

TOC-Lean – focus on the goal not the measures!

Thoughts on the use of a score card to determine progress towards the goal of a manufacturing company

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What is the Goal?

- ❖ Usually the goal of a manufacturing company is defined as “making money now and in the future”.
- ❖ This then determines the necessary conditions that must apply as being:
 - Satisfy the market/client now and in the future
 - Satisfy the team (internal) now and in the future
- ❖ This also determines the key measures to be used when making money is the goal: Profit, ROI and Cash Flow

The Global Measures

- ❖ Most manufacturing companies readily accept these three measures: Profit ROI and Cash Flow however.....
- ❖ For making decisions they are close to useless therefore we need measures that aid decisions
- ❖ There are also questions that must be answered



Some key strategy questions

- ❖ Are we improving bottom-line cash results?
- ❖ Are we anticipating and responding to customer needs?
- ❖ Are we performing key processes effectively?
(note not efficiently)
- ❖ What is the quality, engagement and satisfaction of our staff?

And from them...

- ❖ How can we improve cash performance?
- ❖ Financially what is most critical to us?
- ❖ How do we maintain or improve service levels while maintaining control over expenditure?
- ❖ Who are our customers and what must we do well to satisfy them?
- ❖ At what processes must we excel if we are to meet customer needs?
- ❖ Do we have the right organisational climate (culture, alignment etc) for success?
- ❖ Do our employees have the tools they need to meet customer requirements?
- ❖ Are we properly managing the risk of cash volatility, or do any of our activities put our brand image at risk?

Key Performance Perspectives

❖ Financial Perspective

- What is happening to our key financial measures in terms of Profit, ROI and Cash Flow

❖ Risk Perspective

- Is our current level of performance putting our business at risk e.g. delivery performance, quality performance, overall lead time...

❖ Service Perspective

- How well are we responding to the changing needs of our clients – reduction in lead time, reduction in price, increasing value...

❖ Process Perspective

- How well do our key processes perform, are they really effective? Do we understand the impact of waste – indeed can we define waste properly in the context of our overall process?

❖ Workforce Perspective

- What is the quality of our workforce? Do we invest in our people? Do we engage them in the whole of the improvement process?

Some key issues that we often see in companies!

- ❖ Too much expediting
- ❖ Too many changes to schedules
- ❖ Too much inventory within the system
- ❖ Not enough of the right product and too much of the wrong
- ❖ Lead times too long for sales
- ❖ Due date performance is <80%
- ❖ Efficiency measures driving the wrong behaviours
- ❖ Lost sales
- ❖ Inventory turns too low
- ❖ Suppliers fail to deliver on time
- ❖ We have insufficient profit to drive growth
- ❖ We keep losing key people and have great difficulty in finding replacements
- ❖ **This puts all the perspectives described on the previous slide at risk so what is going on?**

What is the problem?

- ❖ In many examinations of companies over the past seventeen years one key factor stands out – *people work in direct line with the way they are measured!*
- ❖ What does this mean?
- ❖ *That the measure has replaced the goal as the primary driver for what people do!*

So change the measures!

❖ What must a “measure” do?

- Tell me if I am moving towards the goal
- Encourage everyone to focus on the right things to be done
- To help me determine what is, and what is not, waste
- To tell me when to make a change, and when to leave well alone
- To encourage people to think of better ways of achieving the goal without the constraint of an erroneous measurement



What does *TOC-Lean* have to say

- ❖ The global measures of Profit, ROI and Cash flow do not work for making decisions
- ❖ The current dominant paradigm of using cost allocations does not work and neither does the use of efficiency type measurements for all resources
SO....
- ❖ Let's use a more focused approach for measurements that aid decision making

Throughput Measurements

- ❖ There are three key measures in *TOC-Lean*
 - *Throughput* – defined as the rate at which the system generates cash through sales revenue, less the cost of raw material ($T = Sr - RM$)
 - *Investment* – defined as the cash tied up in the business
 - *Operating Expense* – defined as the money that goes out in terms of labour, rents, heating and lighting etc

- ❖ So when making a decision does “T” increase?
does “I” remain in control or decrease, does “OE”
remain in control or decrease?

The link to the global measures

❖ Profit = T-OE

❖ Productivity = T/OE

❖ ROI = (T-OE)/I

❖ So that covers finance but what about the other perspectives?

- ❖ Within a manufacturing environment *TOC-Lean* advocates the use of the following measurements:
 - Due Date Performance (DDP) or more usually written as delivering the product or service 100% On-Time, In-Full (OTIF) with Zero Defect as a given
 - Lead Time reduction – is it going down, even with an increase in volume through the facility?
 - Material Released on Time (MROT) again at an expected level of 100% achievement
- ❖ The same applies to new product development or indeed any other project driven environment.

So what is the difference?

- ❖ The *TOC-Lean* measures described so far are based on a number of assumptions:
 - First that the organisation is seen as a series of dependent links in a chain
 - That within any one chain there will be a weakest link – the constraint
 - That the capacity of the constraint will always be less than the other resources in the chain
 - That improving a non-constraint does nothing for the overall performance of the chain – this is why we need to learn how to focus.

Using *TOC-Lean* to focus

- ❖ The five steps of focusing within the Theory of Constraints (TOC) are as follows:
 - *Step One* – identify the constraint
 - *Step Two* – exploit the constraint
 - *Step Three* – subordinate all other activities to the performance of the constraint
 - *Step Four* – once control has been achieved elevate the constraint
 - *Step Five* – go back to step one and prevent inertia

OK, so now what?

- ❖ The application of the *TOC-Lean* approach whether it is in Operations, Product Development, Programme and Project Management, service industry or some other industry, always includes a technique known as Buffer Management.
- ❖ Buffer Management is the tool for telling me that progress towards the goal in the context of the measures described is at risk

Buffer Management

- ❖ This is about the ability to manage time with respect to delivery, whether it is a product, a service, a project – the content is not the issue, the process is.
- ❖ Buffer Management is about measuring the performance of the process and determining when there is a problem – what is called a “buffer violator”
- ❖ This is something within the system that is putting the goal at risk as defined either by a delivery measure (OTIF) or a financial one (T)



This is when Lean and DMAIC enter

- ❖ Every Buffer Violator must be dealt with properly
- ❖ Once the real impact of the Buffer Violator has been determined it is essential that the appropriate tool from the Lean/DMAIC tool box is used to eradicate the problem so that it never violates the buffer in the future
- ❖ This means that each time a buffer violator is removed the system is more robust, confidence rises, capacity increases, which in turn means more volume for the same resources which means more profit, improved ROI and improved cash flow – which is where we came in!

So what are the lessons?

- ❖ Most measures in use do not aid performance improvement towards the goal
- ❖ *TOC-Lean* measurements determine an holistic understanding of the system and always focus on the goal
- ❖ Within the chain of dependent events there is always a weakest link – the five steps of focusing is the way forward here and then.....



Implement *TOC-Lean* approach

- ❖ This is that approach that fits your environment
- ❖ It contains Buffer Management
- ❖ From Buffer Management we can determine the buffer violators and then use the eradication tools of Lean and DMAIC to speed up the flow
- ❖ Check we have improved and then keep going round the loop of on-going improvement
- ❖ Reap the rewards!

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