*The discussion thus far, concerning Throughput Accounting for non-profit organizations, is shown below. The comments are shown in the order in which they were sent.*

*Please feel free to add your comments.*

From: John Talcott [mailto:jtalcott@utah.gov]
Sent: Thursday, June 07, 2012 5:46 PM

Subject: FW: TOCICO Conference Follow-Up

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Hi James -

Thanks for taking the time at the TOCICO conference to introduce yourself and share a few ideas with me that can help the Utah Department of Workforce Services along our TOC journey. It was truly a pleasure to meet you and we greatly appreciate the generosity of you and the rest of the TOC community in support of our efforts!

I'm not sure you can help with this question, but thought that I would be presumptuous and see if you have any ideas or suggestions for us. As I have learned more about the TOC concepts and researched the application of the principles in government settings, I've come across very little information in terms of Throughput Accounting for non-profit, service based organizations. Specifically, we are looking for ways to capture our 'net profit', return on investment and productivity. The challenge I see is that the basic decision making formulas in TA define revenue as the throughput measure. In our environment, we must define throughput in terms of transactions, activities or services rendered - not dollars. I am struggling with how to establish the financial metrics to evaluate our 'profitability' and the financial models to evaluate the ROI for our operations.

Do you have any insight into this challenge or are there any specific people in the TOC community, publications or resources that you can refer us to? I'm sure the answer is probably simple and in plain sight, but I'm just not seeing it!

Again, it was a pleasure to meet you and I thank you in advance for any insight that you may be able to provide as it relates to TA in not for profit organizations.

Thanks!
John Talcott
Director, Administrative Support Division
Utah Department of Workforce Services

James Cox ---06/07/2012 08:14:50 PM---
Date: 06/07/2012 08:14 PM
Subject: RE: TOCICO Conference Follow-Up

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John,
I cannot give you any definitive answers. It is a great question and little research has been done on this issue. I have copied several TOC experts (and myself) on this email so maybe there is an answer out

there or at least a direction of a solution. I have also attached a TOC booklist that I maintain rather poorly lately (last revised about six months ago) that might provide some direction. I am in the midst of updating it based on some leads given at the conference.

In the first US Air Force Jonah course around 1990, we had to decide on the goal and a measurement system. At that time, the goal was to be able to fight two wars simultaneously. The measurement system was Readiness measured on a scale of 0 to 100% scale. Different aircraft were scored differently and the Generals decided that 95% readiness was enough and that striving for greater than 95% was a waste of money and resources so it was measured as a necessary condition. Maintaining 95% was ample. Below was bad and above was a waste.

Of course, in addition to financial measures you should have measures for each dimension of your product or service that is important: Throughput instead of output, due date performance, short lead times, quality, high utilization of constraint. After deciding on the measure of throughput you can examine all the measures of T, I, OE and their ratios as described in the literature.
I have copied the best minds that I know in TOC. Maybe they will think a little about the problem and send you their thought. If you don't mind you might then review them and construct a brief white paper of a couple pages for posting on the TOCICO website temporarily so others can comment.
This collective examination of a problem might be a way to capture the best thoughts on tough problems for research topics and testing by practitioners. I will continue to think about the problem but there are a lot better minds than mine listed on this email.

Hope this is helpful.
Best regards,

Jim

On Jun 8, 2012, at 1:53 AM, "John Ricketts" wrote:
How about something like this?

In a governmental or non-profit organization, Throughput is not the goal, but financial viability is a necessary condition.
G = Goal units = products or services provided by agency or department, such as roads built, patients treated, children fostered, criminals apprehended, etc.
T = Throughput = intergovernmental transfers + charges + receipts + taxes = budget allocated to agency or department
I = Investment in public or non-profit program
OE = Operating Expense of public or non-profit program

Performance improvement objective is maximize G given T by managing I and OE
In other words, better performance means increasing G and/or decreasing I + OE

NP = Net Profit = zero, because T = I + OE unless agency or department has budget surplus or deficit.

