**Online Crowd-Funding System**

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# **Brief Description**

## **Problem Context**

Nepal's innovation ecosystem faces a pivotal challenge in the absence of a dedicated platform connecting creators with potential backers. Aspiring entrepreneurs struggle to showcase their inventive ideas, hindering their access to necessary funds. Simultaneously, investors lack a streamlined channel to discover and support promising projects. The conventional funding process is cumbersome, lacking efficiency and accessibility. This disconnect curtails the growth of Nepal's creative economy and hinders the collaboration essential for transformative ventures. Addressing these calls for an intuitive online crowdfunding platform, that bridges this gap, enabling creators to access funds while investors discover and nurture innovation.

Despite being a nation rich with vibrant community of entrepreneurs, social activists, and creative minds, many promising ideas and projects face a common hurdle which is access to adequate funding. These project fails before the start of the innovation as traditional financial mediums in Nepal often have stringent criteria which makes it challenging and difficult for innovations and ideas to secure necessary funds to thrive.

Moreover, the geographical barriers, diversity and dispersed population also poses additional challenges for creators to reach broader audience for raising capital. Many innovative plans and projects struggle to gain visibility beyond their small and immediate surroundings. In this modern era of technology, a good crowd funding platform can help individual creators or organizations to tap into a deep and vast network of investors or potential backers.

## **Rationale**

The most prioritized reason of the study done on the landscape of fundraising and financial support to projects is to examine the accessibility of an emerging project to its capital. Many innovative and creative projects fail to make it to the market due to lack of funds to raise the scale of production. The only existence of traditional fundraising methods will not be enough to gain the attraction of the wider or boarder audience. A good platform will eventually assist creators to showcase and bring their ideas to the wider audience and market with many investors willing to invest their funds for the development or production of innovative and creative projects. This study attempts to integrate modern technology and tools in the field where there are only traditional methods to gain access to the funds and audience for the creators. Hence, a modern crowdfunding platform for creators to showcase their creativity and investors to back the creators with funds.

## **Target Users**

The target users for the online crowdfunding platform projects basically includes two kinds of users: Creators and Backer. A creator refers to the users who have certain ideas or creative projects that will be showcased in the crowdfunding platforms to gain attention of the backers or investors. Another target user will be the backer who will have the ability to invest in the ideas or project created by the creators to gain valuable rewards where the funding and completion of the project will be the main objectives of both kind of users to be fulfilled. In general, a Creator user type will seek for the fund need for their project to thrive and a backer will view different ideas or projects available in the platform and invest or fund one if the backers like the overall impacts of the project.

## **Potential Benefits**

The implementation of the online crowdfunding platform comes with numerous benefits as it directly implies on the economic status of certain parties. Involved parties can profit with various tangible and intangible benefits such as:

### ***Tangible Benefits***

Access to Fund

Creators with effective ideas that can change or disrupt the market can gain valuable access to a wider pool of potential investors which increases the chances of securing the capital needed for their project. This overcomes the traditional channels where only a limited audience can be reached.

Global Recognition

As the platform is of online nature, it can reach the global market or audience eradicating the geographical barriers that can interrupt the visibility of project. The online platforms will provide different sources of funding and foster a more inclusive and supportive base for projects.

Cost Effective Capital

When compared to traditional fundraising techniques, the online crowdfunding platform will have lower overhead costs, making the fundraising process more efficient and maximize the funds to be invested in the project.

### ***Intangible benefits***

Validation and Market Testing

A successful campaign on an online crowdfunding platform can provide valuable information regarding the validation of specific project ideas and categories in the market. The platform will help creators to know if their ideas or project can outstand the projects already available in market.

Community Engagement

When available to the global community, the crowdfunding platform helps to create a sensible community around the project with investors being emotionally invested in the success of projects which enhances the project support, long-term engagement and loyalty and helps to build network of passionate investors.

Brand exposure and marketing

With successful campaigns on online crowdfunding platforms, it can generate attention of markets to the project as it will build brand awareness and reputation, attractive attentions from public and potential backers.

Empowerment

These kinds of platforms can help empower individuals and organizations to pursue their goals within the reach of the internet. It will help to democratize the access to funding, by levelling the playing field for diverse projects and creators.

# **Project Objectives**

## **Aim**

The primary goal of this platform is to establish an inclusive and dynamic online crowdfunding platform that fosters innovation, fuels entrepreneurship, and accelerates the growth of Nepal's creative economy. By providing creators with a dedicated space to showcase their ideas and by connecting them with interested investors, the platform aims to democratize the funding process and propel visionary concepts towards tangible success.

