# Implementing the Theory of Constraints

Delivering a Successful, Sustainable Implementation

Mark Woeppel

PINNACLE STRATEGIES

# How Do You Put TOC Into Practice?

A great deal has been written about Drum Buffer Rope (DBR) and the Theory of Constraints (ToC). Many people have written their success stories. There is plenty of information available about how it works, but not how to do it. The answer to the question, "What in my business has to change in order to be successful?" eludes many.

I have been implementing ToC in organizations ranging in size from $1mm to $1B for the last 18 years. Real world experience has taught me there are four core elements in a successful implementation:

1. Commitment and Leadership from Senior Management

2. A sound process for managing the change that will take place

3. A robust design of the new business processes

4. Management commitment to ongoing improvement

# What is a "Successful" Implementation?

I don't judge success against an indicator of $x$ percent improvement of profit or return on investment. If you implement DBR/ToC, even a few elements, you will improve overall business performance. A successful implementation is one where the management team is considering the constraint in their daily decisions and actively managing the business so the constraint is where they want it to be. A successful implementation is one that uses the *processes* of constraint management.

## Commitment and Leadership from Senior Management

The organizations with the most enduring (and financial) results have implementations that are led from top management (the person(s) most accountable for profit and loss) and have a champion. The practical reason for this is that top management has maximum control over the resources and the implementation *will* consume resources. The second reason is that the organization looks to senior management for direction and guidance. If they are not on board, it will be much more difficult to get people to risk changing the process. The third reason is that they control the measurement process. If you can't control what gets measured, you will be unable to change the behavior of the organization.

Don't confuse management leadership with management implementation. We don't necessarily need to have the CEO or president directly involved in the implementation. My experience has been that he or she does not know or want to know the details at the depth required to be effective to manage the project. Besides, they should not be focusing their attention on this level of detail; they should be building the business and the market.

An overlooked part of building consensus is maintaining momentum. The job of keeping everything together falls to the project champion. He or she is the one responsible for maintaining forward movement when things go slowly. The champion is the person that takes personal responsibility for the implementation. In essence, they play, "you bet your job" on the outcome of the project. Without someone taking responsibility for success, the implementation is destined for failure.

## Change Management

We must consider that some people's work will change. In a ToC implementation, those "some people" are the management team. You know who you are, you are the most difficult to change. You have the most to lose if something goes wrong. The change management process must be structured to get and hold the support of the management team. This also has its advantages, in that we are not dealing with a large population of people – thus, the change process can be focused and managed more easily than say, an ERP implementation.

The change process has to address more than the "why" of the implementation, it must also deal with the ramifications as well. Good managers are looking to the future to identify potential problems. The change effort is thus focused on educating them of the cause and effect of the implementation.

The change process is not a one time event. During the implementation, the details of "who is going to do what" should be carefully worked out and documented. The management team can then agree on the new roles and responsibilities during the development, voicing their objections and incorporating the changes into the new processes. Active participation makes for active buy-in, avoiding the "not invented here" syndrome.

## Robust Process Design

The ToC philosophy determines whether or not a process is "robust". I suggest the "robustness" is determined by evaluating the effects of the process. Does it do what you want? Then it is good enough. There are some things installed in every ToC implementation. These are the minimums – those things that cause other things.

The processes are centered on the main decisions an organization makes:

1. Measurement systems – What is desirable?

2. Scheduling / order commitment – How can we satisfy the customer?

3. Pricing / order acquisition – What products or segments are best?

4. Investment / capital spending – What infrastructure is required?

## Scheduling/Order Commitment

The planning process is built around recognizing demand and reconciling it to the available capacity. It covers the medium and short term. Typical decisions are related to production and evaluation of vendor capabilities (make vs. buy). By and large, you'll be concerned with order promising, master scheduling, and capacity planning processes.

In long term planning, resource synchronization is not the issue; reconciling market opportunity to capital availability to break constraints is the primary concern. Typical decisions are related to capital costs like purchasing machines or new market initiatives.

