatibility issues. Thus there is a low technical risk.

**Project Size-** As with any project of this magnitude, Project size is an important consideration, whether measured as the number of people on the development team, the length of time it will take to complete the project, or the number of distinct features in the system. Larger projects present more risk, both because they are more complicated to manage and because there is a greater chance that important system requirements will be overlooked or misunderstood. The extent to which the project is highly integrated with other systems can cause problems because complexity increases when many systems must work together. The systems in use are highly integrated within the organization and thus generates a low level of risk. The development team is newly formed and its large size generates a moderate level of risk.

**Organizational Feasibility**

The organizational feasibility of the system, how well the system ultimately will be accepted by its users and incorporated into the ongoing operations of the organization is a necessary issue to be considered. There are many organizational factors that can influence the project, and seasoned developers know that organizational feasibility can be the most difficult feasibility dimension to assess.

**Strategic Alignment-** In the words of the Vice President of the Office of Research and Innovation “At the University of Louisville, we apply that methodology to the ideas that come out of our research. Rather than keep them in the classroom or lab, we use those ideas as a mash that we ferment, double and age into products, companies and partnerships — each with a potential human, societal and economic impact that reaches far beyond our campus.” In terms of strategic alignment there is low level risk. Our project is fully in line with the strategic goals of the organization. This project will renovate the face of the organization i.e. its website, to fit its mission and goals. The project will reorganize and update the processes conducted on the website in order to better facilitate the mission of the organization. The current process is not easily accessible to the user causing possibly a loss of funds for students and researchers, potential industry partnership and useful and meaningful relationships to the community. The emphasis of the project will focus its students, researchers, industry and community as its primary stakeholders.

**Economic Feasibility**

**Cost-Analysis-** The cost of making the necessary changes is relatively low. We split costs into two categories: development costs and operational costs. Development costs are estimated to be $0, it will only cost the current staff’s time to construct the new system. The operational costs are also expected to be low or none because the Content Management System (CMS) is already provided by the university.

**Feasibility-** The project is rated as high economic feasibility. It is expected to be low-cost with the ability to spark an increase in revenue. According to our client, the current system only cost the staff’s time (spread out over the course of a few years). The maintenance also comes at no cost because the university supplies our client with a content management system (CMS). There are currently no foreseen considerable costs to account for. With that being said, the project will not demand as much time as the previous, more inefficient system. To give you some metrics about revenue, we compared the University of Louisville (UofL) to some close competitors according to the National Science Foundation (NSF).

In the fiscal year 2018:

UofL ranked 125th in Research and Development (R+D) expenditures at $176.5m. The five schools ranked ahead of UofL (Nebraska Medical, Houston, Texas Medical, West Virginia, and Texas Tech) averaged $181.5m in R+D expenditures. The ten schools ahead of UofL (previous five plus Delaware, Oklahoma State, Wake Forest, Tulane, and Florida International) averaged $186.3m.

We believe by implementing a new system, UofL can **reasonably** surpass the five schools ahead. We **optimistically** believe UofL can surpass the ten schools ahead.

**UofL Research & Innovation Project**

**Vision (Small Project)**

**Version <1.0>**

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**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Version** | **Description** | **Author** |
| 01/23/2020 | 1.0 | Basic inputs | CSDG |
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|  |  |
| --- | --- |
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| Vision (Small Project) | Date: <01/30/2020> |
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[**V**](https://docs.google.com/document/d/19RfIZeq1uV9QSo1Rq1WNYRb32ncf4R3U/edit#_heading=h.35nkun2)**[ision (Small Project)](#_35nkun2)**

# [**Introductio**](#_35nkun2)**n**

This document will define the scope of the project, identifying the current shortfalls of the processes. The targeted users are Industry, Students, Researchers, and Community. The project focuses on the needs of the stakeholders addressing the users that should be drawn to the site.

