OUR VISION AT SOLVENTURE

Sales & Operations Planning (S&OP)

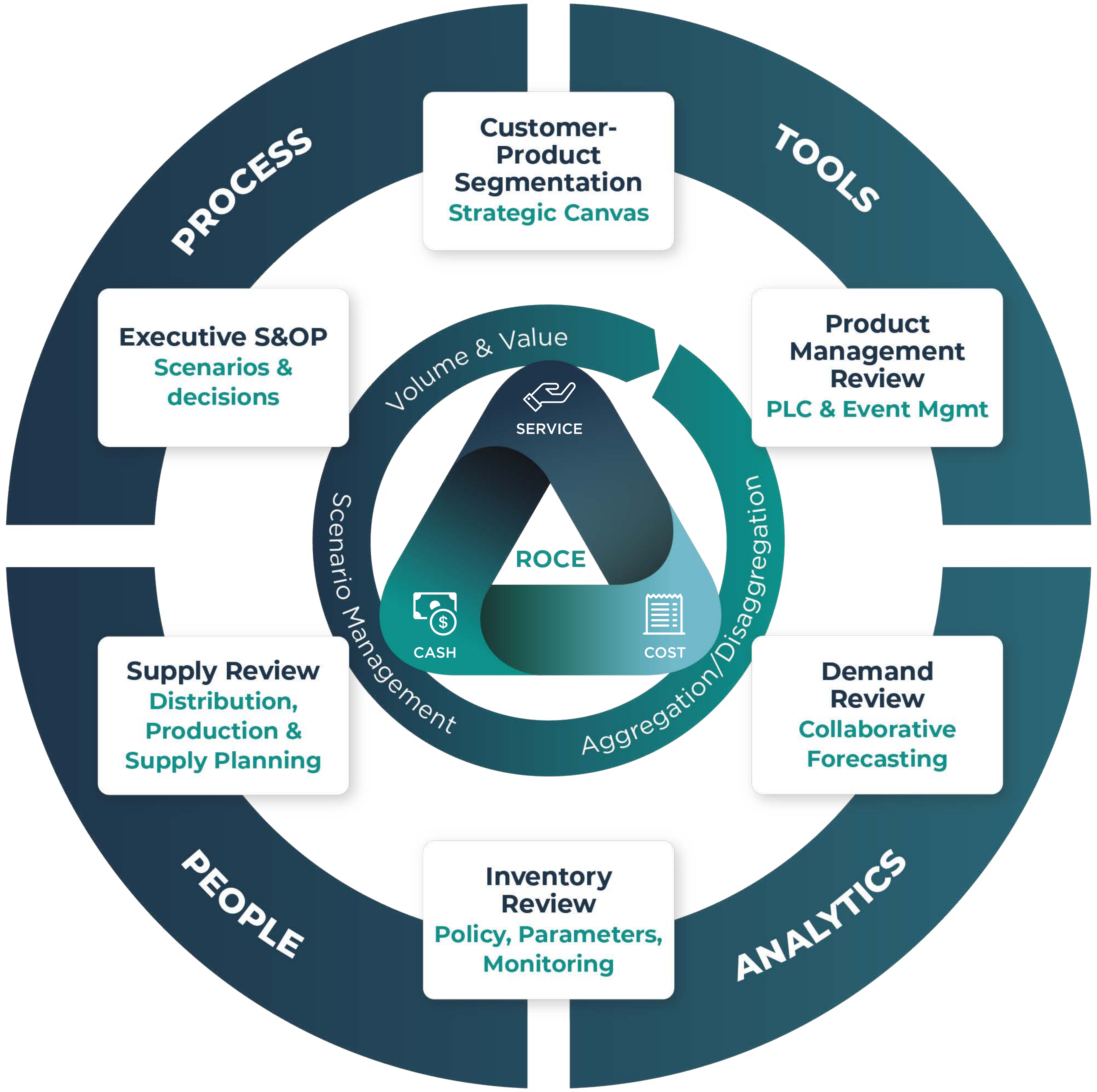
by Prof.dr. Bram Desmet, CEO at Solventure

SOLVENTURE

TABLE OF CONTENTS

SALES & OPERATIONS PLANNING (S&OP)

At Solventure we take pride in being experts in designing and implementing Sales and Operations Planning. Companies that have a good S&OP process can't imagine how to live withoutit. It is the key instrument for the CEO to navigate the business along the budget towards its strategic targets. This white paper summarizes the vision we have distilled from the many projects we have done over the last 10 years.



