UNIVERSITY OF MORATUWA

MSc in Construction Project Management
Department of Civil Engineering

Study On
Computer Application
In
Project Management

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Abstract

The construction industry is becoming increasingly complex due to rapid improvements in designs and the technology. Other factors like involvement of various interested parties, pressure applied by funding agencies and financial institutions and the tough competition prevalent have also contributed for this development. Thus, completing projects without time and cost overrun has become paramount importance.

The necessity for an efficient management system as far as the project management is concerned is essential and has become more urgent than ever before, because there are enough instances where projects have failed to accomplish the time and cost targets within the given parameters, resulting losses frustrating the interested parties. The new concept "Project Management" has emerged and the tools of project management are now being applied in order to make sure an efficient management system. The application of the project management software packages comes to the scene as far as the application of these modern sophisticated project management tools, especially in the main functional area such as planning, scheduling, monitoring, progress controlling, cost controlling and the document controlling are concerned. The demand for the computer application therefore have been increasing rapidly world over as the benefits offered by these so called project management software packages are enormous. This high demand, the benefits offered by these packages and my personnel interest on this area prompted me to carry out a research project to explore the application of project management packages in the Sri Lankan Construction Industry.

Objectives of the research project therefore were formulated in order to identify the latest project management tools which these dedicated project management software packages should be equipped with, identify the dedicated project management software packages available and used in the Sri Lankan Constriction Industry, identify the facilities available in these packages, explore the extent of their usage, ascertain the user satisfaction, find out the difficulties faced in the use of these packages and to study and find recommendations as to how the situation is to be improved.

Project management tools which the dedicated project management packages should be equipped with were studied and findings were gathered and compiled through the comprehensive literature review carried out as a part of the research. The industry research was carried out on a questionnaire based structured interviews and discussions and this survey enabled to gather industry experience in the use and application of dedicated project management packages in the project management activities in the Construction Industry. The study was mainly focused on the contracting firms covering the local firms and foreign contracting firms by giving the attention of it to the consultants and project management firms operating in Sri Lankan Construction Industry. Project management packages used in the Sri Lankan Construction Industry were researched and the findings have been analysed in

the chapter 4 of this project report. The existing situation regarding the application of project management packages in the industry was studied under five major functional areas, such as construction planning, scheduling, monitoring and controlling, cost controlling and document controlling. The research was also focussed on obtaining contractors' views on difficulties faced, benefits realised and future developments. The level of user satisfaction was also subjected in the research and the findings have been analysed and presented in chapter 4.

Lack of trained staff and the lack of interest amongst the technical people in application of project management software packages have been identified in this research as the main difficulties faced. As far as the user satisfaction is concerned, most of the firms expressed that they were satisfied with these packages even though the maximum benefits derived out of application of these packages are not fully known to them. Most of the people interviewed are not fully aware of the tools available in these packages and hence conducting awareness programmes in this regard is highlighted as almost all of them have future plan to improve this area especially by giving training to the technical staff and recruiting trained people. The need of formulating training sessions in this regard by universities, technical colleges and even by the ICTAD could be underlined as one of the important aspects found out in this research as some of the firms interviewed claimed that there are no sufficient institutes for them to get their employees trained in this regard. Further, the need of a comprehensive study on the productivity and the effectiveness of using computer packages for project management activities in construction industry, indicating the visible results and highlighting the fact that the benefits which could be obtained by using these packages could well compensate the cost of purchasing of even very sophisticated packages like P3 (Primavera) is of paramount importance.

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Further, I must thank all those who helped me during the research part, by dedicating their important time giving appointments and sharing their knowledge and the experience in this regard.

Declaration

This is to certify that this thesis;

1. embodies the results of my own course of study and research,
2. has been composed by myself,
3. has been seen by my supervisor before presentation

Signature of Candidate.....

Date: 26th July 2002

Contents

4.0 Analysis

5.0 Conclusions & Recommendations

List of Abbreviations

F	-	Foreign contractors
M1	-	M1 Contractors
M2	-	M2 Contractors
M3	-	M3 Contractors
M4	-	M4 Contractors
Con	-	Consultants
PM	-	Project Management Firms
ICTAD	-	Institute for Construction, Training and Development
DP	-	Data Processing
PERT	-	Program Evaluation Review Technique
MMI	-	Man/Machine Interface
AI	-	Artificial Intelligent
IKS	-	Intelligence Knowledge Based System
CPM	-	Critical Path Method
LOB	-	Line of Balance
BCWS	-	Budgeted Cost for Work Performed
ACWP	-	Actual Cost for Work Performed
BCWP	-	Budgeted Cost for Work Performed
P3	-	Primavera Project Planner
WBS	-	Work Breakdown Structure
CM	-	Construction Management
GUI	-	Graphical User Interface
PC	-	Personnel Computer
CAE	-	Computer Aided Estimating
BOQ	-	Bill of Quantity
GRN	-	Goods Received Notes

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