## [**Reference**](#_35nkun2)**s**

1. Vision Document Template
2. “Higher Education Research and Development Survey Fiscal Year 2018”, <https://ncsesdata.nsf.gov/herd/2018/index.html> accessed on Jan 29, 2020
3. “University of Louisville Research and Innovation*”,*<https://louisville.edu/research>, accessed on Jan 28, 2020
4. “University of Louisville Research and Innovation Metrics FY 2020 July-Sept”, PDF, <https://louisville.edu/research/metrics/uofl-research-innovation-metrics>, accessed on Jan 29, 2020

# **[Positioning](#_35nkun2)**

## **[Problem Statement](#_35nkun2)**

|  |  |
| --- | --- |
| [The problem of](#_35nkun2) | [The client’s current website is inefficient.](#_35nkun2) |
| [are](#_35nkun2) | [Student, Researcher, Community members, Industry, and Administrator within Louisville](#_35nkun2) |
| [the impact of which is](#_35nkun2) | [The impact is potentially lost revenue. A more efficient web system will capitalize on research demands.](#_35nkun2) |
| [a successful solution would be](#_35nkun2) | [A website that is](#_35nkun2) aspires different stakeholders to collaborate the the University |

## **Product Position Statement**

|  |  |
| --- | --- |
| For | The target customers are companies, industry members, and individual researchers seeking cutting-edge resources. |
| Who | seeking opportunities to increase revenue and to obtain funds |
| The (product name) | Uofl Office of Research and Innovation Website |
| That | showed potentials to attract industries and business to conduct more research |
| Unlike | complex and confusing research facilities |
| Our product | is well-designed structure that is ease of access, and easy navigations |

# **Stakeholder and User Descriptions**

## **Stakeholder Summary**

|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Responsibilities** |
| University of Louisville  Government (State and Federal) | This stakeholder is the parent company of the client.  This stakeholder is an issuer of monetary awards. | Help maintain the project’s process.  [approves fundings and federal grants to the University](#_35nkun2) |

## [**User Summary**](#_35nkun2)

|  |  |  |  |
| --- | --- | --- | --- |
| **[Name](#_35nkun2)** | **[Description](#_35nkun2)** | **[Responsibilities](#_35nkun2)** | **[Stakeholder](#_35nkun2)** |
| [Researcher](#_35nkun2)  [Student](#_35nkun2)  [Community](#_35nkun2)  [Industry](#_35nkun2) | [Innovators of different research topics](#_35nkun2)  Louisville students who participated in research projects  Involved members of the Louisville community  Business corporations from different field | [Produces analytical reports and data analysis of research](#_35nkun2)  Participate in research activity and expanding their knowledge  [addresses concerns and hosting community services](#_35nkun2)  [provides partnership programs and additional funding for the university](#_35nkun2) | [Themselves](#_35nkun2)  Themselves  Themselves  Themselves |

## **[User Environment](#_35nkun2)**

[Currently, there are 7 members involved in the team to recreate a well-designed website for Uofl Research and Innovation with the goal to increase the University’s revenue. Currently, this task is still in its proposal phrase with multiple competitions among different groups. The expected task cycle will take approximately four month followed by another four month starting next semester.](#_35nkun2) There are no expected changes to this process unless an unexpectancy of university’s constraint such as natural disaster prevents us from completing the project.

The University of Louisville uses IRIS which is a research platform for its student, researcher, and the whole community. We are also planning to keep our content management system and payment management system without changes. This means that there will be a low compatibility issue with the platform.

The System platform that is in use currently is Plone it is an Open Source CMS with limitless Extensibility, Scalability, integration with specialized applications and standard enterprise systems, and many more features.

Applications that are currently in use are Plone and Hubspot. We currently do not have any plans for future platforms.

## [**Summary of Key Stakeholder or User Needs**](#_35nkun2)

The website has several problems that need to be addressed. The linking of pages in the main page are organized without a distinction of which subgroup they are addressing. The tabs that are at the top of the page are missing direct paths to the information that is held in the subcategories. Industry has information that is given in several different tabs, innovation that is available to the industry is not in the main topic. Spotlighting innovation within the top of the website will ensure full visibility to new opportunities available. Creating a specific tab that groups all information to Industry in one place will ensure full visibility.

