Ever since we embarked on the Viable Vision, the mission of our company is to become an ever flourishing company. A Company that is capable of exponential growth by relying on processes that ensure growth does not come at the expense of stability. Our main drive is to establish, capitalize and sustain a decisive competitive edge. A decisive competitive edge can only be created by satisfying a significant need of the market to the extent that no other significant competitor can. The needs we chose to capitalize on are Reliability and Speed.

During the last years, we have fully transformed our sales approach. We have changed from selling products to selling solutions, from selling based on price to selling based on value. Our sales people understand more and more that chasing orders is not the key for growth; that they should possess the skills to close business deals. We have implemented changes not only in the way we are selling, but also in the way we administrate and manage sales opportunities.

The results of these efforts can be viewed in many aspects. Our sales and throughput have increased in the last years. The market (based on the reaction of clients) perceives more and more that our company is not just another supplier. We have significantly changed our product mix to better throughput products. We have increased our share with existing clients. We have increased our client base and reduced our dependency on few big clients. The efforts have also produced less tangible results; looking at the behavior of our departments, it is evident that we have dramatically enhanced our ability to initiate and adopt changes.

Despite these results, we all felt that something was still lacking. The most important measurements – profitability and sales volume – were a clear indicator that there was still a big gap between the current reality and the reality we wish to create. When viewing the trend of sales and profit growth, it was apparent that we were not growing at the desired rate. The obvious question was, *what is still missing?* With all the improvements we had made, why were sales not growing at the much faster rate that all indicators showed we should have achieved?

In the last few months we have improved the measurement and reporting of our sales efforts. One striking measurement was our hit ratio. Our funnel seemed loaded with opportunities, but we were winning very few of them. Every client we presented our offer to, liked the offer, and
eventually we won at least one of the requests for projects\textsuperscript{1} that he requested from us. However, most of the requests by these clients which entered the sales funnel, did not turn into orders. Moreover, the same clients, who expressed genuine interest in our offer, were evidently introducing many promotions to the market without us even participating in the process. The number of projects in our sales funnel was 250; our hit rate was at 11%.

Early July 2008, I read Eli Goldratt’s new article “Standing On The Shoulders Of Giants”\textsuperscript{2}. The article allegedly deals with production issues; it highlights the concepts which underlie three of the major production system breakthroughs of our times: Henry Ford’s production lines, Taiichi Ohno’s Toyota Production System (TPS, later known as Lean) and the Drum Buffer Rope (DBR) application of the Theory Of Constraints which was developed by Eli Goldratt. You may ask yourself why this is relevant to the topic of sales. Well, the concepts underlying these breakthroughs struck me as being highly relevant to the management of sales opportunities.

The following paragraph is taken from the article\textsuperscript{3}:

“In summary, both Ford and Ohno followed four concepts (from now on we’ll refer to them as the concepts of supply chain):

1. Improving flow (or equivalently lead time) is a primary objective of operations.
2. This primary objective should be translated into a practical mechanism that guides the operation when not to produce (prevents overproduction). Ford used space; Ohno used inventory [Goldratt uses time].
3. Local efficiencies must be abolished.
4. A focusing process to balance flow must be in place. Ford used direct observation. Ohno used the gradual reduction of the number of containers and then gradual reduction of parts per container. [Goldratt uses buffer time consumption]”

Our question was, do these concepts apply to the sales funnel management environment? The “work” flowing in the sales funnel is sales opportunities. How important it is to ensure opportunities flow with as few disturbances as possible through our process? Just like in production, delays in flow translate to longer lead times. In both environments, longer lead times means poor service to clients; it means deferred income; it means some of the entities flowing (be it work orders or sales opportunities) suddenly become urgent, and so on. In sales, just like in production, delays in flow often entail higher cost (be it work-in-process inventory – WIP – or sales expenditure).

On top of the implications on cost, it is commonly known that when the system is clogged with WIP it gives rise to quality problems (masking them and making them more difficult to

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\textsuperscript{1} In our company, we refer to sales opportunities by the term “projects”
\textsuperscript{2} I highly recommend each and every one of you to read this article.
\textsuperscript{3} Copied here with the permission of Dr. Eliyahu Goldratt
manage). In essence, the same goes for the management of sales opportunities. Delays in flow of opportunities typically entail quality issues, as salespeople and sales support functions need to deal simultaneously with more opportunities which are not flowing smoothly. It is apparent, therefore, that all the reasons why flow is important for production apply as well to the management of sales opportunities.

