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Advantage of Cloud Based Construction Management Software and Cost Reducing Solutions

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Abstract

Cloud Based construction Management software is the new age technology to manage the team on construction projects both on site and in office. The software can be used by all the team members to get connected and get the real time update of the projects on one platform. The software can also be used on any wireless device in the form of application . It can be used on Mobile phones , Tablets , iPad, and Laptops. In this paper, we are discussing the features of the software which are required and functionalities. Most of the software are either paid or have only permission for a limited time period or user. Here we have also discussed how this software and mobile application can be made completely free by connecting it with online and offline markets . Also adding new features to the mobile application will help it to get sustain.

Keywords - Cloud-based Construction, Mobile application, Tablets, Mobile phones.

Introduction

The rapid increase in the population is demanding the increase in the infrastructure. Every project requires a team to execute in the stipulated time period. Most of the time it happens that project gets delayed due to lack of proper management and during the execution of the project there is the lack of instant communication within the team, which leads to delay and procrastination within the team's members hence it makes the system more opaque. The delay in the projects also leads to increase in the cost of projects. This application will not be a management software ,indeed it's a kind of stress management application. During the construction project, there is the excess of information and data. This complexity of information is itself a complex problem and this tool will help everyone to make the information structured. Most of the management software are still not being used on the site because very few people pay for the mobile application and second that software is highly sophisticated. Most of the construction sites are been handled by Diploma holders and very few of them don't know how to use the application. We are here to propose a very simple mobile application with the simple features initially. As the user will use the application more features can be added. It will help the user to keep the constant learning and at the same time

help the product to sustain. Right now most of the people on construction sites use whatsApp as a communication tool by creating the group and sharing all the details on it and this makes the whole data and information more complex.

Problem definition

Many of the Researcher, Engineers , Contractors , Architects and practitioners have acknowledged the limitation of the current approaches to managing the team and individual task,information, and knowledge during the execution of entire construction projects.These limitations are due to several technical, human and business-related factors. So there is the list of the problems which needs to be solved and also what still lacks in this sector that needs to be solved and deployed with the development of the technology.

1. Most of the software and application that are designed are highly sophisticated and very expensive to use. This makes the team members reluctant to use.
2. There is a lot of documentation work like maps of project, photographs, bills and other miscellaneous documents that required the real-time updating and arrangements at the development stage.
3. Assigning task to the each team member and tracking the progress is still a big challenge for the project manager especially when it comes to deal with the big project and big team

Features

Creating account and team

The application will be very easy to use it can be download in the phone and account can be created by putting details , if the user itself is the one who is a manager can create the project folder by putting the details of entire project , the manager can also create as many as projects on the dashboard . There is another option of team members where a person can add all his team members via the main ID and specify the relation of each team member

Project Initiation

The management is all about assigning the task to all the team members and getting the real-time update of

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all the task. There will be an option in the each project folder to create a new task. The list of people will automatically be created when a person add another, Hence it become each to assign task to the specific person , the detail can be put - Task title , Starting date and deadline , Detail about the task. All this can be done within one minute.

Task assigning

The moment task is assigned to another person, the same project folder will get created in the other person account on the dashboard from where a person can see the task and see the full detail including who has assigned the task. There is a progress bar in the form of percentage which can be used by the second person to update the work as per describe in the detail of the task. The percentage update gives both the person a sense of accomplishment.

Cloud Storage

The application will also provide the cloud storage of all the documents and images. The Storage is provided in the way that ,In each task, there will be the option to store the documents and images separately to keep the documents structured and arranged. Both the person one who assigned the task and the second person who got the task can upload the documents and images at the same place in the task.

Communication

During management, the communication is also a big problem , so there is a chatting option which can be used to convey the message within the team . There is also the file sharing option which can be used to share the files and images via chatting.

Third person view (Tag Project and tasks)

The third person view which is the tag option is features which are created for the client, by tagging the anyone in the project by putting the mail ID ,that person is able to see all the activities going on that project . At the same time individual task tag option in which each task can be the tag to anyone for the monitoring point of view.

Past project

Whenever the project get completed the person will be able to mark complete that entire project and it can be saved in the separate section , this feature is helpful to see the detail of the entire project that got completed and also can use to verify the detail and analysis. The past Project detail can also be use to seeing the

accountability of the entire team that involves in that project.

