**Feasibility Study**

**Revision History:**

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| 1 | 03-10-2019 | Omkar Metri | System Objectives | Services provided | Maanvi Nunna (Team co-ordinator) |
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1. **PROBLEM STATEMENT**

The Conference Management System is an online website which provides information regarding the conferences and journals happening all over the world along with the courses offered by various universities. The details of the conference, recommendations, subscription alerts, analytics and technology news feed will be made available to users through the website.

1. **EXECUTIVE SUMMARY**

ConfHub is a conference management system that works as an aggregator service, listing out all details about conferences occurring across the globe with many additional features like review system, tech news for people interested in the same research. The existing conference management systems though look like have most of the features mentioned already, ConfHub’s effort is to get all the features into one place and give the users a very refreshing and seamless experience. ConfHub also provides an added advantage to the organizers where we remove the hassle of manual entry of the conferences happening across the global and make it automated, a functionality that is not offered by the existing systems.

There are many services that make us stand out from the existing systems like conference listing, filtering based on location, date and history, information regarding the courses offered by the universities, option of subscriptions and tech news feed for user experience. Finally, devising our market strategy and financial projection, we aim to make ConfHub a very easy to use and rich graphical interface where users can access the information they want in a very organized manner all the time.

1. **CURRENT SYSTEMS AND PROCESSES**

**3.1 CURRENT OPERATIONS**

The existing conference management systems have various features

1. Filter based on region/month/topic/popularity
2. Link to the official website of the conference
3. Deadline for abstract/paper proposal
4. Point of contact for enquiries regarding a specific conference (usually this is the person who added the event to the conference management system)
5. Subscription - to receive periodic newsletters with information about upcoming events
6. Option of checking hotels/cars in the area where you are attending the conference partnered with other companies (<https://www.clocate.com/>)
7. Concept of featured conferences and exhibition
8. Choice of viewing the website in another language (using Google Translate) since they cover global conferences
9. Blog feature to enhance user knowledge about the conferences at specific locations which is used for promoting the conference, why people should submit to their conference
10. FAQ page regarding organizers or conferences or subscriptions
11. Stats of a conference ( helps organizers to see who’s been viewing, showing interest to join the conference which will them to keep track of their audience) ([https://theconferencealerts.com](https://theconferencealerts.com/))
12. Option to connect and discuss about a conference with researchers and colleagues from around the world in all scientific disciplines
13. Place to display Research Grants that are being provided by the conference → there is not much information except for the title and the location ([https://theconferencealerts.com](https://theconferencealerts.com/))

**3.2 PHYSICAL ENVIRONMENT**

1. Manual entry of the conference details by an organizer (used by <https://www.allconferencealert.com>,<https://www.papercrowd.com/>).
2. Some of them require the event address to have an account. Few have free access, making it hard to define which conferences are credible and which aren’t.
3. Most of the conference listing systems are websites, i.e., less interactive.

**3.3 USER ORGANIZATION**

Conference management systems are used by

1. Organizers of a research conference: To invite a wider audience so that they can use this site to promote their conference.
2. Researchers around the globe can have all the conferences sorted according to their preference and decide upon publication and the conferences, they should attend.
3. Other audience like students and even some researchers who want to keep up with the latest technological developments in their fields can use this website to see all the conferences and possibly the papers that were submitted
4. A place for volunteers and other contributors to find the conferences where they would like to work.
5. Marketplace for sponsors and advertisements
6. **SYSTEM OBJECTIVES**

The Conference Management System is an online website which provides information regarding the conferences and journals happening all over the world along with the courses offered by various universities. The details of the conference, recommendations, subscription alerts, analytics and technology news feed will be made available to users through the website. The scope of the conference management process is providing information of all the events around the world.

**4.1 DESCRIPTION OF PRODUCTS AND SERVICES**

Team 5 is considering a move to create and provide an online website which has the information related to the events across the world. Until now, the user has to search (Google, Bing, Yahoo) for the event based on different aspects, i.e., location, date, area of interest and it has been observed that a lot of time is spent on getting hold of the most suitable conference. Hence, Team 5 is providing online platform with the features of filtering based on various fields, courses offered by various universities, subscription alerts and tech news feed.

**SERVICES PROVIDED**

1. ConfHub → information of the conferences, journal publications happening across the globe and filtering of the conferences based on location, domain and date
2. University Courses → courses offered by various universities across the world
3. Analytics → based on H-index of the conferences
4. Subscription → receive deadline alerts and information related to the event.
5. Tech News Feed → short description about the current technology and redirection links.

