

Chalita Surinrat 2014: Development of Decision Support Tools for Resource Management in Construction Industry. Master of Engineering (Industrial Engineering), Major Field: Industrial Engineering, Department of Industrial Engineering. Thesis Advisor: Assistant Professor Pornthep Anussornnitisarn, Ph.D. 71 pages.

Most construction companies encounter the difficulties of addressing resource conflicts as they usually perform multiple projects at once. This leads to the delay, cost overrun, and poor quality. The study is conducted based from a case study on a small-scale construction company where members have difficulties maximizing the utilization of project management software. By this, the time has been consumed unreasonably on software complexities and the performance is not monitored properly due to the lack of information. The conflicts are not detected, notified, and addressed in timely manner.

The main objective of this study is to help company members or even the owner to avoid those undesirable outcomes. A decision support tool is developed on a project management software called “Microsoft Project” using Visual Basic Applications (VBA), for the purpose of solving resource conflicts. It supports the decision with selected relevant information, analyze from all input data in different aspects for instance time, cost, and significance of each task. The extension supports the decision of prioritizing the tasks by applying the concept of Ranked Positional Weight (RPW). It also facilitates function of viewing multiple project performance at once with a more user friendly interface and a customization of report generator.

Therefore, the amount of time wasted in detecting resource conflicts and generate such reports has been reduced and the project performance can be monitored more closely and accurately. As a result, this leads to less possibilities of cost overrun and delay, which are the most undesirable outcome for all projects.

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Thesis Advisor's signature

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