A CROSS-FUNCTIONAL PROCESS: FROM SEGMENTATION TO THE EXEC S&OP MEETING

CUSTOMER – PRODUCT SEGMENTATION

Not every customer is equal. Not all of them have the same requirements, not all of them are equally important. Some bring a higher volume; others may bring a higher margin.

Not every product is equal. Some of them are more strategic or easier to produce. Some of them can be customer specific, others are easily substituted by an alternative.

There is no one-size-fits all in your supply chain. Segmenting customer and products, and differentiating service across those different segments is crucial in many ways:

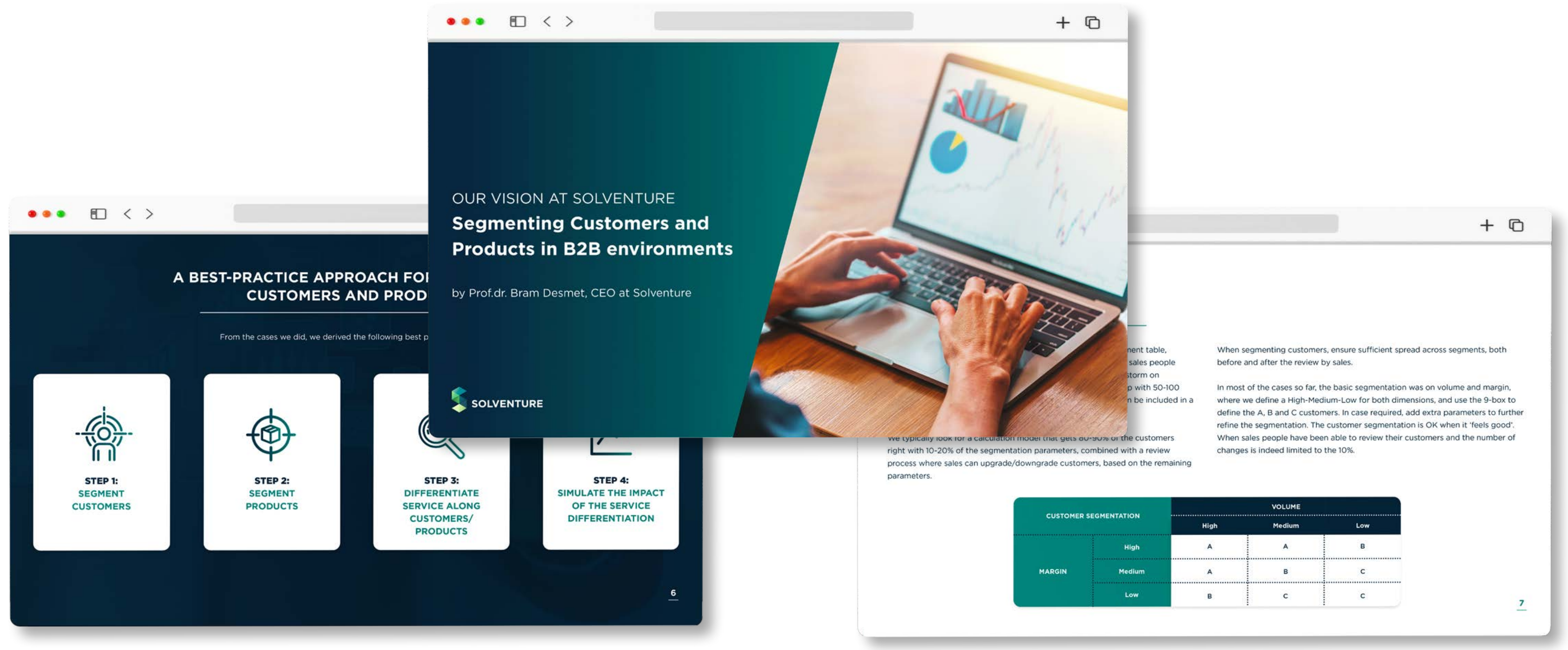
- It clarifies strategic choices: what is more or less important
- It will put your supply chain at a more effective use

