

## Testimony – Commission on Enhancing Agency Outcomes

I, personally, want to thank the members of the Government Administration and Elections Committee, for the opportunity to talk with you today about House Bill 5898, An Act Implementing the Recommendations of the Commission on Enhancing Agency Outcomes.

Before I begin my suggestions related to House Bill 5898, I want to personally thank Michael McLachlan, State Senator in my district for his support. We met in 2009 and discussed my ideas on using Lean Six Sigma TOC (Theory of Constraints) to improve policy implementation for CT State government. Because of his support, I testified on the use of Lean Six Sigma TOC at the Commission on Enhancing Agency Outcomes hearings in Danbury on April 2009 and in Hartford on December 2009. I have continued to follow the progress of the Commission on Enhancing Agency Outcomes.

Recently, I have discussed my ideas with some CT government employees. Based on these conversations, my understanding is that several CT government agencies are currently implementing Lean methods. I recommend that the State of CT expand the use of Lean and also add Six Sigma and TOC as methods to improve savings/revenues.

Key elements of this proposal are:

1. Select projects with the best savings payback ranked on key criteria.
2. Determine the agency(s) that is (are) most suited to implement each savings/revenue project.
3. Use Lean Six Sigma TOC improvement methods with a balanced framework to implement savings projects.
4. Recruit Lean Six Sigma TOC specialists from current CT state employees.
5. Train Lean Six Sigma TOC specialists within the agencies to implement the selected projects.
6. Track savings/revenue for designated projects.
7. Establish a statewide Lean Six Sigma TOC organization to coordinate savings/revenue actions.

Thank you for listening to my thoughts, and I welcome your questions on further details for implementation.

Tom Nelson

## Proposal to Improve CT State Government by Using Lean Six Sigma TOC

The objective of this proposal is to establish a methodology to improve the efficiency and effectiveness resulting in reduced costs and enhanced revenues for CT state government through the use of Lean Six Sigma TOC (Theory of Constraints) procedures. Key elements of the method are summarized below.

1. Select projects with the best savings payback ranked on key criteria.
2. Determine the agency(s) that is (are) most suited to implement each savings project.
3. Use Lean Six Sigma TOC improvement methods within a DMAIC framework to implement savings projects.
4. Recruit Lean Six Sigma TOC specialists from current CT state employees.
5. Train Lean Six Sigma TOC specialists within the agencies to implement the selected projects.
6. Track savings/revenue for designated projects.
7. Establish a statewide Lean Six Sigma TOC organization to coordinate savings/revenue actions.

### 1. Select key projects with the best savings payback based on ranking criteria.

As savings/revenue ideas are collected, the next step is to review these ideas to determine which ideas are to be implemented and what is the priority order for the ideas selected. Suggested factors to be used in both selecting and prioritizing the ideas are listed.

- Name for the idea and how it was proposed.
- Potential savings and time frame for these savings.
- Costs outside CT state government to implement.
- Simple payback (months)
- Availability of CT state resources to implement and the number of resources needed.
- Ease/difficulty of implementation
- Contractual/other roadblocks.
- Designate agency(s) to implement.
- Other considerations and comments

It is recommended that these savings/revenue ideas be compiled in a spreadsheet. This makes it easier to sort and filter these ideas and make prioritization simpler and quicker. State agencies need to list and prioritize potential savings/revenue projects based on the factors shown above.

Recommended actions are proposed to a) achieve the savings/revenue ideas generated by the CT Commission on Enhancing Agency Outcomes "Final Report to the Governor, President Pro Tempore of the Senate, and Speaker of the House State of Connecticut, Pursuant to Public Act 09-7 September Special Session December 30, 2010 and b) to implement a CT government statewide continuous long term program for Lean Six Sigma TOC.

2. Determine the agency department(s) that is (are) most suited to implement each savings/revenue project.

Part of the action for #1 is to designate an agency(s) to implement each savings/revenue idea. In this action, the focus is to identify the department(s) within that agency. This requires discussion with the agency manager. In action #4, specific individuals to implement the project are identified.

Because of the large number of employees and agencies, it is critical to initially focus only on the improvement ideas in action #1 and to only work initially with those agencies and departments.

3. Use Lean Six Sigma TOC improvement methods with a balanced framework to implement savings/revenue projects.

- a) DMAIC is recommended for projects requiring use of statistical tools. These projects usually take 3 – 6 months due to extensive data gathering and analysis. The DMAIC method is summarized below.

Define: When a new project is being considered, it is essential to determine the problem and objective statements. The problem statement states the current situation and what is a problem for the organization that needs to be solved. The objective statement is focused on the future and what benefit the organization will achieve by solving the problem

Measure: This project phase is focused on gathering data, primarily on the current situation. A data collection plan is needed to determine the type of data needed, who is responsible to collect the data and a due date.

Analyze: Data is analyzed to determine any patterns with emphasis on how the current situation can be improved. This phase looks to identify the current situation's root causes and the potential effect of these root causes.