However, there is one striking difference. As a matter of fact, in sales, flow is of much greater importance. Unlike in production, the longer a sales opportunity is delayed in a certain step, the lower is the probability to win this opportunity. Moreover, when opportunities are not flowing, more time and attention is required by the salesperson or the function dealing with these opportunities. Try to imagine that in production the longer the work order is in the queue, the longer the touch time becomes. In sales this is the reality. The attention given to delayed opportunities is at the expense of bringing in and following up on other opportunities. Flow, therefore, is certainly a primary objective when it comes to the management of opportunities in the funnel.

What about the second concept of supply chain?

The second concept (preventing overproduction) is known by our production people as “choking the release” (not releasing work to the floor until a certain time – the buffer - before its due date). The underlying assumption is that having too many orders on the floor creates jams, masks priorities and disrupts the flow. Is this relevant to the sales environment? Let’s examine the ramifications of having too many open projects. Having many open projects means that every resource involved in the sales process is simultaneously responsible for performing tasks across multiple projects. When a resource is working on many projects, bad multi-tasking is unavoidable; the resource jumps from one project to another without really advancing any of the projects. When different resources need the inputs of each other to complete their tasks, bad multi-tasking intensifies. To complete the task, one needs the input of the other (which, for example, can be a designer, a buyer, an account manager or the client), but since the other is not available (busy on another task), the first resource jumps to another task. When the second resource becomes available, the first one is now busy on the other task, so the second resource jumps again to another task and so forth. Basically, the two resources are frequently waiting for each other. Bad multi-tasking significantly delays the cycle time and derails the attention (and with it the quality of work) given to each opportunity in the funnel. When the response time is longer and the quality of work is reduced, the chance to turn opportunities into orders is significantly reduced.\footnote{There are many fun and insightful exercises that demonstrate the damage of bad multi-tasking. In our company, we particularly like to use the ‘paper-tearing’ game.}
You may think this is not a major problem in handling opportunities in the funnel because one often knows which projects to focus on, and by that can avoid bad multi-tasking. In fact, our dear salespeople are smart and often have enough experience to tell early on which opportunity is more interesting to the company (meaning it is real, it will be realized in the short term, it yields good throughput and it is not a complicated project that would risk our performance). It is not surprising, therefore, that more attention is given to those opportunities which are experiencing higher hit ratio and shorter sales cycle. In our company, I’m convinced, many thought this was actually a proof that we had managed the bad multi-tasking, that anyhow we focused on the good opportunities. However, on this point we were terribly wrong. We were completely blind to the negative ramifications the immense number of open opportunities had on the attention given to processing good opportunities, and more importantly, on the attention given to introducing more good opportunities.

The following cause-effect diagram (Current Reality Tree) describes the ramifications of introducing almost any request by the client to the funnel.\

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5 The way to read a current reality tree is to start from the bottom of the tree upwards. You read “if [statement at the bottom of the arrow] then [statement at the top of the arrow]”. If several arrows are tied together with an ellipse then all the statements tied together at the bottom of the arrows should be read using “if [first statement] and if [second statement] then [statement at the top of the arrow]”.

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And the ramifications on sales support functions such as engineering...
As we can see, a starting point to this current reality tree (cause-effect diagram) is the phenomenon, “Salespeople fill the funnel with almost any request coming from a client”. Why did we feel the pressure to do so?

Since I believe people in general (and definitely in our company) work with good intentions, there must be a positive need that drives this behavior. As is logically shown in the current reality tree, the need that drives us to fill the funnel with almost any request coming from a client is, “Ensure enough opportunities”. We assume that to ensure high sales volume, we should take advantage of any opportunity that we have and not limit the funnel. Since the hit ratio was low, we believed that we needed to introduce as many opportunities as possible to the funnel in order to reach the target. We did this even when we were skeptical about the validity or value of the opportunity we introduced. We hoped that some of these bad
opportunities would turn good. We hoped that the client would eventually give us good opportunities as long as we interact with him, so we accepted the pseudo-orders he requested. We assumed that to reject a request coming from a client would hurt the relationship. All the above assumptions are not coming from thin air; they are based on anecdotal instances that we encountered in our engagements with clients. Of course, we also assumed that there are not enough good opportunities around to generate the needed volume. To summarize this point, “In order to ensure enough opportunities in the funnel, we believe we must fill the funnel with almost any request by a client”. This practice was perceived as a necessary condition in our reality to generate the desired volumes.