There is no way to aggregate disparate goal units, but for a single type of goal unit with associated T, I, and OE, these performance measures would apply:

T/G = Throughput per Goal unit or G/T = benefit from program budget (for example, 100 patients treated by $1M program)
I/G = Investment per Goal unit or G/I = return on Investment (for example, 100 additional criminals apprehended by $100K investment in computers)
OE/G = Operating Expense per Goal unit or G/OE = productivity (for example, 100 miles of highway operated for $500K)

John Ricketts
Distinguished Engineer, CTO Industry Products, IBM Software Solutions Group

On 8/06/2012, at 10:19 PM, "Alka Wadhwa" wrote:
Subject: FW: TOCICO Conference Follow-Up

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Healthcare:
If I am in charge of a health department confronted with budget cuts;
Goal is to increase rate of improvement from disease to healthy state of a given population in a given time.
(I) investment is the budget over time that could be transferred to Operating Expense over time (principal, interest, depreciation etc.)
(O.E) is the general operating expense including reimbursement to healthcare providers.
Increasing velocity of T by Constraint Management, reducing waste by applying Lean and controlling variations by applying Six Sigma tools, we could work with considerably less budget or I.
Example: 10,000 people in a given county on welfare. Existing healthcare cost $ 200,000, budget cuts next fiscal year with available $ 100,000.
We map out each key disease management process. Increase Flow rates, cut waste and control variations. You might be surprised with results.
I hope I understood and answered the problem correctly.

Gary Wadhwa

From: Vicky Mabin [mailto:Vicky.Mabin@vuw.ac.nz]
Sent: Friday, June 08, 2012 6:42 AM
Subject: FW: TOCICO Conference Follow-Up

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And adding to Alka's example, 'I' can also include passive inventory, such as patients in hospitals and on waiting lists,
Kind regards, missed seeing you all
Vicky Mabin

Sent from my iPad

From: John Thompson
Sent: Friday, June 08, 2012 1:07 PM
Subject: FW: TOCICO Conference Follow-Up

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Productivity = T / OE

Or

Productivity = Units / Time

Or

Productivity = Sum Units (Extended Time Period) / Time (Extended Time Period)

Or

Productivity = Sum Units (Extended Time Period) / Sum of the Cost of that Time (Extended Time Period)

Now, how to define the Units is the hard part (related to the purpose):
- Health Units.
- Number of Satisfied customers.
- Number of People attended to.
- …….

Hope this helps
Regards - John
John Thompson, Global Focus LLC

From: Richard Moore [mailto:Dmoore@prochain.com]
Sent: Friday, June 08, 2012 12:07 PM
Subject: FW: TOCICO Conference Follow-Up

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At the risk of straying from the original post and of being thought of as one who views the medical world as a for-profit business (it is by the way and even non-profits have the hard necessary condition of cash flow) if possible one should consider measuring throughput in dollars. In medicine it is a small step from services rendered to dollars--the services provided by medical facilities are reimbursed on the basis of a set of Current Procedural Terminology (CPT) codes. This set of codes is updated annually by the AMA and describes services (e.g. medical, surgical, and diagnostics); the codes are used to standardize information about medical services and procedures among physicians, coders, patients, and payers. It could be thought of as an exchange rate for services provided. More services with the same resources leads to more throughput. And yes that can lead to perverse incentives—especially if the physician is a part owner of the underused lab or MRI facility. Clearly however, an analysis of a pharmacy, lab, or doctor's appointment process can be used to identify constraints in the system—policies, procedures, or real limits that impede flow, increase queue time and affect patient satisfaction. Many moons ago, I had the opportunity to work with some great folks in the USAF Medical community on just such an effort. From TP to constraint analysis using the old 5-step process—it all works quite well. The AF medical facilities are a lot like the situation described by Gary Wadhwa in his earlier post—a decreasing budget combined with a fixed catchment area with responsibility for treating all eligible beneficiaries. Even though the USAF facilities had a fixed budget, the revenue equivalent for services provided could

be calculated.  This enabled a comparison—is it cheaper to provide the service or could it be outsourced for less.

Lt General Chip Roadman (then the USAF Surgeon General) described the medical some of the medical challenges as being a 3-legged cloud.

- Insurance companies want to pay for minimum services or not pay at all (to enhance their profits)
- Patients (primarily those who have no payment responsibility) want, and often demand, the best services available regardless of cost (I've seen "government funded" ER visits for a headache)
- Providers fear litigation if they fail to do everything within the scope of modern medicine. (They may "test for Zebra if they hear hoof beats"   (No matter how remote the possibility of the problem we need to test for it to avoid liability)

Plug this cloud into a larger system where there are more and more advances in technology (and a never ending stream of lawyers needing work) and you end up with a system of care that costs a lot.

While primarily a dollarized measure of output, the CPT codes could also be a surrogate measure of achieving the wellness goal.  There are codes for preventive medicine services, as well as those for every kind of treatment imaginable.  One could track trends in treatments to track a potentially revised goal—one of wellness (rates of prevention up relative to treatment).     The stated goal of "increasing rate of improvement from disease to healthy state of a given population in a given time" will be very difficult to measure in aggregate.   Without clearly defined measures of improvement getting to the goal can be a tough thing to achieve.

