Building Information Modeling (BIM) Survey in Surat, Gujarat

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Abstract - *This Building Information Modeling (BIM) is now spreading in Indian as it shows great acceptance of technological advancement. This research work was aimed to find the current degree of familiarity of Building Information Modeling (BIM) in construction industry(AEC) in Surat, Gujarat. In this survey a questionnaire was prepared containing questions regarding knowledge of BIM, usage of tool, etc. From the data we are going to run analysis and then graphically represent it.*

***Key Words*: Building Information modeling (BIM), Survey, AEC industry, BIM tools**

1. INTRODUCTION

This design, engineering, and construction (AEC) industry has extended sought techniques to cut project price, rise productivity and quality, and drop project delivery time. BIM offers the possible to attain these objectives. BIM mimics the construction project in extremely virtual surroundings. A precise computer-generated model of a building, brought up as a BIM is digitally created when finalized, it contains precise geometry and relevant knowledge required to help the planning and execution of the project. BIM is the illustration of the digital evolution from traditional 2D model to 3D mode and even to 4D model (scheduling) and 5D model (cost estimating) with an information throughout the building life cycle. Special capabilities of constant parametric modelling and inter operability facilitate this evolution method. The advantages and outcome of BIM execution will be utilized to validate the necessity to push BIM within the AEC industry. Edward (2007) claimed "One of the key edges of BIM is that it includes information concerning length, width, and volume, yet as info concerning content like doors, windows, and finishes, all of which might be used for estimation." Moreover, estimating depends on BIM eradicates overlooked details when undertaking quantity take-off from 2D Drawings regularly with common updates which creates it hard to catch. A relative new technology that is progressively getting accepted in the construction industry is BIM. It is playing a major role on improving construction management background. There are several factors that have made BIM technology popular in the construction industry. First, its popularity may be attributed to the accessibility of both software and hardware applications that are likely to minimize errors.

Similarly, BIM technology has created very competitive markets for the modern construction. 5D-model task give careful and correct 5D estimates and living price plans. This help is provided to projects at any section from concept design through to construction and completion. Certain software package providers are currently advertising that it's potential to develop cost planning through linking a 5D price Library to BIM model, which implements the function of an estimating database. In this thesis, virtual model will be generated & simulated using project design software and project management software. This provides opportunities to import 3D BIM models then cost planning will be carried forward. Moreover the capacity to tie a 3D BIM with schedule and cost provides a 5D BIM model and simulation.

2. FINDINGS

The majority of respondents 51 percent are developer and builders, they are actively working in Surat city more than 20 years. Second group of respondents was of architects, which are 31 percent. The third group is of PMCs which are 17 percent. These are the stakeholders which are authorized use BIM in projects so they are mainly targeted for survey.
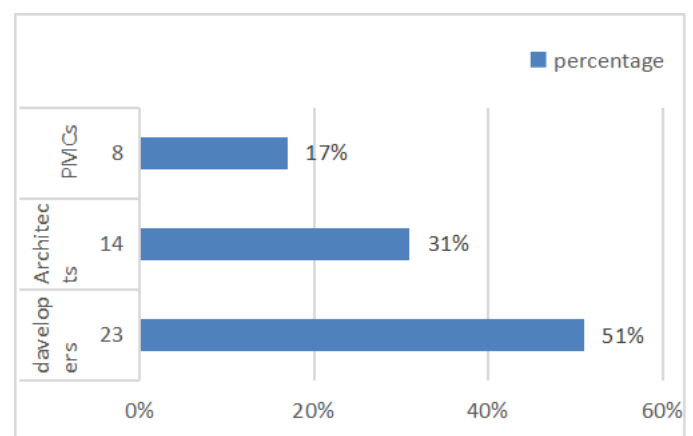

Chart 1: respondents

2.1 Validation of questionnaire:

The validation of questionnaire is done by different field experts as well as strategic consultants.

2.2 Sample Size Determination:

Selection can be definite as the process of selecting descriptive units of a population for the education in the study analysis. The independent of the selection is to provide an applied means of assisting the data gathering and processing the modules of investigation to be approved out with ensuring that the sample provides a good demonstration of the people. A sample is a small quantity of the population designated for scrutiny and analysis. The sample was selected haphazardly from the population.