The second problem with the website is the community information. The same issues are found in the information for community as above, the spread of information with no central location. Information about success stories shown but easily missed, the webpage should attract the users to certain areas. Community users must engage the webpage through several tabs to find specific information. The resolution would be to use images or effects within the webpage to highlight the success stories and give a central location to get additional information.

The third problem with the website is the Researcher information, in addition to the above information is given in all areas of the website. The tabs throughout the website enable Researchers to pursue links to the wrong information. The webpage is not only missing a central location, but also specifics to which research the tab holds. The resolution would be to break the research into subcategories based on field of study and provide options within an additional web page that is user specific.

The last problem incorporates two major factors Students and Administrators, the information for both are lacking in information. The links give the user insight into where to go to find information, but lack in innovative design. The whole website is standardized, overall impression of the website shows that little to no effort was used in the creation. Incorporating new designs that enhance the overall look of the webpage and spotlighting new or current initiatives will give insight to new users. Improving design to attract new users attention to main items and simplifying resource links will improve user experience. The goal of making improvements is to showcase initiatives and improve user navigation. The outcome for a supported website would be to increase user traffic by enabling users to navigate site quickly and increase proposals by showcasing current/past engagements.

The original design of the website consisted of problems such as low visibility, overwhelming information, unclear processes, dated designs, and unclear incentives. This makes the stakeholders such as students, researchers, industry, administrator, and community to be able to find the information that they need quickly. Most information are mixed and the stakeholders find it difficult to find what they need. The main goal for this project is to improve the general design of the website. By re-innovating the website’s design, our biggest goal is to re-organize all the business processes to make it more clear and easy to understand.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| [Need](#_35nkun2) | [Priority](#_35nkun2) | [Concerns](#_35nkun2) | [Current Solution](#_35nkun2) | [Proposed Solutions](#_35nkun2) | |
| [Reconstruct the website of the Office of Research and Innovation to improve the effectiveness for access of information for stakeholders](#_35nkun2) | [High](#_35nkun2) | [Stakeholders are unable to find correct information](#_35nkun2) | [None](#_35nkun2) | | [gtggg Create new tabs that differentiate information for different access group](#_35nkun2) |

## [**Alternatives and Competition**](#_35nkun2)

Competition includes University of Kentucky and different office of research and innovation in Kentucky that may prevent our website to lose patrons. Since the University of Kentucky is also an organization that is located in Kentucky, they are the top competitor against University of Louisville. Its major strength is they showed a clear display of the research processes with data, resources and core research priorities, however, they lacks processes with can link them to funding or connect them with their students.

# **Product Overview**

## **Product Perspective**

This product is affiliated with the University of Louisville. The university helped developed research goals, policies, and procedures and also provided and oversight of activities, scholarships, and for the development of the research ideas. The Office of Research and Innovation is responsible for all the research-related portion of the university and accepts proposal from multiple departments such as business, speed school, arts & science, medicine, school of law, etc. The university serves as a measure to provide this product resources and funding for its stakeholders. This product also stimulates the partnerships of the business industry and the louisville community.

## [**Assumptions and Dependencies**](#_35nkun2)

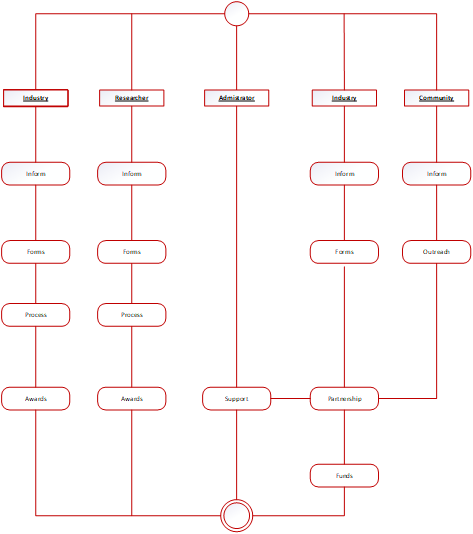
* Changing payment systems could make certain cards become incompatible resulting in a loss of donations
* A change in emphasis from one of the main points (student, industry, community, researchers) to another point(s). such a change would alter the entire vision of the web page going forward
* The mobile market is large, if we were planning support for one browser, but the consumer browser of choice changes to one we did not support we could lose potential funding
* If we were expecting our customers to use one browser and they choose a different, non-supported browser, it could affect formatting, usability, and readability
* News and announcements are all dependent on people consistently updating them, if they are not updated properly users could miss important information
* Security is an important topic, if we are expecting to attain a particular level of security but we cannot meet the standard we are putting our users information at risk
* Error handling is all dependent on errors being identified and fixed on the back end, if we cannot identify an error before an end user experiences it we could lose funding opportunities