## **Objectives**

* Empower Startups: Facilitate startup ventures in Nepal by providing them with a user-friendly platform to present their innovative ideas and secure the necessary funding for launch and growth.
* Enhance Access to Funding: Eliminate traditional barriers to funding by offering a streamlined online channel that allows creators to present their projects directly to a wide range of potential backers.
* Boost Creativity: Encourage creators to test the market with their ideas by offering a space where they can gather feedback, refine their concepts, and refine their pitches to attract investors.
* Connect Creators and Investors: Forge connections between creators and investors from diverse backgrounds, fostering an ecosystem of collaboration and support that enhances the potential for success.
* Amplify Entrepreneurial Network: Cultivate a vibrant community where creators, investors, and stakeholders can interact, share insights, and contribute to the collective growth of Nepal's entrepreneurial landscape.
* Facilitate Informed Decision-Making: Provide investors with comprehensive project details, enabling them to make informed investment choices based on well-documented business pitches.
* Promote Economic Growth: Contribute to the expansion of Nepal's creative economy by nurturing innovation, generating employment opportunities, and fostering a culture of entrepreneurship.
* Catalyze Social Impact: Support projects that have the potential to make positive social changes by facilitating funding and exposure, aligning with the broader developmental goals of Nepal.
* Encourage Cross-Industry Collaboration: Create a platform that spans various sectors, allowing creators and investors from technology, art, design, and other domains to come together for mutual growth.
* Continuous Enhancement: Evolve the platform over time by incorporating user feedback and industry best practices, ensuring that this platform remains a relevant and effective catalyst for innovation and entrepreneurship in Nepal.

## **Deliverables**

* Fully Functional Crowdfunding Platform: Develop and deploy a user-friendly online crowdfunding platform accessible to creators and investors.
* User Profiles and Authentication System: Implement a secure user registration and authentication system for creators and investors, ensuring privacy and data protection.
* Project Creation Interface: Design an intuitive project creation interface allowing creators to present their ideas, showcase prototypes, and set funding goals.
* Project Discovery and Browsing: Develop a user-friendly project browsing and discovery system that allows investors to explore a diverse range of creative ideas.
* Project Funding Mechanism: Create a secure and transparent funding mechanism that enables backers to contribute funds to selected projects.
* Payment Gateway Integration: Integrate a secure payment gateway to facilitate seamless financial transactions between backers and creators.
* Communication and Feedback Tools: Incorporate features such as messaging and comments to enable interaction between creators and backers, fostering engagement and feedback.
* Project Rating and Review System: Implement a mechanism for backers to rate and review projects they've supported, providing valuable insights for future investors.
* Creator-Backer Connection: Design tools for creators to communicate with their backers, providing updates on project progress and fostering a sense of involvement.
* Dashboard and Analytics: Develop personalized dashboards for creators and investors, offering insights into project performance, funding progress, and engagement metrics.
* Responsive Design: Ensure the platform is accessible and user-friendly across various devices, including desktops, tablets, and smartphones.
* Legal and Documentation: Provide necessary legal documentation and terms of use for creators, backers, and the platform itself.
* Testing and Quality Assurance: Conduct rigorous testing to identify and rectify any bugs, glitches, or security vulnerabilities.
* Launch and Deployment: Deploy the fully functional platform on a secure server, making it accessible to the public.
* By delivering these outputs, the project aims to create a comprehensive crowdfunding platform that caters to the specific needs of Nepal's entrepreneurial and creative communities, fostering innovation, collaboration, and economic growth.

## **Scope**

The system attempts to impact overall economic dynamics of the nation by evaluating and evolving the growth of projects and ideas that can disrupt the global and local market with its introduction. It elevates and encourages both creators and backers to work and create a community with support of each other to elevate their economic status and recognition of projects in the market where a boarder connection of network for both type of users can be beneficial even in the future moves. The platform will establish an inclusive and dynamic online crowdfunding platform that fosters innovation, fuels entrepreneurship, and accelerates the growth of Nepal's creative economy.

# **Resources required for proposal.**

To initialize the project, it is important to determine the requirements essential for it. Some of the different basic hardware and software requirements discovered for the project are:

## Hardware

1. RAM: 8.00GB

2. Processor: Intel® Core™ i5

3. Screen/Monitor

4. I/O Devices

5. Router (RJ45 / Wireless Fidelity (Wi-Fi))

## Software

1. Operating System: 64-bit Operating System, x64-based processor

2. Edition: Windows 10 Pro

3. Database: MongoDB instance

4. Platform: MEAN Stack

5. Framework: HTML, CSS, Typescript, JavaScript, Angular, Next JS, Node jS

Web Browser: Google Chrome /Brave/Safari

## Documentation

1. Microsoft Word

2. Microsoft Excel

3. Microsoft Visio

4. Microsoft Power Point

5. Microsoft Project

## **Access to information/expertise**

Information for this project can be acquired through various primary and secondary approaches. The main source of information to be gathered is from journal articles accessed from research papers through Google Scholar. Apart of it, consultation from expert supervisors and lecturer’s guidance is also essential for accurate access to information. There are many online resources such as tutorial websites and videos in different media platforms that can be useful for guiding throughout Project Specification Form (PSF) - NP000611 the project. Therefore, such expertise can support each stage of project development including documentation, database formation, web development and even acquiring information from questionnaire surveys.