Segmentation links into all of the subsequent steps of the S&OP process:

- With A-customers we may do collaborative forecasting or VMI
- For A-products we may define higher service levels and carry more inventory
- In a constrained capacity situation, it is essential to reserve capacity for A-customers and A-products, and push out C-customers and C-products.

If you skip the segmentation step, you'll typically do it ad hoc, for instance when you have a supply shortage, or you may have different segmentations in forecasting, inventory and supply that never really come together. Segmentation is 'the' instrument to translate your strategy to your supply chain. Without it you lack focus.

White Paper: Customer-Product Segmentation in S&OP



DOWNLOAD NOW

PRODUCT MANAGEMENT REVIEW

Innovation is key in today's hyper competitive markets. The introduction of new products consumes capacity and requires inventory. As a result, it is an essential part of the balancing of Sales, Inventory and Operations in the S&OP process.

7 out of 10 forecasts for new products are overstated. We are humans. No product manager expects to launch a failure.

If we know the forecast of a new product is inaccurate, it is key to:

- Manage the risk: e.g. be prepared to have higher cost for an initial batch to reduce inventory write-offs
- Follow-up closely: 7 out of 10 products will need a downward adjustment, but that also means that 3 out 10 will need an upward adjustment. Be quick to react and adjust your supply chain accordingly. Ensure to tie product management in to the S&OP cycle!

In general, we are notoriously good at introducing new products, but equally bad in stopping old and less performing products.

Near the end of the lifecycle, sales are declining, because of price erosion margin is declining even faster, but at the same time we require more inventory.

A close monitoring of this evolution and stopping products in time is essential to keep control of the complexity and put your resources, both capacity and inventory, at optimal use.

Apply the principle of the ROCE: look at the EBIT generated over the invested capital (inventory). Put targets on that and stop products when they are no long living up to the expectations!

In many companies, product management is also in the lead for promotions and marketing campaigns. Promos have a high visibility so they also require a high service. On the other hand they cause a lot of variability and are hard to estimate.

Forecasting and planning promos is essential in the Sales and Operations Plan. Many companies can significantly improve on this aspect.

DEMAND REVIEW

A product launch and end-of-life happens in close collaboration with marketing or product management. Once the product is mainstream, the best information is to be found with the sales force and the channel partners.

We still find many companies that churn out empty Excels where they ask the sales force to predict on a customer-product-ship to what is the expected sales 12 months out. In parallel we see that finance is asking sales for an update on the current month and the current quarter.

Whereas supply chain wants to see the physical volumes, finance wants to see Euros or Dollars. Where supply chain wants to see details, finance is OK with aggregated levels like per region and product group. Living these parallel worlds are a recipe for failure (for supply chain).

Finance will get its info, as it is typically linked to the reward system of sales. Supply chain will see limited adoption and get a forecast that lacks sufficient accuracy to be of any practical use. The lack of a good forecast creates service issues, unbalanced inventories and operational firefighting costs.

There are a couple of tricks you can apply to make the (forecasting) job for sales more realistic, as such enhance the accuracy of the forecast, and at the same time ensure that all stakeholders get the info required on the level of detail and the horizon it is crucial to them.