Improve: Possible new solutions are identified and tested. A pilot scale test may be used to determine the feasibility of the new solution. A full scale implementation plan is then developed.

Control: The new solution is fully implemented in this step. The department is trained in the operation of the new process. Work procedures are written or updated. Process measurements are developed that are used to ensure the ongoing success of the improvements.

- b) Kaizen events are primarily focused on work process improvements. These events are typically scheduled over a few days to a few weeks with an extensive full scale effort. Examples include workplace standardization, facility layout, value stream mapping, customer service, etc.
- c) Basic projects are limited in scope and are simpler to execute, often with the PDCA (Plan, Do, Check, Act) method

4. Recruit Lean Six Sigma TOC specialists from current CT state employees.

After identifying the agencies shown in action #2, then agency managers need to identify candidates to be trained as Lean Six Sigma TOC specialists. The focus is to find and select candidates who can implement the savings/revenue ideas listed in action #1. The basic requirements are ability to communicate and work in a team format, analytical skills and creative ability to work and implement ideas.

These Lean Six Sigma TOC specialists are grouped into 2 categories. Green Belts are personnel who retain their current job and implement 1 – 2 projects per year. It is estimated that about 10% of their time is needed for project implementation. Green Belts remain responsible for their present job with possible assistance when actively involved in a project. Black Belts are full time Lean Six Sigma TOC specialists. Their role is to implement 4 – 5 projects per year, usually more complex projects, and provide assistance to Green Belts.

To control costs no new hires are permitted and agencies cannot replace personnel who are hired as full time Black Belts or as part time Green Belts. It is expected that both Black Belts and Green Belts will be used on an ongoing basis to implement savings projects. For small agencies, these personnel can be shared among the agencies.

All Green Belts will work within their respective agency(s). Black Belts, for larger agencies, can work solely within that agency. Another option is to have a small Lean Six Sigma TOC group at the state level which employs all of the Black Belts, who are shared among the agencies.

For each project, a Black or Green Belt is assigned to act as project leader. Also for each project, a process owner is required to mentor the project leader to ensure that proper problem and objective statements are defined, adequate resources are provided to complete the project and actual savings meet the project's goals. The process owner can be a supervisor, agency or department manager.

#### 5. Train Lean Six Sigma TOC specialists within the agencies to implement the selected projects.

Before starting Lean Six Sigma TOC specialists training, the following steps must be completed.

- Savings/revenue projects and agencies to implement these projects are determined per actions #1 and #2.
- Specific state personnel are designated as Black or Green Belts for each project as discussed in action #4. Note that if an agency(s) want a full time Black Belt, these personnel are included in this training. It is required that these designated personnel be assigned a savings project before starting training

Initial training will consist of classroom lecture, problem solving exercises and beginning work on their designated project.

#### 6. Track savings/revenue for designated projects.

It is important to track actual savings/revenue of projects to determine the effectiveness of this proposed Lean Six Sigma TOC program. The actual savings must be compared with the initial projected savings. Proposed project metrics are listed below.

- Projected savings/revenue
- Actual savings/revenue
- Project length (start vs. finish date)

A state wide procedure is needed to define the type of project savings/revenue.

Savings/revenue for each project are categorized as shown below.

- Hard savings and higher revenues: These result in a direct reduction in state expenditures or an increase in revenue. Examples of hard savings are process improvement to eliminate new hires/replacements, reduced postage, lower fuel use, less overtime, etc. If projects result in increased revenue, these increases are included in this category. Examples are higher fees for rapid permit approval, improved tax collection for delinquent accounts, etc.
- Capital avoidance savings: If the project makes improvements that reduce the need for capital purchases, these are included in this category. Examples are better vehicle maintenance to avoid new purchases, lower replacement of computers, etc.
- Soft savings: These savings improve government efficiency and effectiveness, but do not reduce expenditures. Examples are reducing the cycle time required to issue work permits, eliminating non-value added steps from an administrative process, etc. Savings for these projects are difficult to calculate; however, some of these projects are recommended for overall improvement.

The initial focus for the projects listed in action #2 is to generate hard savings/higher revenues because of the direct effect on state expenditures. Later projects can include some projects with capital and soft savings. The long term focus is always on hard savings/higher revenues.

A procedure is needed to define project savings/revenue categories. For the projects listed in action #2, each state agency/department will determine the type and amount of savings/revenue for each project. A report format is needed to track the metrics of projected savings, actual savings and project length for each listed project. A CT finance person will validate the actual savings/revenue amounts and categories for each project.

#### 7. Establish a statewide Lean Six Sigma TOC organization to coordinate savings/revenue actions.

A small statewide organization consists of a program director and several Lean Six Sigma TOC experts. To control costs no new hires are permitted to form this organization and agencies cannot replace personnel who move to this organization. The following services are provided.

- Train Black and Green Belts and Process Owners
- Work with agency/department heads to develop annual savings/revenue budgets based on Lean Six Sigma TOC projects
- Act as advisors for projects which require specialized Lean Six Sigma TOC expertise
- Provide summary reports on the Lean Six Sigma TOC program progress