

ICT SOLUTION TO SMALL AND MEDIUM SCALE ENTERPRISES IN INDIA FOR EFFECTIVE BUSINESS MANAGEMENT

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Abstract-Most of the Indian engineering college student's innovation and research findings are laid-back in the college database itself as project work. Best innovations from the student and its application are getting stuck in the documentation level. The maximum life span of the project is one year. Even though the innovations are technically considerable to solve the latest industry needs but it is not applied practically. This work is to direct the students innovative ideas and research contribution as solution to identified problems of small and medium scale enterprises via a common platform such that the projectwork of student will have an extended life. Mobile apps are getting developed for multiple purposes in day today life. Developing an app for linking small and medium scale and enterprises request for technical assistance and students of engineering colleges is the first step of this work; follow up of assigned works for fulfilling the requirement is the next challenge. Main objective of this paper is to create and strengthen a path between technical assistance requirement of the industry and knowledge of students.

Keyword: Innovation, Mobile app, Small and medium scale enterprises

I. Introduction

Creative thinking to find solution for real time technical problem is a skill. This skill is getting originated at any instant of an engineer's life. Student pursuing engineering education think simple and bring out tiny ideas for different problem solutions. Majority of the students during their study discuss the idea with the teachers. It then vanishes out from the thought due to other academic works. In other hand curriculum insist each student or a group of students to develop a project work, which in term should be innovative. It is a time consuming problem in which each project has a problem and suggestion to overcome it. Student demonstrate the developed concept in front of evaluating committee and qualities. Big question rise is does the innovative solution of student has life after the evaluation was made? The answer is no, why because every student continues his next level either going to job or higher education or some fixed targets. The innovation lies untouched in the library racks.

India has 4412 engineering colleges out of which 1657637 students have enrolled to pursue engineering degree. Out of which if a sample of 1000000 students are considered they can provide 250000 research innovations per year. Question arise here is if 10% of students innovations is diverted to address small and medium scale enterprises it could be a great assistance for the enterprise. It is clear that app can provide only a direction for solution providers and not the app itself a solution. Multiple attempts by various students for a single request raised by the small and medium scale enterprise are also permitted. Industry and student have different registration login. Apart from introduction this article comprises of literature review, proposed methodology and conclusion.

Literature review

Universities used to make significant investment to encourage research and technological innovations from students. The research knowledge of the University graduates was better than college graduates. This inequality was mainly due to more research opportunities available in the University when compared to college [1]. Economic environment experience dynamic changes and require lot of new innovative ideas. Creativity and innovation were the gateway which developed the ability to face the essential changes needed to sustain the dynamic environment. Innovations include forecasting the needs of a market, alternate services and to possess better control over the cost [2]. A study emphasizes the design thinking as new model of learning for the classroom learning. The findings showed that the teachers were not passive recipients of this new pedagogical tool and have "appropriated" it in multiple unique ways – to suit different purposes, different learning contexts and their different subjects. Also the study explained the need to promote 21st century skills and academic content knowledge was important for student outcomes [3]. The main focus of this proposed paper was to bridge the gap between the creativity, knowledge and the entrepreneurship. It also proposed a suggestion to induce mechanisms to convert knowledge into societal and useful needs [4]. Different aspects of innovation in teaching - learning process and teachers' research work in different countries were described. The teacher and student innovation in different educational systems was encouraged. The propositions of systematic and organizational changes required for quality implementation of innovation in the teaching process and teacher research was discussed [5]. An enhancement of

requirement analysis method found in literatures such that it includes activities to resolve the key elements were discussed. The method had applied in three case studies based on Indonesia situations and concluded the best practice for SMEs [6]. The four major reasons that slowed the SME growth in Asia were mentioned. They are i) lack of finance, ii) lack of comprehensive databases, iii) low level of R&D expenditures, and iv) insufficient use of information technology [7]. Cloud infrastructure was used as security management for small and medium sized companies. Cloud managed security might reduce costs, improve security, and increase manageability for the small and medium size organizations. Clients can leverage Check Point's security expertise and proven enterprise security to protect their networks, employees and critical business assets [8]. This paper aims to present the significance of the SMEs and recognizes the regulatory and operational problems faced by these enterprises [9]. Integrated Development Environment was proposed which helped software developer to code an application in a single code base and deploy that single code base to multiple operating systems. First the development of a operating system compatibility architecture which helped to run unmodified iOS binaries on Android operating system and second phase of proposed solution helped to understands the cross-platform application development tools which are currently available in the market. The third step is to understand such cross-platform development tools in more detail and finally a mathematical model based application [10]. This work identified three things: 1.how mobile technologies and solutions have already been implemented by international development organizations in order to reduce duplication of efforts through information sharing 2. major obstacles to future interventions 3.and how innovations in the land sector, which include mobile broadband applications (“apps”) that record land information, assist in land registration, and share land management best practices, may lead to overcoming the obstacles [11]. This paper, discussed the current and future research trends within the framework of the various stages in the software development life-cycle: requirements (including non-functional), design and development, testing, and maintenance [12]. This paper helped the developer make the right choice in order to build an application as well as give vital information about hybrid platform mobile application approaches and their advantages and disadvantages [13]. It discussed the design and development of an Android based app named as iquiz that can help students in preparation of competitive exams like UGC-NET, GATE etc. while they are on move. It also highlighted various challenges faced by developers in Android App Development [14].