First of all, ensure that your ground work is done by **statistical techniques**. Instead of providing empty Excels, statistical techniques can typically help to give a first estimate. To maximize the efficiency of the statistics, it is key that you first separate your historical demand in what you can call a 'baseline' or 'run-rate' demand, and 'events', which could be promotions, tenders, projects, ...

Separating these 2 also creates more focus towards the future. For the 'baseline' demand, the statistics typically hold sufficient and reliable information.

The key for marketing and sales is to focus on the 'events', their latest status, and their expected impact. Make sure that your toolset allows this split. It reduces the workload for sales and allows them to focus on where is the most value add.

Depending on the company different people might be involved in planning and follow-up of the so-called 'events'. Ensure that your process is built to consolidate the information gathered by each of them.

A second key to keep the job 'manageable' for sales is to **allow easy aggregation and disaggregation**.

As just explained, you start from a statistical baseline on a detailed level and ask sales to add events (promo's, tenders, ...) on that detailed level. Once that is done, they should be able to validate on an aggregated level, in both volume and in value, to ensure finance gets the info required as well. Again, ensure that your toolset allows this. It reduces the workload for sales and ensures the financial forecast and the supply chain forecast point in the same direction.

Many companies have been working on improving the above. They may not be there, but at least there is awareness and we are confident they will be making steps. Another key opportunity is in **collaborative forecasting with key customers and channel partners**.

When you do a 'forecastability analysis' you will find 'high-volume' products that are 'highly erratic'. If you analyze in more detail, you will find that key customers (cfr. your segmentation) and/or channel partners are causing the variability.

Many companies share the analysis but little share the solution: collaborative forecasting. It is old knowledge that the 'sell-out' of your channel partners or the 'consumption' of your key customers is more stable than your 'sell-in' or 'historical sales order pattern'. There is only 1 way to improve service and reduce cost and inventory in this type of situations: collaborative forecasting.

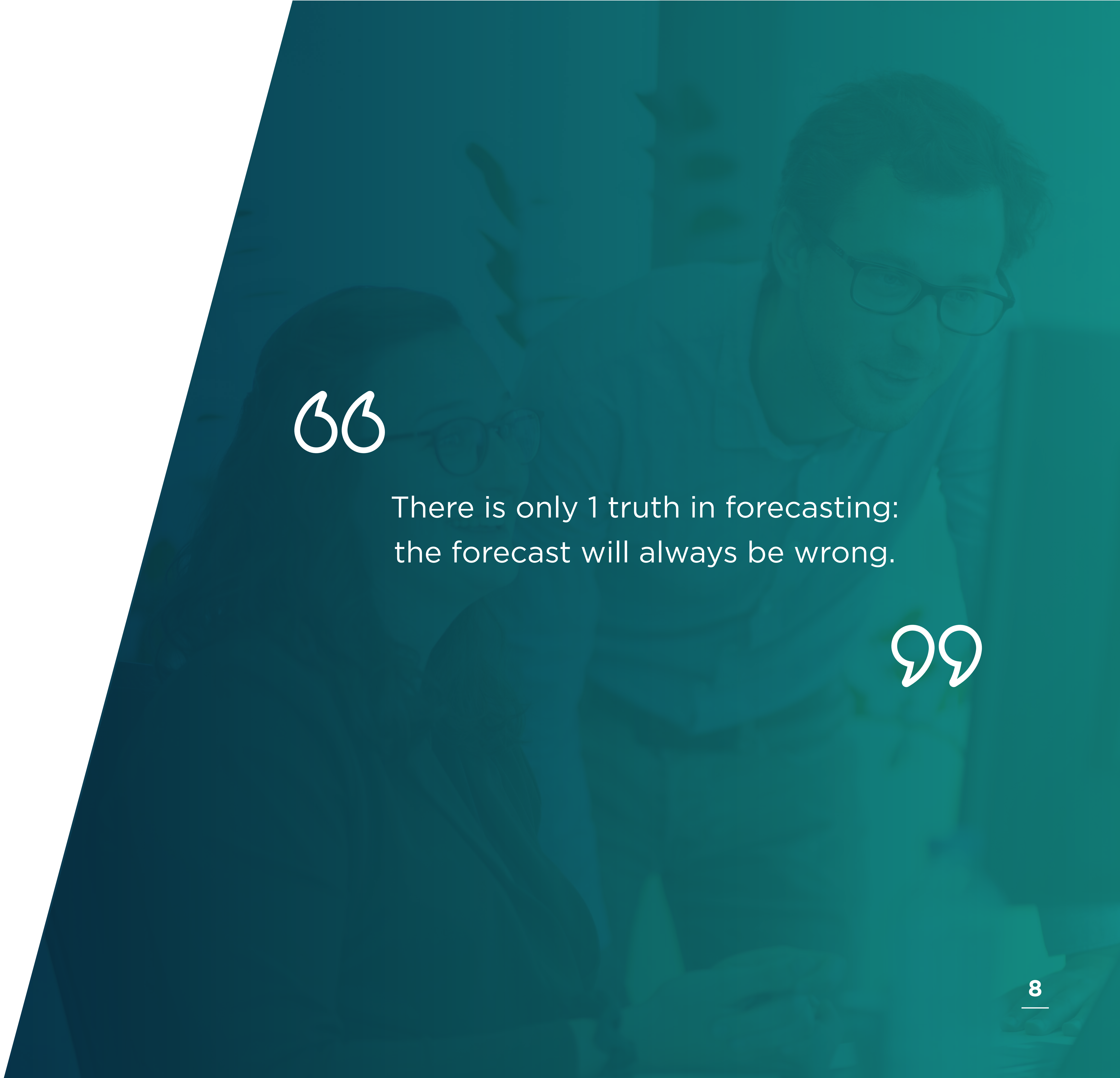
Instead of ‘guessing’ what these customers will buy … review it with them. It requires a significant effort, but there is no alternative. Ensure that your toolset allows you to pull-up and adjust customer specific views! It will be key in getting adoption from key account managers.