# [**Product Features**](#_35nkun2)

* Easy navigation for the user’s convenience
* Trendy, updated visual design to attract new users
* Contrasting color scheme, including brand colors, to make it easy on the user’s eyes
* Relevant content to keep the website fresh
* Visible links for iRIS, social media, and other portals
* News and announcements
* Events
* Link to donate for users that want to make quick contributions
* Tab for students (undergraduate and graduate)
* Tab for industry members
* Tab for community members
* Tab for centers & institutes broken up into subcategories that are easy for the user to understand
* Mobile compatibility so users can have access on-the-go
* Information architecture to integrate users, content, and context
* Formatted content to make scanning easy
* Error handling so users do not have to experience bugs from the code-level
* Usable, interactive forms to avoid off-site requirements
* Security so user data is safe
* Interactivity area for communication between the main audiences
* Increased searchability for web searching
* Easily accessible contact information for expedience
* Coherent vibe as the user moves between the audiences
* Footer features for populer links
* Frequently asked questions
* Infographics to easily explain complicated ideas

# [**Other Product Requirements**](#_35nkun2)

* Software/web integration requirements
* Email EVPRI service account (newsletter)
* Forms
* Compliance and Policies
* Preservation of required links (iRIS)
* Louisville Brand Standards
* Coherent Navigation and Organization of content
* Search Bar
* Contact Information
* Correct terminology for expressing specific content

**As-Is Process Model**

An activity diagram portrays the primary activities and the relationships among the activities in a process. The process to the right shows how the Office of Research and Innovation currently operates. The first circle is known as the initial node. It represents the beginning of a set of actions or activities. In between the initial node and the first set of rectangles represent series object nodes which represent the stakeholders. The lines extending from object nodes are known as the control flow. A control flow shows the sequence of execution through the process. The circular edged rectangles are known as action nodes. They portray a discrete unit of work and are named to describe their behavior. Lastly, is the final rectangular circle that is known as the final activity node. It terminates the activity.

**To-be Process Model**

The To-be process model focuses on how the new system will operate. The Office of Research and Innovation To-be process model is the same as the As-is process model because the basic operation of the office will remain the same. A possible solution will make this process more efficient.

**Agile Stories**

|  |  |
| --- | --- |
| **ID: 01**  **Title: Steve** | **As a** **researcher**  **I want to** to have access for funding programs, analytic data, and journal access,  **So that** I can improve and complete my research |
| **ID: 02**  **Title: Bobby** | **As a student**  **I want to** allocate resources including newsletters, help center, and research report  **So that** I can use them for academic studies. |
| **ID: 03**  **Title: Ashley** | **As an administrator**  **I want to** be able to modify, design, and manage the website  **So that** I can allocate information to effectively use them for the University |
| **ID: 04**  **Title: Mark** | **As an industry**  **I want to** be able to locate interrelated information pertaining to the industry  **So that** I can acquire students to a job-related industry that can benefit both the students and the industry. |

Team Charter

**Project Title**: The Research & Innovation Project

**Project Sponsor**: Robert Barker **Date Prepared**\_\_\_\_1/21/2020\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Project Customer**: Office of Research & Innovation\_\_\_















Signatures:

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Hasan Mohammad

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Durian Spagnuolo

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Queena Lin

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dean Stitt

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Trey Sledge

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Isaac Mills