

Synchronous Solutions

The continuous pursuit of excellence

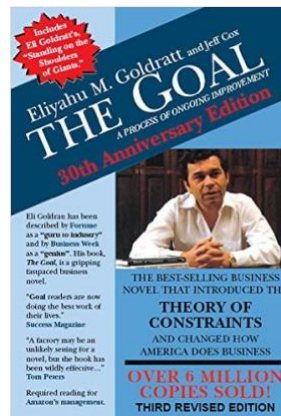
The Goal

A process of ongoing improvement

What is the goal of your company?

- Producing quality products
- Providing excellent Customer service
- Maintaining a pleasant work environment for your people
- Sales growth every year
- Lower costs
- Survival

The fact is, your company is in business to make money. If you were excellent at every item in the list above, but you were not profitable, you would go out of business. Your business should be organized to “make more money now and in the future.” Earn a reasonable profit in the present conditions and set your company up to make more money in the future. This is the message in The Goal, a book written by Dr. Eliyahu Goldratt which is one of best business books every written.



The Goal is written as a novel and explains the business approach called *The Theory of Constraints (TOC)*, now known as Synchronous Flow. It is the story of application of the TOC principles to transform an underperforming company to an excellent one. Moreover, it is the story of how *continuous improvement* can be a systematic approach to business management.

If you haven't read this book, I encourage you to do so. If you haven't read it recently, I encourage you to do so. It is available from any book seller in hard copy, digital or audio formats.

One of the key principles of Synchronous Flow is Throughput Accounting, which is a simple, yet extraordinary, way to look at a company's finances. It focuses on revenue generation, not product costing. As such, it focuses on the positive potential of a company (the generation of wealth) and not on the reduction of costs. That is not to say that good stewardship of resources is ignored. It's just that the focus is on generating revenue, not cutting costs.

Another power of Throughput Accounting is its focus on system effectiveness as opposed to local efficiencies. This aspect alone is sufficient to deliver powerful measuring tools into the hands of the business manager. Throughput Accounting provides financial tools that allow operational managers to make excellent, and quick, business decisions.

An important aspect of Throughput Accounting is that the metrics are derived using the same data as in the existing cost accounting system. This means that there is no investment in additional accounting software or resources. No additional entries have to be made. The numbers are simply calculated in a different way and presented in a different report format. The bottom line is always the same in either accounting system.

**Throughput Accounting focuses on creating
more value now and in the future.**

There are three important metrics regarding "making money."

- **Net Profit (NP)** is an absolute measure. If your income exceeds your expenses, you made money. Earnings before interest, tax, depreciation and amortization (EBITDA) is a common measure of a company's operating performance.
- **Return on Sales (ROS)** is a relative measure. Making \$100,000 on ten million in annual sales is only a 1% ROS. Not very good. In fact, a privately owned company should expect at least a 10% ROS every year.
- **Cash Flow** is a *survival* measure. If you have enough cash flow, it may not be an important metric. If you don't have enough cash flow, it is the only important metric.

Throughput (expressed as \$T) is the rate at which a company earns money through sales. *It is the measure of value added.* A company buys raw materials, transforms them into finished products and sells them to their customers. Throughput is the measure of value added due to the transformation of raw materials into finished products. The formula for Throughput calculation is:

$$\text{Throughput} = \text{Sales} - \text{truly variable expenses}$$

Truly variable expenses (expressed as tve) are those outflows of cash associated directly with a specific product or job. They are "variable" in that changes in tve are directly associated with changes in sales. Typical variable expenses are:

- Raw materials
- Transportation costs for the raw materials
- Outsourcing (farming out manufacturing to another company)

- Sales commissions (paid per sale, not per time period)

If all four were active, the formula for \$T would be:

$$\text{Throughput} = \text{Sales} - (\text{raw materials} + \text{freight} + \text{outsourcing} + \text{commissions})$$

The continuing objective should be that Throughput is always trending up.

Inventory (expressed as \$I) reflects the money required to purchase the things the company intends to turn into \$T. Essentially, this includes the investment in all raw materials, work-in-process and finished goods inventories. The value of \$I is calculated at the price paid to the vendor for the materials. Generally, the value of materials does not increase as they move through the business system; they do not “accrue value” in the Throughput Accounting approach.

The continuing objective is to work in a “lowest reasonably possible” Inventory environment. Not only does this approach control the investment in WIP inventory costs, it also is the major factor in *system velocity*. A simple way to decrease process times is to reduce the WIP inventory. Maintaining one week of WIP inventory means that your process time will also be one week.