There is only 1 truth in forecasting: the forecast will always be wrong. What matters is ‘how wrong’ and ‘which steps are adding value and which are not’. Too much has been written on which forecasting KPI’s to use.

We typically use the Mean Percentage Error to measure bias, and combine it with the Mean Absolute Percentage Error to measure accuracy in the month. We tell to sales that the bias should be between +5% and -5%. On average we should be right.

Targets for the MAPE depend on the product and the market. We have stopped the religious fights on how to measure the accuracy. Just make sure that you have a measurement to which everybody agrees.

And ensure that your supporting toolset allows to configure your measurement that you have developed. The more relevant discussion is how to monitor which steps in the process are adding and destroying value, and feed that information back to the stakeholders.



Make sure that your toolset allows to compare the forecast accuracy of the statistical forecast, the forecast as adjusted by the account managers, the forecast as adjusted by marketing, the forecast as adjusted by the sales director … in fact measure the value add of each of the stakeholders.

Reviewing and discussing the forecast value add will reveal issues like ‘over-optimistic’ marketing people, ‘sandbagging’ sales directors and or ‘too conservative’ supply chain people. Many companies are ignoring this debate or hold the debate in the corridors instead of in the demand review meetings.
With the right toolset and the right reporting of the forecast value add, you can have the debate in the demand meetings and ensure it translates into improved forecast accuracy.

Last but not least we see that more and more companies are tired of the disproportionate effort going into the yearly budgeting exercise. In many companies it seems to go in endless cycles and result in a plan that is unrealistic as of the very moment it is finished. The ultimate dream is to have a rolling budget where we update our financial plan 18 months out on a monthly basis.

We’ve not seen too many companies in that situation already. **A first step however is ensuring the budget forecast starts from the S&OP forecast**, which already aligns volumes and value.

The difference between the budget and the forecast is the ambition. Ensure that your toolset allows you to work with “scenarios” or “forecast versions”.