**SERVICES NOT PROVIDED**

1. Registration and payment: for conferences, journal publications

**4.2 HIGH LEVEL BLOCK DIAGRAM SHOWING THE SOLUTION**

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**4.3 TARGETED CUSTOMERS AND BENEFITS**

**Targeted customers:** The project targets the enthusiasts researchers. The following are a set of target customers:

1. Academicians
2. Faculty members
3. Students
4. Research Scholars
5. Industry participants
6. Listeners

**Benefits:**

1. Finding the conference of the user's choice is just a search away with the ease of filtering the conferences based on location, date and domain. As a consequence, there is no need of going through various websites. The necessary information about an event, conference is made available in one place.
2. Information regarding the courses offered by the universities across the world
3. Recommendation based on the H-index factor of the conferences
4. Time and cost friendly
5. Tech news feed regarding the current technology

**4.4 TECHNOLOGY CONSIDERATIONS**

Upgraded technological capability will be required from which the target group can make the best use of the services. Customers demand a simple, user-friendly and time efficient way by which they can look for the right conference/journal and so on.

On the application front, this project will require building a progressive web app with a responsive front-end. Apart from that periodic scraping of multiple websites will also be required. Facilities will have to be built for periodic scraping tasks (including cleaning and reformatting the data and storing into the database), fetching the conference information from the database and displaying it on user interface to the users with the facility of filtering and subscription, i.e., sending push notifications for conference alerts.

Overall, we will make use of existing open source technologies (web framework, database, front-end framework, styling framework, scraping and XML parsing libraries, automated web browsing libraries) and using them to create a responsive and efficient web application.

**SKILLS REQUIRED:**

1. Scripting language, i.e., python
2. Databases, i.e., SQLite
3. Templates, i.e., HTML, CSS, JS, AJAX
4. Knowledge of Flask
5. Amazon AWS cloud
6. Task Scheduler, i.e., Cronjob
7. **PRODUCT/SERVICE MARKETPLACE**

The need for conference website has been thriving in recent years. The existing conference websites in the marketplace focus on conference and event registrations (websites providing information regarding all the conferences being organised along with registrations). Some of them are [www.premc.org](http://www.premc.org) , [www.techmeme.com/events](https://www.techmeme.com/events). There are multiple conference websites that are domain/subject specific that are dedicated to a specific conference held or conferences belonging to a category/subject (examples: a2ic and siggraph). Some websites also provide the user with upcoming conferences and filtering options based on location and dates of the conference (examples: ‘[www.allconferences.com](http://www.allconferences.com)’, ‘[www.techconferences.co/](https://techconferences.co/)’), but ultimately registrations for the event are done on the official website itself. Hence, the top competitors are PremC organization, TechMe events, All Conferences & Tech Conferences which have similar notion to our services.

**WHAT MAKES THE PRODUCT DIFFERENT?**

1. No manual entry of the conferences thereby reducing the human effort and automating the process.
2. Filtering based on various fields, i.e., date, location and domain.
3. Our services through the website provides information about the courses offered by the universities.
4. Features like subscription and recommendation of the conferences/events based on H-index of the conferences.
5. Tech news feed service to give information regarding the current tech and inventions

1. **MARKETING STRATEGY**

Conference Portal provides a unique service to tech enthusiasts which includes people from different segments of the society such as IT professionals, people enrolled in educational courses, people working for the academia in CS-oriented fields, hobbyist software developers and others. These set of user segments are the target customers for the product.

Given that our target audience is strongly centred by the nature of our project, we can leverage it to create a concentrated marketing strategy. We can advertise our product around a set of specified topics where people interested in CS-oriented conferences are likely to be active, i.e., forums, groups and blogs around popular programming languages, popular topics (eg. ML, web dev etc) and so on.

Second target would be forums and groups around CS job markets, engineering students, career advice portals and so on. The third area to target would be to use paid ad spaces on such websites and other avenues where our target audience are likely to be very active. Another way is to get early feedback and suggestions from our end user and fine tune the features back-log at the earliest stage possible to achieve greater efficiency.

**MARKET RESEARCH:**

Although there are many web portals which are in the business of aggregating the information of conferences happening around the world and allowing users to filter based on location, date and so on. The primary element what makes our service different is our focus on the participants’ experience at the conference, facility with recommending conferences based on the H-index which would allow new participants to make better choices if they had to choose among multiple concurrent workshops.