Renting equipment and accessories

This application can also be used for renting accessories, most of the problem with the new contractor or manager is to arrange the machinery that uses during the construction. The renting option will help the contractor to save money and at the same time, other person can earn the money by renting.This will also help the application to earn revenue by charging the registration fees from the person who is renting the equipment

E-commerce model and selling of scrap

This application can help the construction companies to sell their product directly to the contractor . Even the shipowner can create the account and put all their product list and can contact the contractor. This platform will help the companies to get the reviews of products

Site location tracks and connects to marketplace

This application will be smart enough get the detail of the location of the project . This will help the companies and other institution to have an easy access to the construction site . The use of google maps will help to see all the projects on one location, it can be done by identifying the coordinates Longitude and latitude. This can also help to improve the logistic for both companies and contractors.It will also help to filter out the various type of projects in various ways like commercial , residential and infrastructure, also it can tell the more details whether the project is a government project or private , Even the whole detail of project can get via site location track feature

Logistics

This application can also be used by the big companies to track their logistic via using the GPS technology. The truck drivers can use this app to give their exact location and time duration to reach to the construction site.

Data of all the project proposed , ongoing , halt and completed

The live projects feature will help the various authorities to track the live projects on Google maps . This feature can help to set the development going around the region.

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Online advisors

The tool can be used to connect the various consultant and experts . The project manager can tag the entire project to the consultant and that consultant and experts can provide online advice and support to the team.

Marketing of Projects

Education portal

This tool can be a great education platform for the students to see the live project management at the different location at one place. They can sign up for any project with the permission of project manager. They can also visit the site when some important work will be initiated at the construction .This will be the step by step guide to the students.

Job Portal

With the concept of live projects. It will be a great opportunity for the people to search for the various jobs on the project. The project manager can post the job title and all the related information and can recruit the people via using this platform and there is various platform through which companies can take the interview via video conferencing.

Project posting

Their online posting system will help the companies to put the tender details on website and request for the quotation from different contractors and those constructors can directly reach to the client via this platform

Contractor rating platform

Currently there is a lack of the contractor rating platform for the work he has done in the past and then it's become very difficult for the new person to choose a contractor for the work, so with this platform the people can rate the contractor for the work he has done so it will help the industry to get more transparency.

Internet of things

There are a lot of technological innovation going in the construction industry in the equipment segment, but still, we are not able to track the efficiency of that equipment . With the evolution of technology, it is possible to connect the equipment with the mobile phone . It will be like Internet of things.

Conclusion

The paper has proposed the various ways to usage, advantage, cost-effectiveness and integration with the various institutions .In the current dynamic environments, the potential of cloud based construction management software for enhancing a live capture and reuse can be even more important. For example, when project team member are faced with making quick decisions and assigning the task, the system can provide efficient and effective capabilities for collecting the details from team member and capturing live data. Using this knowledge, team members can easily analyse their work and role with project development. The approach corresponds to the development of high and low – level functionalities – that help a supply chain to deal with many activities within a project. However, in the early part of the paper, the general concept of project knowledge was emphasised. In the other parts more emphasised is given to use that software to reduce the cost and how it can be connect with the various institution. This is an important step towards the deployment of full commercial approach in the industry. It is evident that the industry stands to reap many benefits from this approach of 'live' capture and analysing the project on different stage.

Some of these benefits are as follows: Construction supply chains will benefit through the shared experiences that are captured as part of the learning on key events (e.g. problems, breakthroughs, change orders, etc.). The benefits to this group are both short- and long-term. Short-term in the sense that project teams would be enabled to manage better the subsequent phases of a project (through the capture and transfer of learning from a previous phase). Long-term because it will increase their capacities to better plan future projects and their ability to collaborate better with other organisations. Furthermore, learning from past projects can be used to train new employees and project managers.

Other project teams can use the learning captured from previous/similar projects to deal with problems; reflection on previous learning can also trigger innovative thinking (to think about issues that might be relevant to their project).

Client organisations will benefit from enriched knowledge about the development and construction of their assets. This will contribute to the effective management of facilities and the commissioning of other projects. In the longer term, clients will benefit from the increased certainty with which construction firms can predict project outcomes.

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Improved supply chain management, as team members would work morecollaboratively and share the lessons learnt on construction projects.

The construction industry will benefit from an enhanced knowledge base as muchlearning that is presently not documented can be captured and reused.

Facilitate the reuse of the collective learning on a project by individual firms and teams involved in its delivery.

Involve members of the supply chain in a collaborative effort to capture learning in tandem with project implementation, irrespective of the contract type used to procure the project from the basis for both ongoing and post-project evaluation.

Maximise the value of reusing the knowledge captured through 'live' capture and reuse. The true benefit of capturing knowledge comes only when the knowledge is being used, particularly if the knowledge is being reused 'live' after it has been captured.

To conclude, this paper has described and discussed some ways to think about project procurement of today and the future, which can enhance the project team's activities. Ultimately, improvements in the project procurement as a result of 'live' capture and reuse approach can reduce the construction period and decrease the cost of projects. With the integration of the application with the various institution like e-commerce , Education platform , renting equipments and job portal for the future development will help the product to keep the sustainability maintain and make it free to use.

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