

EFFECTIVENESS OF SOFTWARE APPLICATIONS IN CONSTRUCTION PROJECT MANAGEMENT

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of Master of Science in Construction Project Management**

Department of Civil Engineering

University of Moratuwa

April 2013

DECLARATION

I hereby certify that this dissertation does not incorporate any material without acknowledgement and material previously submitted for a degree or diploma in any university to the best of my knowledge and I believe it does not contain any material previously published, written or orally communicated by another person except where due reference is made in the text.

.....

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This is to certify that this thesis submitted by G.L.Manorathna is a record of the candidate's own work carried out by him/her under my supervision. The matter embodied in this thesis original and has not been submitted for the award of any other degree.

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ABSTRACT

Today, construction industry is becoming complex due to rapid improvement in design and technology. Completing construction project without time and cost overrun is a great challenge. In Sri Lankan condition, the need for efficient management is more urgent than ever before. In fact, inefficient construction management has contributed to long drawn-out projects in the past with inflated costs and delayed utilization. Professional construction project management input is a mandatory requirement for successful project completion and one tool the project manager can effectively use to manage the project is dedicated project management software.

This study report, research in to the application of dedicated project management software in construction management by building contractors in Sri Lanka. The focus of this research was to gather industry experience in the use and application of construction management software and to assess the difficulties face & benefits realised by the industry. It was based on a survey of local C1, C2, C3 & C4 grade contractors, engaged specially in building construction, registered at ICTAD. The industry experiences in usage of dedicated project management software were studied under three main areas of project management, planning, scheduling and controlling. This was done through a questionnaire based interview.

Over 80% of firms are using MS Project as project management software & usage was limited only for initial basic facilities provided by software and very less usage in cost & resource related activities. Providing easy administration of works, integration & approach to repetitive tasks, Force due to competitors & consultants are most important factors highlighted as reasons for usage. Non availability of trained staff & lack of interest among top management are significant difficulties faced. Only 35% of firms have a plan to develop their software systems.

Key words: Effectiveness, Software Application, Construction, Project Management

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ABBREVIATIONS AND ACRONYMS

| | |
|----------|--|
| PM | - Project Management |
| ICTAD | - Institute for Construction, Training and Development |
| GDP | - Gross Domestic Product |
| IT | - Information Technology |
| PC | - Personal Computer |
| DOS | - Disk Operating System |
| CPM | - Critical Path Method |
| PERT | - Program Evaluation & Review Technique |
| LSM | - Linear Scheduling Method |
| LOB | - Line of Balance |
| WBS | - Work Breakdown Structure |
| BCWS | - Budgeted Cost for Work Scheduled |
| BCWP | - Budgeted Cost for Work Performed |
| ACWP | - Actual Cost for Work Performed |
| EPM | - Enterprise Project Management |
| EPMO | - Enterprise Project Management Office |
| Prince 2 | - Project in Control Environment methodology |
| PMBOK | - Project Management Body of Knowledge |
| WPMS | - Web based Project Management System |
| PM-ASP | - Project Management-Application Service Provider |
| PDA | - Personal Digital Assistance |
| ISP | - Internet Service Provider |
| OBS | - Object Breakdown Structure |
| RFQ | - Request For Quotation |
| PMO | - Project Management Office |