Clearly, identifying and managing constraints in a medical delivery system will increase throughput (number of patients seen, CPT reimbursement, and potentially wellness).  Meanwhile approach to increasing rate of improvement can take many forms—some are much more costly than others.     A number of wellness enhancers (e.g. pharmaceuticals) also place a strain on the cost of healthcare.

Something to muse over,
Dick

From: Lisa A Ferguson
Sent: Fri, Jun 8, 2012, 16:03 PM
Subject: FW: TOCICO Conference Follow-Up

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Hello all,
This is an interesting discussion. I have some thoughts to share. The goal and necessary conditions of an organization are 1) make more money now and in the future, 2) satisfy the market now and in the future and 3) satisfy employees now and in the future. One of these three is the goal of the organization, while the other two become necessary conditions for achieving the goal. The goal of not-for-profit organizations (including some hospitals and government) is not to make money; however, making money is a necessary condition for achieving the goal.

Dr. Eli Goldratt presented in his best-selling novel, The Goal, six measures of performance. He pointed out that the three financial measures are profit, ROI and cash flow. Note that the organization in the

novel was a for-profit organization. Therefore, having these three financial measures makes sense. Then, he stated that the three operational measures were T, I and OE, in that order of priority. We needed to have few measures with clear priorities in order to drive the right behaviors. Initially, "I" stood for Inventory, but was later changed to Investment. (Note: In other TOC materials, the six measures and connections between them were further described.) Throughput (T) was defined as goal units. In the case of a for-profit business, T was defined as revenue less the totally variable costs (TVC). The goal units need to be defined for the organization based on what the goal is.

After careful thought and consideration, Dr. Antoine van Gelder and I defined the generic goal of hospitals to be the following (the strategy in level 1 of the generic Transformational S&T tree that we wrote):

The hospital is more and more adept at providing excellent healthcare*, while providing a rewarding work environment (for health care providers, staff and management) and significantly improving financial performance.
*(patient outcomes, patient safety, effective treatment times and patient satisfaction)

Every word counts. We wrote this goal or high level strategy in the order we did with the words we chose for specific reasons. For example, we wrote "improving financial performance" because we wanted it to apply to any hospital in the world – for-profit, not-for-profit or government-run hospitals. We chose to include the goal and necessary conditions in the strategy in part because they are "different identicals."

I recommend that the Utah Department of Workforce Services work on writing its goal (strategy of level 1 of your Transformational S&T tree) and then work on defining the financial and operational measures of performance. Feel free to contact me if you are interested in my feedback on what you came up with. Good luck!

Best regards,
Lisa

Lisa A. Ferguson, PhD
Founder and CEO, Illuminutopia

On 10/06/2012, at 6:30 AM, "Eli Schragenheim" wrote:
___________________________________________
Hi all,
The ultimate/strategic constraint of most non-profit organizations is MONEY! The assumption is that when the management is truly effective the budget is used in a way that maximizes the goal units the organization generates. Another assumption is that the organization has more demand to goal units that what it is able to generate.
Thus, when the two assumptions apply then the T is the rate of goal units constrained by the money the organization succeeds to get in order to generate the goal units. So, T/CU is actually goal units divided by money (dollars).

When the non-profit organization is able to generate revenues that it can use for itself (it is part of the budget) then the constraint is still the budget supplied by the external body (like the government).

When the organization can fully support itself - revenues are equal or larger than the money required to generate the goal units, then we should expect it to grow until the whole demand for goal units is fully met. I still like to see such a "non profit" organization.

This is definitely a worthy area to explore. But, do you agree that the ultimate constraint for such organization has to be money?

Eli Schragenheim

Subject: FW: TOCICO Conference Follow-Up

___________________________________________

Hello Eli
I think you're right. And I think it leads us to a strange paradox.
If a non-profit organisation has to exploit the constraint, i.e. money, that means paying it absolute attention, treating it like king.
A for-profit organisation which has money making as the goal will be paying close attention to whatever its constraint is. By definition this isn't money.
Isn't it ironic that a non-profit organisation has to pay closer attention to money than a for-profit organisation?

An example is the government-funded science sector, which in this country is required to deliver about a 10% return for the government. This is a severe constraint, and it seems to be more important, more binding, than it would be if it was in the private sector where the pursuit of profit is the goal. The net effect is that the pursuit of the real goal, good science, can quickly become secondary. Unless, that is, they apply the T/CU criterion to their decision making.