What we did not pay attention to is the negative ramifications of doing so. The fact that flooding the sales funnel with opportunities leads directly to bad multi-tasking on both sales people and support functions, created a false impression of the funnel and masked priorities. As explained above, the impression that we are able to focus only on the good opportunities and by that avoid bad multi-tasking is an illusion. Flooding the funnel unavoidably leads to less attention being paid to bringing in and following up on real, good projects. Note that not only our ability to win opportunities is jeopardized by bad multi-tasking. There are many good opportunities in the market that require more attention by the sales people in order to expose and win them. An example could be a very good project that a client for some reason is contemplating carrying out with another supplier, and therefore we would not hear about it unless we devote time and attention to expose it. Another common example is a project that is being managed by other personnel within the client’s organization who we are not currently talking to. It is highly important, therefore, to notice that bad multi-tasking on the current opportunities in the funnel also has devastating effects on the ability to introduce more good projects. In essence, if we desire to win more high value projects (have better projects and increase the flow) we should limit the number of opportunities, selecting very carefully to what to devote our attention.

Now, the conflict is clear...
According to the second concept of supply-chain, the primary objective of flow should be translated into a practical mechanism that guides Operations when not to produce (prevents overproduction). In our scenario, this means limiting the number of opportunities in the funnel. We now understand that what prevented us from doing so is the above conflict; the fear that limiting the number of opportunities would result in not having enough opportunities in the funnel to generate the desired sales volume.

But, is this fear really valid? We assumed that in order to have enough opportunities, we should flood the funnel with opportunities. But it is a chicken and egg situation. Flooding the funnel results in the low hit rate that leads us to introduce more and more opportunities. This loop continuously makes us believe that to have enough opportunities to generate the high sales volume we need to have many, many opportunities in the funnel. However, as we see in reality, this never brought us to the targets we have set. Actually, by introducing more and more opportunities, we were not getting enough orders to reach the high sales targets.

Think what would be the case if the funnel would be occupied with good opportunities and better attention would be provided to each. Would we still need to have as many opportunities in the funnel to reach high sales volumes? Limiting the number of opportunities in the funnel would result in providing much better attention to each opportunity and induce us to look for and introduce good projects. If this is the case, then in order to have enough opportunities to reach the sales volume, we don’t need to introduce every request for a project we receive. In fact, we should actually limit the opportunities in the funnel.
As we just concluded, it makes sense to limit the number of opportunities in the funnel. The question then became how to do it. At the early stages of the process (where most bad opportunities lie) we do not have a due date that would determine the release point of the opportunity to the funnel in the same manner that our production system operates. We needed a different mechanism to limit the number of opportunities in the funnel. Here we turned to the Project Management solution of TOC.

As you know, bad multi-tasking is prevalent in multi-projects environments, such as R&D or maintenance departments in any company, where shared resources are working on many projects in parallel. The solution to dramatically reduce the bad multi-tasking in such environments is to simply set a maximum number of open projects (even if it means freezing existing projects). Only when a project is completed is a new project opened. We decided to follow the same approach. We would determine a maximum number of open projects in the funnel. Obviously, this number must be dramatically lower than the number of open projects currently in our funnel, otherwise we would not reduce bad multi-tasking. During a meeting we had with all sales directors we decided to set this limit to 50% of the existing opportunities in the funnel. When we set this maximum number, we used our intuition and basically followed a rule of thumb (we also had predicted that it would not be immensely difficult to “freeze” or take out 50% of the opportunities, as most of the opportunities are anyhow not real or attractive. This prediction was evidently valid as it took us only an hour to make the decision and determine which projects to remove from the pipeline.)

In retrospect, our intuition was guided by the same logic underlying the ‘calm-between-the-extremes curve’ that exists in multi-projects environments. Choosing to have more opportunities in the funnel elongates the sales cycle and increases work in process, but since more opportunities means more safety buffer to recover for lost opportunities, expectations are that a high number of opportunities will be won. This is correct when not a lot of opportunities enter the system, but when the amount of opportunities is considerable, another phenomenon starts to raise its ugly head. What we have to bear in mind is that the higher the number of opportunities, the lower the attention given to each one. When there are too many opportunities in the funnel bad multi-tasking starts to occur. The higher the bad multi-tasking, the lower the hit ratio.

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6 To better understand this concept relating to production, please read “Standing On The Shoulders Of Giants”, talk to anyone in planning in case SDBR is implemented in your company, or read step 4:11 in a Strategy & Tactics Tree for Make To Order companies.