## **User involvement**

Users can be involved in any stage of a project’s progress. Firstly, with project proposal and specification, involvement of lecturers and supervisors take place for confirmation of project aim and objectives. Then different users will get the opportunity to fill questionnaire surveys to provide their views for data gathering in either online or paper platform that will be analyzed and generate results for further stages of project. After the completion of a project, the different users involved can be categorized as casual users, novice users and administrator. It includes unregistered customers as novice users that access reviews on novels and registered users as casual users that can even post their review comments whereas administrator manages the overall information of the application.

# **Academic research and techniques being learned.**

## **Books**

1. Name: Crowdfunding Confidential: Raise Money for You and Your Cause

Author: Beverly Schwartz & Jonathan M. Tisch

Published: 2015

Publisher: American Management Association

1. Name: Kickstarter For Dummies

Author: Aimee Cebulski

Published: 2013

Publisher: For Dummies

1. Name: Crowdfunding: The Corporate Era

Author: Ruth E. Hedges

Published: 2018

Publisher: Select Books

1. Name: Crowdfunding: A Guide to Raising Capital on the Internet

Author: Steven Dresner

Published: 2014

Publisher: Bloomberg Press

1. Name: The Crowdfunding Revolution: How to Raise Venture Capital Using social media

Author: Kevin Lawton and Dan Marom

Published: 2010

Publisher: McGraw-Hill

1. Name: Equity Crowdfunding for Investors: A Guide to Risks, Returns, Regulations, Funding Portals, Due Diligence, and Deal Terms

Author: David M. Freedman and Matthew R. Nutting

Published: 2015

Publisher: Wiley

1. Name: The Crowdfunding Handbook: Raise Money for Your Small Business or Start-Up with Equity Funding Portals

Author: Cliff Ennico

Published: 2016

Publisher: Allworth Press

1. Name: Crowdfunding: The Corporate Era

Author: Ruth E. Hedges

Published: 2018

Publisher: select Books

1. Name: The Crowdsource Ess: Get Smart, Get Funded, and Kickstart Your Next Big Idea

Author: Alex Daly

Published: 2017

Publisher: PublicAffairs

1. Name: Crowdfunding Real Estate: The Next Generation of Property Investing

Author: Adam Gower

Published: 2018

Publisher: Advantage Media Group

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# **System Development Plan**

System Development Plan is an essential step for planning software development including methods to be used, approach to be followed and tools to monitor. It becomes a responsibility to address and strategize the requirements for safety and security of project development. The most important factor to consider is to define the system development methodology to be chosen for carrying out the project.

## **System Development Methodology**

A standard process mapped in an organization to implement all the necessary steps to analyze, design, develop, implement and maintain an Information System. It is a methodology that helps to systematically organize the best methods and mediums to develop and implement a system. This includes a description of minute processes that need to be addressed during the development and implementation process of system. Different sorts of activities such as planning, examining, analyzing the system is showcased in system development methodologies. These methodologies tend to enhance the efficiency of the system itself. There are different kinds of System Development Methodologies such as Agile methodology, Spiral methodology, Waterfall methodology, Rapid Application Development methodology, Extreme Programming and so on.

### ***Selection of Waterfall Methodology as System Development Methodology***

After analyzing the requirements and nature of Online Crowdfunding platform project, along with the comparison among the above three suitable methods, the preferred methodology or this project is selected to be Waterfall Methodology as it aligns with the nature of the project. Selection of this methodology will be beneficial over the selection of other methodology as it depicts the behavior required for the development of the project. Both Agile and DevOps methodologies would have higher impact if the project of Online Crowdfunding System had involved multiple teams working on it. But as the project is being developed with minimal human resources, Waterfall methodology will be more suitable for this project.

### ***Waterfall Methodology***

Waterfall Methodology refers to a sequential development methodology which as the name suggests flows like a waterfall through different phases of the project. These phases may include analyzation, design, development and testing along with others where one phase will be wrapped up to move to the upcoming phase. It is said that the Waterfall Methodology suits the projects which have clear requirements as it follows the adage of “measure twice, cut once”. The amount and quality of work done in each phase are believed to be two major reasons for successful implementation of this methodology. The Waterfall methodology provides more accurate estimation of schedule and depicts great time management as the majority if the research is done during the initiation stage of the implementation.

