CONSTRUCTION MANAGEMENT APPROACH BY USING ERP SYSTEM

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Abstract: **Enterprise resource planning (ERP) is a method for managing everything that's involved in delivering a product to the customer. The approach uses unified software – software that's connected to a single database – to increase the flow of data between departments and create more opportunities for automating systems and processes. By connecting all departments together, companies experience better communication and easier collaboration. ERP was first used in the manufacturing sector in the 1990s, but the approach quickly spread to nearly all other industries including health care, education, insurance and finance.**

1. Introduction:

In the construction industry, however, companies have been slower to adopt the ERP approach. Many firms base their software decisions on the needs of individual departments instead of looking at the entire organization. The ad hoc approach to business and IT management often results in construction firms buying many apps from different third-party vendors. With too many apps, companies experience a lack of data sharing, inefficient communication and an uneven use of technology and automation across the organization. Construction firms that have invested in ERP software, on the other hand, have streamlined their processes, removed data silos and increased the flow of information between departments. Companies using a construction ERP platform can access tools within three main categories:

1. Planning: preparing to begin a construction project
2. Execution: managing everything that goes into completing a construction project
3. Finance: controlling cost, mitigating financial risk and making financial forecasts.

1.2 Unification with ERP Software

The ERP approach to construction management uses software to bring all operations under the same roof, but not all ERP systems provide the same level of unification. Some use a combination of different products that have been packaged together into one software solution. Usually, these products include third-party applications that have been acquired by the ERP Company that owns the entire system. When an ERP platform is a collection of third-party applications, it can still impede the flow of data across the company and create data silos. And, if the components are all made by different developers, the interface, user experience and functionality of the apps will be different. Not only does this complicate employed training, it also makes managin day to day operation more time consuming. Employees may have to log in separately to each application and keep six different windows open on their desktop just to do their job.

To give you a better idea of how ERP applications and tools help construction executives streamline operations, we've created a list of some of the ways ERP systems assist in construction **planning, execution and finance**.

2. Objectives of the paper

- To study - ERP (SAP-systematic application product)) ,various implementation phases, implementation of using ERP in construction industry, problems associated with construction management in construction industry, construction management modules of ERP
- To study-HIT OFFICE ,various features of HIT OFFICE, implementation of using HIT OFFICE
- To identify implementation of using integration of ERP (SAP) and HIT OFFICE for project management.

4. Scope of the Work

1. Construction projects are high investment projects. Scientific project management techniques will ensure successful achievement of objectives like quality standards, completing project within the budget and on time
2. Integration of Departments.
3. Increasing Productivity, Profit Margin.
4. Reconciling Financials.
5. Reducing Overheads, Wastage.
6. Prompt Decision Making.

7. Hit-Office is a software package that has been especially designed for the construction sector. It takes care of all business-related tasks, with particular emphasis on quotation draw-up, project management and invoicing.
8. Operating since 2000 in Europe as well as India.
9. Construction industry becoming more complex and matured, demanding qualified and skilled manpower.
10. Industry needs personnel who is well aware with fundamentals as well as the operative skills of ERP.
11. A well trained and certified person have big advantage and competitive edge over non-certified professional.

5. METHODOLOGY

The Study aims at studying effectiveness of ERP implementation in construction industry. The Study was performed on HIT-OFFICE which is an ERP software developed by EDSS Pvt. Ltd. The effectiveness of implementation of ERP was studied by estimating, scheduling, material planning, contractor management and billing in HIT-OFFICE using Quotation, Purchasing, Inventory, Study and Accountancy module of the software. A list of questionnaire was prepared to collect reviews from Study Managers and Engineers of various organizations to evaluate the changes Occurred after the application of ERP. The companies which are ready for huge investment provided they are adaptive to

Main Modules In HIT-OFFICE ERP Software for construction management
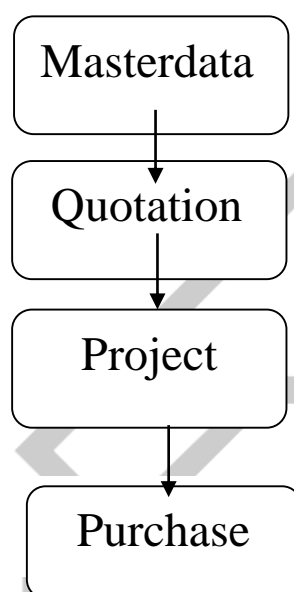
6. Case study on implementation of HIT-OFFICE (construction ERP) in construction firm Yogesh Associates

Yogesh Associates is one of the leading real estate & Construction Company in PCMC.They belief in transparent and ethical trade practices, customer-centric approach, innovation and commitment to quality has earned it enormous trust and goodwill of its customers. They operate HIT- OFFICE ERP since 2016.

We have visited to their project Shri Darshan Residency,Dighi,Pune which have approx built-up area about 11194sq.ft area & obtain overview of case study. They are using ERP model for various department. As we discus with project manager Yogesh Gaikwad he told us about ongoing project as following:

1) Bala Heights Phase I,II,III = 65723sq.ft
2) Housa Imperial = 8611 sq.ft
3) Shivraj Residency = 21764 sq.ft
4) Dattashray Residency = 5812 sq.ft
5) Samarth Heights = 16000 sq.ft
6) Shridarshan Residency = 11,194 sq.ft

Total ongoing construction 129104sq.ft and having staff about 05 engineering, 01 Purchase officer,05 other technical staff,02 admin.

We have meet their store manager, billing engineer, purchase officer & studied their ERP module working, how it can be work in actual site & their benefit. Mostly for material and subcontractor management they use HIT-OFFICE ERP to integrate all departments of company through internet service to obtain daily material utilization and DPR Reports on site.As per our discussion with project manager Mr.Yogesh Gaikwad he concludes us following experience about HIT-OFFICE ERP:

The implementation of HIT-Office for a small construction firm is expensive so it is very expensive to purchase and to implement. It required experts to maintain HIT-OFFICE ERP, so it is very complex and some construction firm may not adjust to the software so it required training for employees to work with software, so the training is expensive and it required continuous internet service.

7. RESULT

1. HIT –OFFICE is a construction ERP that is affordable & effective for large construction company due to its vast construction management to communicate various department to each other.
2. HIT –OFFICE Construction ERP is quite expensive and complex to operate for small construction company. Because which include vast software.

8. CONCLUSION

1) HIT-OFFICE helps to integrate all the department of construction firm into single system.
2) HIT-OFFICE software enables to track the companies financial and accounting & helps to manage planning, forecasting & reporting.
3) The implementation of HIT-OFFICE for a small construction company is expensive. So it is very expensive to purchase & to implement.
4) HIT-OFFICE ERP required training for the employees to work with software so training is expensive

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