7 As of today, the only place Goldratt refers to this curve is in his latest Project Management Webcast series. As one would read in “Standing On The Shoulders Of Giants”, the representative curve in most production environments is an inverse curve, referred to as the ‘U curve’. The following explanation is a paraphrase of Goldratt’s explanation of the U curve in “Standing on the Shoulders of Giants”.
The magnitude of generated sales volume as a function of the number of open opportunities is shown schematically by the following ‘calm-between-the-extremes curve’ figure:

When one wishes to determine the number of projects to cut, one needs to be very careful not to go overboard. In other words, not to bring the environment from the extreme right side of the curve – where it is – to the extreme left side. The following formula would do the trick:

\[
\frac{\text{# Opportunities} \times (1- \text{Hit ratio})}{2}
\]

Since being on the extreme right side of the curve assumes high bad multi-tasking and therefore very low hit ratio, following the above formula would bring the number of open opportunities to be between the two extremes. If the hit ratio is not as low, the number of projects that would be cut according to the formula is reduced to avoid reaching the left extreme. In our case, since the hit ratio was 11% and the number of open projects (opportunities) was 250, if we would have followed this formula we would have cut practically the same number of projects as our intuition guided us\(^8\).

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\(^8\) \(250 \times (1-0.11)/2\) is about 110 opportunities. Following the formula would have guided us to cut 45% of the projects. In reality we cut 50% of the projects which is practically the same.
**First guideline:** Choke (and even freeze/cut) the number of open opportunities each sales division has in the funnel, and set it as the maximum number of opportunities a sales division can hold in the funnel.

What about limiting opportunities on the salesperson level? How are we going to make sure most of the opportunities for a given division do not fall on the shoulders of a few salespeople, leading to bad multi-tasking? The pragmatic answer for our company was that until we see there is a problem that calls for a policy, each director determines when a salesperson is handling too many opportunities and then opportunities should be handed over from one salesperson to another. Our sales measurements and incentives needed to be adjusted to allow this to happen.

Let’s now turn to the **third concept** of supply-chain: ‘Local efficiencies must be abolished’. First, let’s understand it. One of the major enemies of flow is ‘local efficiencies’ – the perception that any point in the chain must work as much as possible. In essence, it corresponds to the erroneous view that encourages measuring the load (number of opportunities) of the funnel instead of measuring the output of the funnel. Examples of local efficiencies could be measurements like:

1. Number of sales calls/opportunities each salesperson has – the more the better.
2. Number of opportunities in the various stages of the funnel – the more the better.
3. Number of projects a designer is working on – the more the better.

We need to make sure we are not using measurements or policies that aim to increase local efficiency and by that jeopardize the flow of opportunities in the funnel.

**Second guideline:** stop incentivizing to increase the number of open projects in the funnel. Check if there are other local efficiency policies, measures or behaviors that jeopardize flow.

We have applied the first three concepts of supply chain to our sales funnel management about three months ago (mid July). We expected that our hit ratio and sales-cycle duration would be improved as better attention would be given to each opportunity. We speculated that the throughput per order would grow as better projects would be introduced. And, of course, we predicted that sales would grow – as the flow of better projects would be dramatically improved.

We would like to be very cautious about concluding the results achieved as they have been way above what we have expected. The following results (also presented in graph form below) achieved in the last 3 month since we have implemented the choking, are measured on a rolling 5 weeks average:

- Hit rate increased from 11% to 40%
- Sales cycle duration shortened from average 32 days to 17 days.
- Average throughput per order grew from 52% to 68%
What about sales? Here we need more time to really assess the effect. Not because sales have not grown. On the contrary, we know that sales have grown by much more than 20%. However, this growth had its effects on the plant. We have learned the bitter lesson of not contemplating the negative effects of success. In October we had to postpone many orders to November, we had orders being canceled, and our sales people attention was shifted to dealing with not-so-pleased clients - to say the least (I estimate this has occupied at least 30% of their time). It will take us two more months to really assess the magnitude of the growth in sales.
These results were achieved by applying the first three concepts of supply chain. The following is a description of the way we are going to apply the fourth concept. It should be read, therefore, as a possible way to apply it, and not as a model that was already tested and proven.

