



## **An Automated Decision Support System to Assist with Project Planning, Program Management and Work Flow Analysis of an Enterprise (Lean Management and Optimization)**

In view of budget cuts and 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 provide management courses of action automatically and to prioritization 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, premised upon the **Lean Methodology** that assist with planning, forecasting and prioritization.

Applications of the NBS management software address the issues of sequestration, budget constraints and work flow, as well as the monitoring of project progress:

- 1) Domain specific user interface showing dashboards and optimization results
- 2) Association of dashboards into a comprehensive optimization model
- 3) Integration capability with domain data and the World Wide Web
- 4) Continual quantitative assessment of ongoing projects
- 5) Optimal addition and removal of projects in response to overall program objectives
- 6) Optimal partial reduction of project resources which minimize schedule slippage
- 7) Work load balancing in response to priorities and personnel skill levels
- 8) Value analysis and forecasting
- 9) Response to queries.

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.

The entire NBS approach to management is premised upon the Lean Methodology. Rather than simply identifying dashboards and probable issues, procedures are restructured to do more with less. Lean encapsulates several enterprise enhancements:



- 1) Continuous learning and everyday improvement.
- 2) Reduced variation and the elimination of waste.
- 3) Long term approach.
- 4) Improved value not just locally, but globally.
- 5) Provision of what is needed at the right time.
- 6) Focus not just on results, but how results are achieved.
- 7) Continuous enhancement and value add for an enterprise.