#### **Reason to Choose Waterfall Methodology upon other Methodology for this Online Crowdfunding system are explained below:**

Clear Requirements

The waterfall methodology is said to be effective when a project has a well-defined and clear requirement from the initial stage. This is due to the reason that the methodology follows a sequential process where initiation of each later phase depends upon the completion of the previous phase.

Predictable Timeline:

This methodology defines a structure and predictable timeline which assists in planning and management of system or project in later stages. This will help developers to create a clear roadmap of the project.

Comprehensive Documentation:

Waterfall methodology produces a comprehensive document of the project which can be very beneficial for the future reference, audits, or compliance requirements as it emphasizes strongly on documentation of each stage of the project.

Less Complex Project Management

It is less complex in terms of management of project as compared to other methodologies like Agile which consist for frequent iterations and integrations. This can be very beneficial to projects which have well-defined requirements from the beginning.

Limited Involvement of Clients

Waterfall methodology is suitable for projects which require very little amount of client involvement during the design and development process of the project. The client inputs are considered during the initial stages of the project where they are analyzed to generate clear scope and requirements of project. This will help to reduce the occurrence of major changes during the development phase of the project.

#### **Different Phases of Waterfall Methodology**

Requirement Gathering and Analysis

In the initial phase of the waterfall methodology, requirement gathering, and analysis is taken into consideration through stakeholder interactions. The major goal of this phase is to identify the explicit and implicit requirements, collect views on the required features, preferences and functionality to be involved in the overall system. This phase helps to prevent costly modifications in later development phases by ensuring precision and detailed requirements gathering ultimately leading to well-structured blueprint of the system from beginning.

Design Phase

The design phase in the Waterfall Methodology is implemented for creation of a comprehensive system blueprint which consists of user interfaces, structure of data and architecture of system to be developed. Various parties involved in the project collaborated to make decisions regarding the design and implementation of data flows and architecture for efficient data management and development of the system. In this stage, creation of User Interfaces through wireframes and other designing techniques are done to design significant norms for an organized approach to software development.

Implementation Phase

This phase generally refers to development w=phase where the coding step is done through involvement of translating specifications of the design into a working code through programming, assembling, and compiling. The conceptual designs are converted into executable systems through coding. The conversion from the design and wireframes of the system into machine readable instructions is done through compilation and create an operational software system.

Testing Phase

After the software development process, the waterfall methodology moves on to the testing phase which involves extensive testing to identify bugs or any lacking in the functionality, readability and efficiency of the system that is developed. Different kinds of testing such as unit testing, integration testing and system testing are done to verify the developed system meets the requirements of the user. The ultimate objective of this stage is to identify and eradicate the anomalies or deviations from intended functionality, ensuring the system is ready to be deployed.

Deployment Phase

This phase in waterfall methodology aims to produce a final product to the user or customer, which involves the installation, setup, and operationalization. In this phase, user needs are set up though customization, correct configuration is ensured through installation, and operation fixes problems and provides informed information and instruction regarding the operation of system. Once the system is deployed, the waterfall model is ready to move on to the maintenance phase ensuring the system produces values and aligns with the user expectation and standards.

Maintenance phase

The maintenance phase in the waterfall methodology focusses on regular system checkups, updates and dependencies update. This phase tends to accept any issues or bugs reported by the users in order to facilitate effective interaction with users and development team. Any kind of issues and bugs are fixed and solved promptly to bring stabilization and seamless operation of the system. The maintenance activity is influenced heavily through the feedback received from the end users.

# **Evaluation and Test Plan**

## **Success Criteria**

The online crowdfunding system should allow creators to showcase their ideas or projects efficiently with required descriptions and media giving brief about their plans. Creators should be able to update tracks and planning according to schedules of their projects. Backers should be able to browse through the projects created and showcased by the creators where they can give reviews and feedback regarding the project and invest into the project if their attention is grabbed by the project. Backers should be able to fund the project with certain payment methods within the system and view tracks of all the projects they invested in along with collaboration and communication between the investor and creators.

## **Testing**

While developing an application, there are numerous testing approaches that may be employed. Following the completion of the research, a testing dataset obtained from web resources of existing novel reviews can be utilized to calculate and assess sentiments. Some of the types that have been selected for usage in the new review web application using opinion mining are given below.

### **Unit Testing**

Individual software components of an application or system are tested as part of unit testing. It verifies that each component of the application is functioning properly. A function, method, process, module, or object might be considered a unit or component. This strategy can be used to test application components such as logging in to the system, signing up for the system, showcasing projects, etc., together with check validations used or validations to be used. to cut down on errors

### **Integration Testing**

Integration testing occurs when many application modules are merged and tested as a group. It reveals flaws in the integration of components. After the first two units have been thoroughly tested, the web application can undergo integration testing. For example, when a user signs up for Project Specification Form (PSF) - NP000611, only that user is able to login to the system since the user information is saved in the database, allowing users to continue with their activities automatically.

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