N (population)=50

Confidence level = 95%

Standard deviation=0.5

Z score for 95% confidence level= 1.96

Necessary sample size (SS)= (Z score)2∗standard deviation)∗1−std.deviation)(margin of error)2 = 384

Adjusted sample size = SS1+[□.□.÷POPULATION] = 45

3. RESULTS & DISCUSSION

An analysis will be run in accordance of series of question. First of all we asked respondents about weather he is aware of Building Information Modeling (BIM) or not where we found that only 9 percent of our respondents are using BIM as daily practice. While rest 91 percent were not using/not aware of BIM.
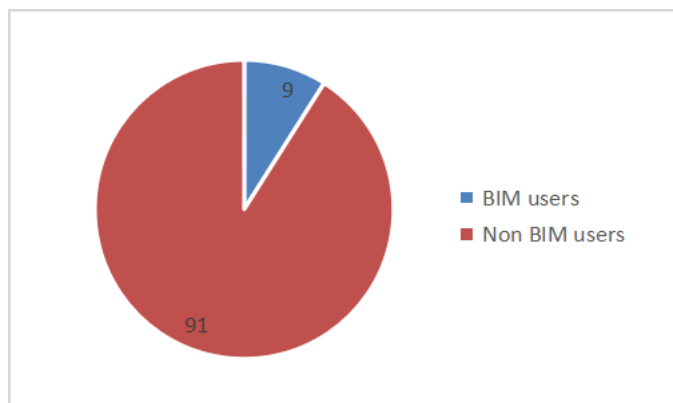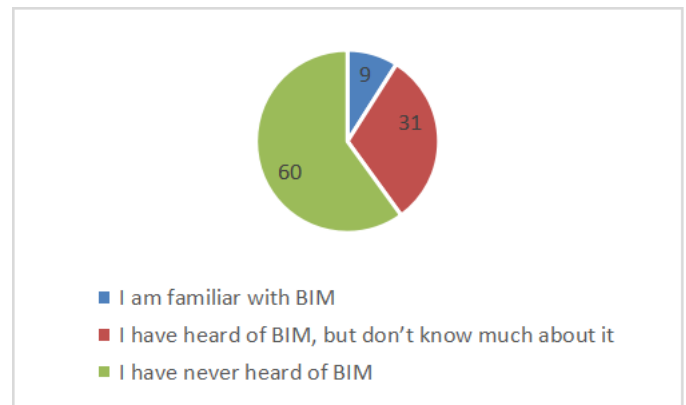

Chart 2: BIM users & non users

Chart 3: familiarity with BIM

With the survey who were non BIM user or not aware of what BIM is, are given the basic idea of BIM by verbally and also by visual video presentation. And many unaware BIM users were happy to learn about new technology. So the further questions are regarding future use/acceptance of BIM and 9 percent of respondents are using BIM right now. Now after given idea of what BIM is few respondents were think of no use and chose not to use BIM in future, these respondents are 26 percent. Respondents who are willing to use BIM in future are outstanding both, users and not expecting to use BIM is 65 percent.
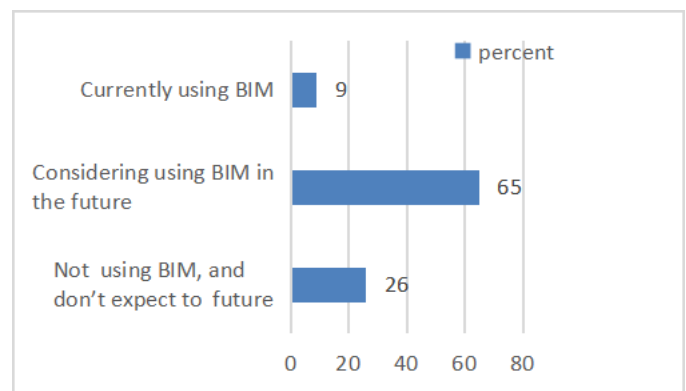

Chart 4: Future expectancy of BIM

BIM users in Surat mostly use Auto-desk Revit for drawing purpose and Auto-desk Navisworks for simulation run. BIM users were asked about their experience and they sometime face the BIM tool related problems, Like communication gap between different contractors and sub contractors. Sometimes documentation issues occurs. But this issues does not let them stop using BIM. There is also a major problem of not having enough of BIM training provider. They added that clients are now becoming aware about time and cost efficiency so now they have start accepting BIM, on a very few projects but they are looking forward to it in the future.

3. CONCLUSION

Stakeholders in construction industry in Surat are not aware/not knowing of BIM, however few BIM service providers in Surat have found the future scope and providing services that brings awareness for BIM. Many developers who are in this industry coming to known to BIM they are happily to accept BIM in their future projects. However it will take time but in a short future BIM will be common in Surat city.

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