Extending from the previous point, unlike other similar services in the market which have a very formal and academic approach to listing out the information about conferences, we will use a graphically rich medium for presenting the information about the conferences scheduled at different places and at different times, which would be more user-friendly and also richer in the different kinds of information provided. We will use aggregations based on location, domain to give more meaningful information to the users than just laying out the conference information as it is on the official websites.

1. **ORGANIZATION AND STAFFING**

The Conference Management System will not affect the organizational structure of the company. There are, however, several staffing additions required for the maintenance and enhancements after deployment of the website. All of these positions will be a part of software development (Dev) and information technology operations (Ops) team. In addition, marketing team will play a major role.

**Staffing Position #1:** Project Manager → will handle the assignment of the tasks to the developers and will be working closely with the marketing team.

**Staffing Position #2:** Developers → will handle the developing and enhancement of the website

**Staffing Position #3:** Marketing Team (Marketing team manager) → will lead marketing staff in identifying target customer groups/markets and conducting online advertising/marketing efforts to maximize traffic to the website.

1. **SCHEDULE**

The Conference Management System is expected to take three months from project approval to

launch of the website. The major part of the project is scraping and analytics.

The following is a high level schedule of some significant milestones for this initiative:

Aug 27, 2019: Project idea discussion and project approval

Aug 30, 2019: Project kickoff meeting

Sep 03, 2019: Feasibility study

Sep 04-11, 2019: Review of the feasibility study, revisions and requirements

Oct 18, 2019: Complete website design

Nov 01, 2019: Complete testing of website

Nov 12, 2019: Review meeting with the sponsor (Prof. Palchandra)

Nov 24, 2019: Enhancements, Hosting, handing over of the code and documentation

**Note:** Upon approval of this project a detailed schedule will be created by the assigned project

team to include all tasks and deliverables.

1. **FINANCIAL PROJECTIONS**

The financial projections for hosting the portal are highlighted in the table below. These figures

account for additional staffing requirements, training, cloud charges, sales and marketing.

The assumptions for these projections are as follows:

* All milestones are performed in accordance with the schedule
* All transactions are closed yearly with no carry-over to subsequent years

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| **Measure** | **Year 1** | **Year 2** |
| Planning / UX | $24,000 | $48,000 |
| Additional staffing costs | $160,000 | $170,000 |
| Training the staff | $40,000 | $50,000 |
| Amazon AWS cloud | $20,000 | $30,000 |
| Sales and Marketing | $50,000 | $100,000 |
| **Total Cost** | $294,000 | $398,000 |
| **Cash inflow** | $150,000 | $500,000 |

1. **ISSUES**
2. A large part of the project is scraping the websites to get information about the events which is not an easy task as there is always the risk of getting blocked by the website since it might be against their terms and conditions.
3. The website might have strict rate limits and scraping in specific desired format might also be an issue.
4. Deciding on software which might best suit the requirements for the development.
5. Scalability and resource usage limitation on the database servers might depend on the operating system and hardware configurations.
6. Database security has always been an issue.
7. **ASSUMPTIONS AND CONSTRAINTS**.
8. System would operate until conferences occur at various geographical locations.
9. Scraping data from different websites yields data in different formats.
10. Interaction with transaction gateways for monthly/yearly subscriptions assumed to be legitimate.
11. Web site hosted on web hosting service providers with monthly/annual pricing plans.
12. Make sure to not violate the Terms and Conditions of other websites from which data is scraped.
13. Assumed web host to handle requests during peak loads i.e. scaling.
14. **ALTERNATIVES**

**Alternative 1:** Maintain the status quo → Conferences are announced in announcements or notifications. Interested students can enroll for the conferences by registering through the registration link.

i. Benefits:

1. Capability built into PESU app. All students have access to it.
2. Notification capability provided.
3. Registration through click of a button.

ii. Risk:

1. External Conference details not available.
2. No search and sort capability for interested topics or dates.
3. No blog and group discussions regarding conferences.
4. Only limited students who are interested can enrol and the rest have to wait until their interested topic.