The **fourth concept** of supply-chain states the following: “A focusing process to balance flow must be in place.” In practice, balancing the flow means to eliminate any major disruption to the flow. In production, disruptions become apparent by the accumulation of work-in-process (WIP) inventory. WIP accumulates where there is a disruption to flow. The first rough mechanism to balance flow is to simply identify the points where WIP is accumulating and take measures that would open effective capacity (typically there is much hidden capacity to expose). The ongoing elaborated mechanism, which Goldratt refers to as Process Of On Going Improvement (POOGI), involves registering the reasons where work orders do not progress as expected considering the buffer time that was consumed. An analysis of the common reasons reveals where a focused solution will provide the biggest contribution to flow.

Turning to the environment of sales opportunities management, it is apparent we cannot apply the same POOGI mechanism. Looking at where most opportunities (WIP) accumulate does not necessarily indicate a disruption to flow as it could be a step that simply takes much longer to carry out. Delays are certainly an indicator for disruption to flow and therefore should be an element to consider as part of the POOGI. However, in sales, unlike production, there is a much more critical indicator that should be addressed, on top of delays, for a disruption to flow – drop outs.

When designing the POOGI mechanism for the management of sales opportunities, one should take into account three different generic causes for drop outs. Drop outs could be a result of 1) A mismatch between the offer and the client – not addressing the right target market with the offer; 2) A mismatch between the offer content and the client – not adjusting correctly the offer specs to the client requirements; 3) A faulty execution – issues in the sales process, the sales interaction with the client, the sales support deliveries, etc.

We intend to implement a POOGI on the three generic causes. A focused POOGI analysis of the third cause – faulty execution – can be done by examining the reasons for drop outs of opportunities that had a significant delay. It makes sense that an analysis of lost opportunities that were a long time in the funnel experiencing a significant delay, would point to a faulty execution (if it was due to the first two reasons we would not expect significant delays but a quick drop out). Here is how we are going to go about it:

1. **We will register the reason for every delay an opportunity encounters.** To determine what should be considered as a delay, we have defined the expected standard duration of each step in the sales process. Whenever a step takes longer than the expected duration it would be considered a delay. When this happens, the reason for this delay is registered. (We will follow the same guidelines Goldratt recommends for production – a reason would be defined as the resource or activity the opportunity is waiting for).
2. We will focus the analysis on the opportunities that have dropped out after having a significant delay. To determine what should be considered a significant delay, we have defined a ‘project buffer’. The project buffer is equal to 1/3 of the sales process duration. When a certain step takes longer than expected, it starts to consume the project buffer by the number of days of delay. When a certain step takes less than expected the consumed project buffer can be recovered by the number of days gained. The project buffer is divided to 3 parts. If the accumulated delays consumed less than 1/3 of the project buffer, the status is green. If more than 1/3 but less than 2/3 of the project buffer is consumed, the status is yellow. If more than 2/3 of the project buffer is consumed, the status is red. If all the buffer is consumed, the status is Black.

Significant delays are considered as blacks. In other words, only opportunities that dropped out when their project buffer status was black would be subjected to this POOGI analysis.

3. We will pull out the registered reasons for the lost opportunities that had a significant delay and identify the biggest common contributor. Basically, we will identify the reason that generated the biggest accumulated consumption across all the project buffers. If the improvement efforts stemming from this analysis are effective, it will no longer be the number one contributor and another analysis will reveal the reason that should be dealt with next.

The focused POOGI for the first two generic causes would follow the same guidelines for lost opportunities that did not have a significant delay.

We expect that implementing the fourth concept of supply chain will result in another quantum jump in performance.

**Third guideline:** Dedicate a team to build the POOGI mechanism to identify the common significant reason for drop outs and conclude where to focus improvements efforts.

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9 We intend to use the green, yellow, red status indicators, not as part of the POOGI, but as a daily management tool to identify delays early on and focus management attention before it accumulate to a significant delay.
This article is aimed to show that what Goldratt refers to as “supply chain concepts” apply much beyond what is typically referred to as Supply Chain, and therefore should be actually referred to as the concepts of Flow. Our experience in applying these concepts generated a jump in sales performance, in hit ratio, and in our management’s and sales team’s capabilities. In addition to the tangible results, the understanding and the application of these concepts is generating increasing harmony in the company as it becomes evident to all functions (sales, sales support, production…) that they are part of one flow.

Taiichi Ohno once said, “all we are doing is looking at the time line from the moment the customer gives us an order to the point we are collecting the cash and we are reducing that time line”. We humbly suggest that the underlying concepts apply much before a customer gives us an order. They apply to the same extent on our efforts to generate these orders.

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