If you want to build an “aggressive” scenario, start from the current plan, and review with sales in which customers and products they would be able to realize the extra volumes and margins.

You might save that scenario for future reference. In any case you want to save the “budget scenario” as a reference for the monthly follow-up.

Reporting where we are with respect to the budget, and addressing gaps both positive and negative is key in navigating your business, along the budget, towards your strategic goals. Ensure that your toolset supports this.

INVENTORY REVIEW

Where inventory was the 'buffer' between the sales trying to maximize service and the operations trying to minimize cost, that inventory 'buffer' is now part of the game itself, in that the CFO wants to minimize inventory to free up cash. That is the reason why we have opted for the terminology of Sales and Operations Planning or S&OP. At least in our perception the term Integrated Business Planning or IBP was hot 5 years ago but S&OP and S&OP are again more mainstream.

How much inventory do we really need? That's a hard but also crucial question to answer.

It starts with defining your stock and non-stock or MTS/MTO items. The best stock is the one you can avoid. In general, we see that companies struggle with agreeing on which product should be in which category. In our mind, we should again use the ROCE principle. A non-stock product typically carries a longer lead time.

Ask yourself what will be the impact on the turnover and the EBIT. If you are the only one with the capability to supply, the impact may be zero. If there are 10 competitors that can easily supply from stock, no stock may mean no business.

If you do carry stock for the product, think about the cost involved in carrying it (typically expressed as a % of the product cost). Those costs may need to be subtracted from the margin to see the 'true' or 'net margin'.

Try to compare different scenarios for your product portfolio: compare the EBIT generated for the inventory dollars invested. High margin products that are easily delivered by the competition will stay on stock. Low margin products where the customer has no alternative will typically become non-stock products. Ensure that your toolset allows this type of analysis!

In a next step, for your stock items, you need to calculate your inventory parameters. What is our safety stock? What is our lot size or production frequency? Still too many companies are using simplistic policies like 'we are putting 10 days of safety stock for all items' or 'we make the fast movers once a week'.

Some more advanced calculations for your inventory parameters can typically improve service and cost while reducing inventory.

It has been 10 years since I completed my PhD on multi-echelon inventory optimization, which probably only 1 out of 10 companies has already implemented. The potential of advanced inventory techniques is still huge. As pressure on working capital increases, we believe their adoption will gradually improve.

White Paper: Inventory Optimization as an essential part of your S&OP Process?

DOWNLOAD NOW

Inventory parameters are an input to your supply planning process. In fact, they show the minimal level of inventory you need to carry. Prebuilding stock in anticipation of a shutdown or a seasonal peak will further increase the inventory. Buying stock for a strategic reason, e.g. because of a low price level or in anticipation of a shortage will again further increase the inventory level.

Not a lot of companies have a clear view on their projected inventory nor what is the reason they are carrying how much.

In the new economic reality where cash is a constraint, having a projected inventory is a hard requirement.

Next to a good calculation of inventory parameters, it also requires a good planning system. Assure that your supporting toolset has both.

Where a good plan is a good start, you know that reality will be different. We sold less than anticipated, we produced more than planned, part of production got blocked in QA, we outsold because of an unplanned promotion or tender, … Both directions are harmful.

Carrying too much inventory is not putting the cash at optimal use and even risks hurting you twice as you need to write it off. Carrying too little puts service and sales at risk. Good inventory reporting and follow-up is required to keep your inventory in balance. It is also key in identifying root causes of deviations.

Ensure that your toolset allows this type of reporting and follow-up of appropriate actions. Always remember that you need to have the right level of inventory, but it also needs to be balanced at the SKU level!