**Alternative 2:** Portal with just links to conference portals

i. Benefits:

1. People can just view different conferences happening around the world without actually going through each website individually and saves time and creates awareness about external conferences.

ii. Risk:

1. Not user friendly users had to jump from one website to another.

2. Not intuitive.

3. Not able to register from the portal.

4. Too much manual efforts required to maintain the portal not scalable.

1. **FINDINGS AND RECOMMENDATION**

The findings of this feasibility study show that this initiative will be highly beneficial to the organization. Key findings are as follows:

**13.1 PROJECT OBJECTIVES**

1. Issues concerning: development and implementation
   1. Scalability and flexibility: Since, AWS cloud follows “PAY AS YOU USE” model, we have decided to host it on the single server of T1.xlarge
   2. The presence of single server raises an issue of response time, i.e., it can handle only few requests at a moment
   3. Code reuse → Programming interfaces of present-day languages are very sophisticated and are equipped with huge library functions. So, to bring the cost down of end product, the organization prefers to reuse the code, which was created earlier for some other software or is available under GNU license. There are huge issues faced by programmers for compatibility checks and deciding how much code to reuse.
   4. Version Management - Every time a new software is issued to the customer, developers have to maintain version and configuration related documentation. This documentation needs to be highly accurate, available on time and maintenance issue.
2. Results of research on hardware and software alternatives, technology, marketing, financial
3. Technology:
4. Use of existing technology which will lower the project risks and reduce the development and maintenance cost
5. Developing and updating of DB can be done by the development team without much problems and any technical problems will be handled by the development team
6. According to sources, Flask (python based web framework), ASP.NET, NodeJS, AngularJS are the trending technologies for website development.
7. Marketing:
8. Advertisement of product on a set of specified topics where people interested in CS-oriented conferences are likely to be active, i.e., forums, groups and blogs
9. Open source projects and tools which will inform about the product on Slack channels, Discord groups and others.
10. Twitter and Instagram are other places where we can build a community around our product and use relevant hashtags to create a campaign to inform about the product

c. Organizational:

1. Minimal addition to staffing
2. No changes to organizational structure
3. Developers
4. Cloud experts
5. Sales and marketing staff

d. Financial:

1. No profit is expected in the development and testing phase
2. Assumed to hit the target and attract 10% of target customers for the first year and 5% for the subsequent years
3. Significant risk factors:
   1. Scraping from websites without actually knowing if its permissible
   2. Cloud Security Risk
   3. Database security and Backup
   4. Scalability and resource usage limitation
4. Feasibility recommendations: The requirements and design of the solution for the project is outlined in a way to be finished within the estimated time. Hence the project is feasible, in terms of both implementation and cost.

**PROJECT PLAN**

1. **Deliverables of the Project**
   * A website accessible by the users by logging in and will have all the functionalities mentioned under system objective section of the Feasibility Report.
2. **Process Model which you intend to follow**
   * Agile - Scrum
3. **Identification of the upstream-downstream partners needed for the product**
4. **Resources needed for the project/product**
   * Developers to build the website
   * Staff to maintain it
   * Tech stack is finalized according to the current trends in the market and ease of development and use
5. **How are you organizing your team in the project**
   * Intending to divide the functionalities of the project into smaller modules/microservices which can be split across the members
   * The design mentioned will be followed by the members
6. **Standards-Guidelines-Procedures**
   * Coding with proper conventions and variable naming so that the other team members do not face problems in understanding the code whenever necessary.
   * Testing and Validation of code before committing to the code base.
7. **Communication Mechanism**
   * Group meetings on a weekly basis, along with offline/online meetings using mobile or hangouts.
8. **Risks**
   * Scraping from websites without actually knowing if its permissible
   * Cloud Security Risk: Since we are deploying the application on the cloud, it could be vulnerable to security threats. AWS security operates on share responsibility model which means that AWS secures its infrastructure while you have your own security controls in place for the data and applications you deploy and store in the cloud.
9. **Quality Criteria**
   * The app should be browser compatible. i.e. it should run on various browsers
   * Comments and suggestions from the app users
   * ConfHub should be able to include all the conferences, events happening around so that the users don’t miss out on anything. Also, if the user has come with a particular conference or particular domain in mind he should be able to find it.
   * App should be able to handle multiple requests at a time. It shouldn't slow down if the load increases
10. **Work Packages**
11. **Budget and Schedule**

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Nov 12, 2019: Review meeting with the sponsor (Prof. Palchandra)

Nov 29, 2019: Enhancements, Hosting, handing over of the code and documentation

1. **Delivery means**
   * We will be demonstrating on our own laptops**.** Access will be through localhost. The app can be accessed by the users once they sign up.
   * GitHub repo for the code and documentation