Operating Expense (expressed as \$OE) reflects the money the business spends in turning Inventory into Throughput. This includes all outflows of cash that are not associated with a product or job; essentially all expenses not classified as *tve* (i.e. all labor and all overhead). Included are all wages, salaries, occupancy costs and all other overhead associated with operating the business.

The company should strive to be good stewards of its resources. It should not carry an operating expense that is not clearly necessary. However, it is important to maintain a predetermined level of *Protective Capacity* in order to be able to quickly respond to the inevitable and unpredictable fluctuations of daily business operations. Protective Capacity is not excess capacity; it is required capacity to maintain a smooth operating system, which is always more productive than a “balanced capacity” approach. As a result, Protective Capacity helps to *make* money. The recognition that there must be a plan for absorbing the effects of the inevitable attacks by “Murphy” is a hallmark of the Synchronous Flow business process and it supported by the metrics provided through Throughput Accounting.

Throughput Accounting Financial Statements result in exactly the same bottom line net profit as do the traditional cost accounting financial statements. The difference is in how Throughput Accounting handles the revenue and expense elements of the business. Costs associated directly with a specific sale (materials, outsourcing, freight and commissions) are deducted from the sales price to reflect the value added for that sale, called Throughput. All other costs (all those not associated with a particular sale but are regular costs of the business including all labor and all overhead) are listed as Operating Expense. Please note that there is no attempt to determine the cost of making a single product (product cost) or to calculate profits on a single order. There is no attempt to allocate any expenses in any way.

Net Profit (EBIDTA): Net Profit is calculated as Throughput minus Operating Expense:

$$\$NP = \$T - \$OE$$

Once the business system has covered all fixed operating expenses (OE), any additional \$T flows directly to the bottom line.

Return on Sales: ROS is a contrasting measure of the effectiveness of the bottom line to top line metrics of the company. It is the ratio of net profit to sales and is calculated as:

$$ROS\% = \$NP \div \$Sales$$

Productivity: Productivity is a simple and powerful measure of business effectiveness. It reflects the relationship between \$T (the measure of value added) and \$OE (the money the company spends to create the \$T). This is the basic effectiveness ratio (output over input). Since it does not reveal any sensitive information, it can be shared with company employees as the “score” of overall system performance on a daily basis. As such, it can be used as a valuable motivational tool for the production employees. It also can be used as the basis for a performance incentive system that can share the fruits of improved performance with the people who worked to create it. The Productivity Score (PS) is calculated as:

$$PS = \$T \div \$OE$$

If PS is equal to one, the company is at break even. Typically, a PS score of 1.25 will produce a ROS% of about 10%.

Octane: Octane is a measure of revenue generated per job relative to the time it consumes at the business system Control Point. This accomplishes a focus on the resource in the system where revenue is generated. The clearly communicated focus is that this resource should operate as effectively as possible. This means that this resource should be optimized (well engineered and finitely scheduled) and that all other resources should subordinate all their activities to assure the most effective operation of the Control Point.

Ideally, the Control Point is where revenue is generated. This is “where the cash register rings.” Revenue generated per hour of time at this function (called Octane), is a clear indication of effectiveness at this critical resource. Octane can provide value comparisons between products, market segments and Customers. As an approach toward continuous improvement, it allows a focus on the prioritized issues that affect the critical Control Point of the business.

Octane is calculated as:

$$\text{Octane} = \$T \div \text{time consumed at the Control Point}$$

\$T is the measure of value added for that job and is divided by the measure of time at the Control Point that is consumed in completing that job. Where Installation is the Control Point, Octane would be calculated as \$T divided by travel time plus installation time.

The following is a typical example of a Throughput Accounting financial statement for one month. This example is of a company producing about \$10,200,000 in annual sales.

	Monthly	
Sales	\$850,000	
tve		
Raw materials	\$295,000	
Freight	5,000	
Outsourcing	\$0	
Total tve	\$300,000	35% of Sales
Throughput (\$T) (sales – tve)	\$550,000	65% (called the \$T Ratio)
Operating Expense (\$OE) (all labor and overhead)	\$425,000	
Net Profit (NP) (\$T - \$OE)	\$125,000	EBIDTA
Productivity (PS) (\$T ÷ \$OE)	1.29	
Return on Sales (ROS) (NP ÷ sales)	15%	
Total Control Point time (Travel + Installation time for all jobs)	786 hours	
Average system Octane (T/time)	\$700	(\$T ÷ 786)

Throughput Accounting is all about *operational decision-making*. It is one of the elements of the business management system called Synchronous Flow.

For more information on Throughput Accounting and the principles of Synchronous Flow, contact:

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