SUPPLY REVIEW

Planning is an old discipline, though many companies struggle for 2 main reasons:

- Lack of adequate tooling: either Excel, either outdated, either not integrated
- Lack of understanding of the added value of having different levels of planning

It is old knowledge that planning typically occurs in multiple levels:

- You can have the strategic level, looking multiple years out, supporting capital expenditure and investment type of decisions.
- A rough-cut-capacity planning, looking 12-18 months out, looking to balance seasonal inventories, global allocations, rough cut decisions on manpower and other resources.
- A master planning, looking 6-12 weeks out, focused on optimizing the bottleneck, more detailed manpower planning and providing the basis for ordering of raw materials and components through an MRP calculation.
- A detailed scheduling, looking at the next few days, synchronizing and optimizing multiple detailed steps in the production planning, typically assuming the right resources are available to do the job, and accommodating the situations where they are not.

It is surprising however, how many companies are missing 1 or multiple levels The problem is that what you didn't foresee in a rough-cut capacity plan, you are typically unable to correct at a master planning level. There are good reasons why the above has grown as a standard.

A second big issue is the lack of adequate tooling. Too many companies are scheduling or planning using home grown Excels. Excels tend to be very manual, not integrated, meaning you're never sure you have the latest version of the orders and the forecast, prone to errors, have difficulties to handle scenario's, to connect to a higher or lower level plan, …

We underinvest in planning tools because we underestimate the impact it has on the service-cost-cash balance. We tend to see the resulting problems: too much inventory, service issues, high expediting costs, frequent overtime or weekend shifts, … We don't tend to see planning as the solution.

We underinvest in planning tools because planners are working too hard and are being too flexible. That keeps the above costs hidden.

They'd help themselves and the company if they would do differently and help make the business case for a planning system. With growing complexity, they are running down a dead end street!

Look for a planning system that allows planning on the different levels in an integrated way. Look for scenario capabilities. Planning is a complex job. Your final plan is typically the result of evaluating possible alternatives on service, cost and inventory.

EXECUTIVE S&OP

In the 'demand' part we already discussed you should come to 1 forecast for sales, finance and operations, and have a monthly check of that forecast to the budget, which you can consider as the plan that contains a certain ambition to realize a given strategy.

You need a monthly review of 'where we are with respect to the plan', 'which are the gaps', 'how we want to address them' and 'what will be the impact on marketing, sales, operations and the inventory'.

In the Exec S&OP we want to agree on 'where we are' and 'what is the plan forward'. That seems straightforward, but without an Exec S&OP we see that different departments have different plans based on different assumptions and are steering in different directions. Guess where that leads to.

The attention span of a senior executive is short. If you want them to buy in, you need to give them some action. Avoid having too many reports on too many KPI's. It creates an overload of information and will tend to bore people. Make sure you have the KPI's and the reports, but start your preparation by putting them into the appendix of your presentation.

So what to do when you have your senior leadership sitting in 1 meeting room? You grasp to opportunity! You make sure to review the major business challenges you are facing, taking a look at them from different angles and agreeing on an orchestrated approach on how to tackle them.

Given your major challenges are surrounded by uncertainty, the decision making in the Exec S&OP should be based on comparing scenarios.

Your final S&OP plan is typically the result of evaluating possible alternatives on service, cost and inventory.

In the Exec S&OP, the type of decisions you make are on a higher level and they typically have a bigger impact. Examples are: will we keep production running to support the EBIT, knowing we'll be producing inventory and consuming cash? What will be the impact of the Russian embargo on Turkey or of Iran opening up to trade with the west? Do we agree building stock for the big project or tender in Russia, knowing the product is customer specific and may be hard to get sold if the deal gets cancelled?

Any decision with a potential major impact on your ROCE should be supported with scenarios and be presented for a decision to your Executive committee.

It requires a strong S&OP leader to detect the relevant business challenges and make the appropriate preparation. Though the pressure in publicly listed companies is short term, he should convince his executive committee that the real window of opportunity is in the mid-term, anywhere between 3-18 months out.

Engaging the executive committee in scenario based decision making on a tactical horizon requires a strong S&OP leader backed-up with a powerful tool providing the necessary reporting to ensure agreement on ‘where we are’ and complemented with scenario capabilities to reach consensus on ‘what is plan forward’.