1.1 Problem Statement

Student’s innovative ideas are remaining ideal without further progress. On the other side several small and

medium scale enterprises require technical support for their frequently occurring issues. How to provide chance for student? A methodology is needed to connect these two paradigms.

1.2 Why mobile app?

Mobile app is trending worldwide. Mobile app open gateway for many new business and income making satellite informs 33, 35653 people uses mobile app around the world. It is shown in Fig.1.Mobile app is a common tool to bridge many facilities. It’s simple and easy way to integrate people.it has provision for updates to contact and scheme information. It’s a user friendly with notification facility in icon on mobile home screen.

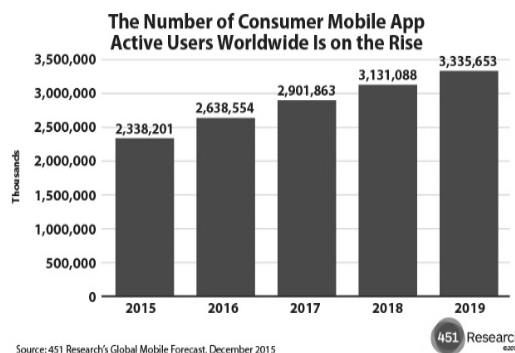


Fig 1. Mobile app user statistics

Anyone can share the information at any convenient time and has flexibility in accessing. Mobile app are low expensive and gain income for users directly and administrators for indirectly in the form of advertisement and data usage. Rather than other software methodologies mobile is a simplified and cost effective.

II.Proposed methodology

The various stages of developing an app for the proposed work is listed below

Step 1: Read the industry problem thoroughly contact the person and clarify the doubts before start making the app. It is an art to think multiple solutions for a given problem. List the solutions combine the possible concepts and finalize an opt solution.

Step 2: Create a layout and indicate the flow and features. Detail the full project in a document. Use a wire frame tool to segregate the graphic elements and functional elements.

Step 3: Prioritize the core features and minimize the non-core features as shown in figure 5. Accept the core which values the app idea. Other features can be later incorporated as an update.

Step 4: Design should be developed as first and it should make technology useful. Also create developer account.

For android google charges \$25 per year as a rent for promoting the developed app through googles platform.

Step 5: Analytics assist to track the number of downloads and retention of the developed app. Hence add analytics to the app.

Step 6: Demonstrate the app to the end users and get feedback. Improve the app as per the feedback of user.

Step 7: Once the primary feature is functioning better, add the remaining additional features.



Fig. 2 Student login screen

Front end of the app assist the user to enter the details as shown in figure 2,4 and 6. Back end process the business logic and data. Mobile app transactions are recorded in the mobile app log as shown in figure 3.

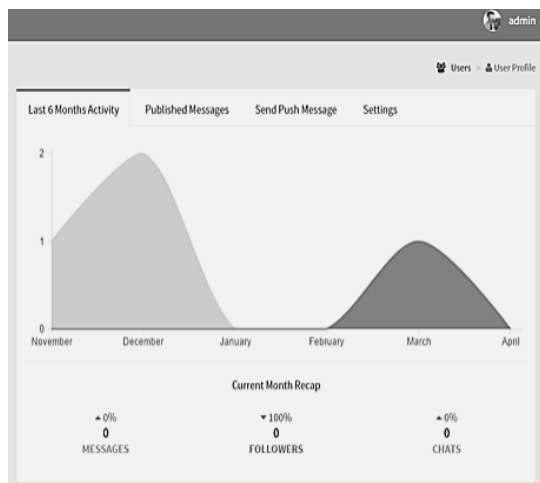


Fig. 3 App usage statistics screen

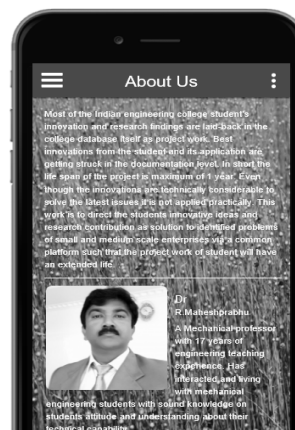


Fig. 4 Introduction screen

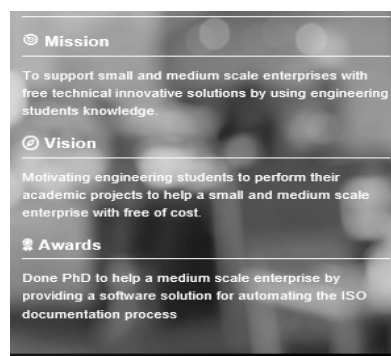


Fig. 5 Mission vision screen



Fig. 6 Industry login screen

III. Conclusion

It is a measure to prolong the life of engineering student’s innovations in terms of live projects in SMSEs. In vice versa SMSEs can make use of creative project of student’s to update their business process without investing money. The developed mobile app is a tool to bridge the students’ innovations and SME requirements. SMEs can post their technical requirements along with contact details so that interested students will express the ir interest to complete the project. Hence this research work is a bridge which connects student knowledge to industrial needs and provides a real time solution.

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