## Execution Elements

The execution process concerns itself primarily with satisfying the plan and dealing with variation. The execution process creates valuable information that will be used in planning. The execution processes help you understand and manage the internal resources. These processes involve shop floor prioritization, batch sizing, and reporting policies.

## Measurement Systems

Organizational alignment is when all elements of a company work together in concert within the context of the organization's core ideology and type of progress it aims to achieve - its vision or goal

Let's break that down a little bit. Alignment is achieved when all elements of the company:

♦ Work together in concert

♦ In the context of its core ideology (culture)

♦ To achieve its vision

The new process will not be sustainable if it works at cross-purposes with the existing systems, culture and vision. Don't underestimate the shift in thinking that is required. The constraint management system is almost solely focused on increasing Throughput, with reducing cost and operating expense a secondary consideration. Therefore, if your organization's culture gives primary consideration to costs, you'll find that implementing constraint management fully in the organization will be extremely difficult[1].

The effort of creating processes that promote organizational alignment is at first geared towards organizational integration. Later phases of the implementation will affect greater parts of the organization and alignment will be achieved through behavior modification, not by scheduling.

# Commitment to Ongoing Improvement

Your implementation will generally follow this pattern: procedure development, education (conceptual and technical), implementation, huge success, procedure re-development, re-education and re-implementation. Up until

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[1] The cost-saving mentality is focused on the independent links of the organization. Constraint management focuses on the overall system, and is not concerned with the sub-optimization of the individual links within the chain. The goal of constraint management is to optimize the performance of the *entire* system.

now, everything has been conceptual – who can argue with paper?  But you are about to change the business.  What can you expect? What will the implementation look like?

It's difficult to give a specific answer to that question, since every organization is different.  In general, the implementation goes like this:

- ♦ Enthusiastic changing of some policies
- ♦ Unbelievably positive improvement
- ♦ Less enthusiastic changing of more policies and procedures
- ♦ Positive improvement
- ♦ The constraint moves to an area not addressed by the initial implementation.
- ♦ Pretty good improvement
- ♦ Leveling off

The first stage of the implementation will be like housecleaning, with many constraints that you identify and then quickly break.  Each time you break one your results will improve.  This period lasts about 90 days.  Eventually, you'll find a constraint that will be difficult to break.  Might be the market.  Might be the product.  Might be a $2 million machine.

Then comes the hard work; implementing new policies and processes to exploit and subordinate will take longer than the quick hits you've become accustomed to.  If you don't plan for it, the implementation can become bogged down and stall.  This phase may take 30 days; it might take 6 months.  It's in this phase the commitment you've gained in the prior steps will pay off.  It's not really that fun implementing a scheduling process and dealing with people that want to work on product early.  You'll also encounter  "the back to Egypt crowd"[2] here.   They're the ones who will insist that the business worked better before the constraint management concept came around.  They'll resist changing.  Project deliverables will be missed.  People will be "reassigned" because they won't change.  It will happen.  That's why we implement a measurement system first.  If we don't have any measurable results, it will be hard to fight these people.

## Summary

The implementation process is a system to build and maintain consensus to change (a process of ongoing improvement).  The technical aspects of the system are straightforward.  Therefore, you must address the change management, system design, and project management aspects of the implementation in the process.

The most difficult obstacle to a sustained implementation is inertia.  The implementation process has to move people from working *in* the business to actively working *on* the business.  A process of ongoing improvement requires vigilance and a desire to move to the next level.  There can never be a thing such as "good enough".  It's criteria that you change your measurements and the following behaviors to ingrain the policies and processes into the way things are done in your business.

Organizations that desire to achieve ongoing improvement can and do achieve successful, sustainable implementations.

Want to know more?

Contact me at 972-491-1333

Or

mwoeppel@pinnacle-strategies.com

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[2] The "back to Egypt crowd" refers to the Israelites that thought they were better off being slaves in Egypt than being killed at the Red Sea – just before the Red Sea parted.