Vicky
Sent from my iPad

From: Gary Wadhwa
Sent: Mon, Jun 11, 2012, 5:07 AM
Subject: FW: TOCICO Conference Follow-Up

___________________________________________

Eli,

I think that Money is an effect of giving some value to someone. Cause is the value, effect is the money—a measurement of success of delivering that value. What do you think?
In my for-profit health care organization, the cause is the delivery of quality care to my patients, the effect is the payment for that care. If I collect payments more than my operating expenses, I make a profit. In nonprofits, as the name says, NP =0.

Can we use the following formula for Non Profits?

Let us say that there is budget X that is the allowed 'Operating Expense (O.E)' of the Department. O.E includes Investments expensed over time (Principal, Interest, and Depreciation).

NP = 0 = T – O.E
Let us say the budget allowed was $ 1,000,000 to treat 1000 patients dependent upon the county government for care.
0 = (1000 patients * $ 1000 per patient for health care) - $1,000,000

If the budget is cut by 25%, we have $ 750,000 for 1000 patients

We could use TOC to identify the constraint to flow of 1000 patients. Lean tools can help exploit the constraint and reduce waste. Six Sigma tools could reduce variability, medical errors, length of stay in the hospitals. I think this 25% cut might be easy to achieve.

The problem will come when new technology/innovations are introduced in health care and everyone including patients dependent upon government welfare programs (Medicaid, Medicare) wants those expensive diagnostic tests and treatments. Add to this Medico-legal environment, the operating cost goes back up or exceeds budgetary allocations.

We, as a society, have a serious dilemma.

Government should pay for health care for everyone vs. Individuals pay for their own health care and buy the care they want. If government gives help to a few people who have chronic illness and are unable to find private insurance to pay for it, then they could control the expenses. In order to control cost in government run programs, we will have to stop development of expensive experimental diagnostic or screening tests. We will have to ration care and force preventive care on people. Obesity, smoking and or drug use that raises government expenditure will have to be controlled by force if necessary. Like in Europe, we must allow breast cancer screening at age 50 not 40 like in USA. If people want to pay for their tests, they should have the freedom to pay out of pocket and get the tests.

I don't know about the other departmental budgets but food stamps program probably runs the same way. If you are running a department for food stamps with budgetary cuts, you might be able to streamline the flow of paper work, reduce fraud and get the food stamps to those who really need it. This might help you manage the program within budgetary cuts. But let us say that the politicians come out with promises for Filet Mignon steaks for every food stamp recipient . . . then you will have hard time providing care within the budgets.

These systemic conflicts must be resolved to get the system (Government or any non-profit organization) working more efficiently and effectively.

Please help me if I am missing anything and/or have incorrect assumptions.

Gary Wadhwa

Eli Schragenheim ---06/11/2012 07:38:42 AM---
Subject: Re: FW: TOCICO Conference Follow-Up

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Hi Gary,
For-profit organizations give value to customers and are paid for it.  For some sorts of value this scheme cannot work, because the customers are unable to pay the full price.  All the public-sector organizations

are like that - they give immense value that the government (or the state or the municipality) cannot afford to let the business oriented companies do it; for instance, the Police Force or a school for kids with learning problems.
Some, but definitely not all, truly non-profit organizations are able to "sell" their service, but if they are truly non-profit then at least some of their services for free or for very low price. There are organizations that are on paper non-profit, but actually turned themselves into for-profit and thus they maximize the financial T and not the real T of the value they claim they want to maximize.

An equation of NP = T-OE=0 cannot be achieved in reality that is impacted by uncertainty. One of the big flawed government policies is the tendency to take any surplus money at the end of the year instead of increasing the budget for next year. In return some public sector organizations, certainly in my own country, create an intentional deficit, committing to higher OE than was budgeted in order for the government to actually increase the budget. When you see such a behavior done in purpose by the manager of a large hospital you can evaluate the pressure on the shoulder of that manager.

I claim that money is the STRATEGIC constraint. This means that once TOC is used and succeeds to reveal ability to serve more customers or to give to the same customers more value, then the money/budget would become the actual constraint!

I know enough to know very clearly that I DON'T KNOW how to exploit the budget given to the police, the army, the justice system, or to various educational institutions. You might claim that we are still not there and much more could be done with the same amount of money. But, after that phase you need to think how to use the budget in the way that would maximize the value.

By the way, when the budget is the constraint, the exploitation scheme has to determine what should be the weakest link in the Operation part.

Friends, I'm far from home and need to concentrate on giving value as part of my for-profit small organization. I might be too pressed with my time to continue this discussion at this point of time. I just wanted to give you my inputs. Eventually I hope that some research would be done to create a comprehensive TOC approach to manage non-profit organizations.

Eli