

Decision Support for



Project Planning

NBS Enterprises, LLC Proprietary

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Natasha J. Schebella
CEO, President & Owner

703-851-0233
nschebella@nbsenterprise.com

Gary S. Schebella
Chief Scientist

703-999-1849
garyschebella@nbsenterprise.com

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SYNOPSIS

NBS Enterprises has developed an integrated software tool suite that provides decision support for the management of projects within an enterprise. Representation, assessments and optimization are associated to provide guidance for deletions and additions of projects from and to an overall program plan.

OPTIMIZATION TOOL SUITE

In view of budget cuts and the potential of sequestration, Government agencies are in the process of assessing their overall program plans and project priorities. The process requires the associations of numerous dashboards which delineate topics such as schedules, costs, risk, resources, contracts and personnel. Manual procedures and limited decision making software are employed to associate the disparate data sources. Even so, additional decision support capabilities, not currently available for assessment efforts, are desirable to automatically provide management courses of action and a prioritization of projects without disrupting current procedures.

NBS Enterprises (NBS) is foremost in the development of scheduling and management decision aids. For example, if a new project is proposed as an addition to an agency program and no additional funding is available, a manager is interested in the project impact upon schedule, priorities and risk. Answers to this query, by a staff operating without automated decision support, require several days. Similar procedures apply to the elimination of projects that exceed budget constraints.

Once data are available, the NBS decision support system (DSS) associates the dashboards and provides answers within hours or minutes. Further, NBS has developed a set of optimization algorithms that assist with planning, forecasting and prioritization. Because the algorithms are fully developed, their applications produce great savings in costs and assessment times necessary for planning without the necessity of research and development.

Components of the NBS Project Management software:

- Domain specific user interface showing dashboards and optimization results
- Association of dashboards into a comprehensive optimization model
- Integration capability with domain data and the World Wide Web

- Optimal addition and removal of projects in response to overall program objectives
- Optimal partial reduction of project resources which minimize schedule slippage
- Work load balancing in response to priorities and personnel skill levels
- Value analysis and forecasting
- Response to queries

The general purpose optimizer provides an existing engine which incorporates program data, decision maker measures of effectiveness and desired constraints.

INTEGRATION

NBS is in the process of integrating the optimization tool suite with Microsoft Project.

The intent is to represent a large-scale program with the existing capabilities of the Microsoft tool suite. Details of a program, Gant charts, stovepipes and the relationships between projects are digested into Microsoft Project and act as a precursor to optimization.

For example, the optimizer identifies the projects or options within projects which can be illuminated while minimizing the impact upon an overall program. Options within projects relate to the removal of resources, which probably reduce cost while increasing a schedule slip. The project remains but is reduced in scope.

To make the reduction calculations, information relative to priorities and other factors such as project cost, risk given project removal or reduction, and schedule slip are required. These descriptors can be estimated by program personnel, but more accurate and quantitative answers are gained by integrating the optimizer with the Microsoft Project representation. Using existing NBS algorithms, the variables associated with each project, using the Microsoft data, are computed rather than estimated. Further, factors such as cost, risk and schedule slip are associated so that the optimizer provides comprehensive, quantitative management guidance, as opposed to dashboard assessments.

Demonstrations of the optimization tool suite are available upon request.