COMBINING IN-DEPTH PROCESS KNOWLEDGE, POWERFUL TOOLING, ANALYTICS AS A TURBO-CHARGER AND CHANGE MANAGEMENT

At Solventure we believe that building a strong S&OP is built on 4 pillars.

In depth process knowledge.

At Solventure we are experts in designing S&OP processes. We help companies in accounting for company specific issues and challenges while strictly guarding the balance between added complexity and added value. S&OP is a complex process. You need an experienced guide to walk you down the path.

Powerful tooling.

You can't manage the complexity of the current supply chains with Excel. Many have tried, as many have failed. The good news is there are plenty of powerful planning tools available. They come at a cost, but their business case is a no-brainer. Typical payback periods are 6-12 months. That is supposed to be attractive. As we are touching the heart of the supply chain triangle (see next paragraph), the benefits of a new planning tool are often a factor 10 higher than those of a new ERP, whereas the cost is a factor 10 less. Though the business case is a factor 100 more attractive, the average company prefers a new ERP over a new planning system. We invest in the ERP because we have to. We should invest in a planning system because we want to.

Analytics as a turbo charger.

Supply chain has an analytical side. To improve forecasting you can use statistical forecasting. In inventory management there are statistical models to calculate safety stocks. In planning you can use Linear Programming to optimize your plan. These advanced analytics are like turbo chargers to an engine. If you have a good process and a good tool, adding advanced analytics increases the performance with 30-40%. But it is a matter of precision. If you plug it in in the wrong way you can blow up the engine. We've seen failed implementations of demand planning software because of a lack of mastery of the statistical forecasting by the implementation consultant. At Solventure we pride ourselves of mastering the analytical side of the supply chain.

Change management.

You can have the best process, supported by the best tool and the most clever algorithms. If the planner distrusts the system, they will not going to use it. We train our consultants to sense and respond to the change management issues in any supply chain planning implementation. You can build a wonderful car, but people are still driving it.

KEY ENABLERS: AGGREGATION/DISAGGREGATION, VOLUME & VALUE, SCENARIO MANAGEMENT

Any tooling you use should possess the following 3 key features to support a successful S&OP.

1 Aggregation/Disaggregation.

In planning, the devil is in the details. You need SKU-level information to plan production and to order components and raw materials. However, your only chance to feeding the planning monster is allowing key people to key in and validate information at an aggregated level. If you want to know where the market is going, don't ask it on an SKU level, allow managers to participate on a higher level of aggregation and use a powerful disaggregation to get back to a lower level.

2 Volume & Value.

The only way to get senior management driving the process is helping them to reach their business objectives. These objectives are always in value, in € or $, where for the planning you need to talk volumes, be it Kg or Meters or Litres, … An easy translation from volume to value and vice versa is required to tie the management and the operational world.

3 Scenario management.

There is only 1 certainty when it comes to forecasting. That is that the forecast will be wrong. Try to capture the 'normal' uncertainty in your inventory buffer. For the 'bigger' uncertainties you need a scenario management capability. Define what if scenarios on demand, inventory, supply, to check possible outcomes, possible solutions and make an informed decision going forward.

S&OP AS A KEY ENABLER TO BALANCE SERVICE, COST AND CASH

At the heart of our S&OP process we have put our Supply Chain Triangle. We see that many companies are struggling with the balance between service, cash and cost. Sales people tend to be top-line driven. They will try to maximize service as to maximize the sales revenue. Operations tends to be focused on cost. They want to maximize the efficiency in production and always ship in full trucks as to minimize costs.

Also procurement tends to be cost driven. We source in the Far East because it's cheaper. Inventory used to buffer that conflicting objective between the Sales and Operations. Since the financial crisis, the CFO has increased pressure on inventory as it is an essential part of working capital. In most companies, inventory has become a part of the equation instead of the result.

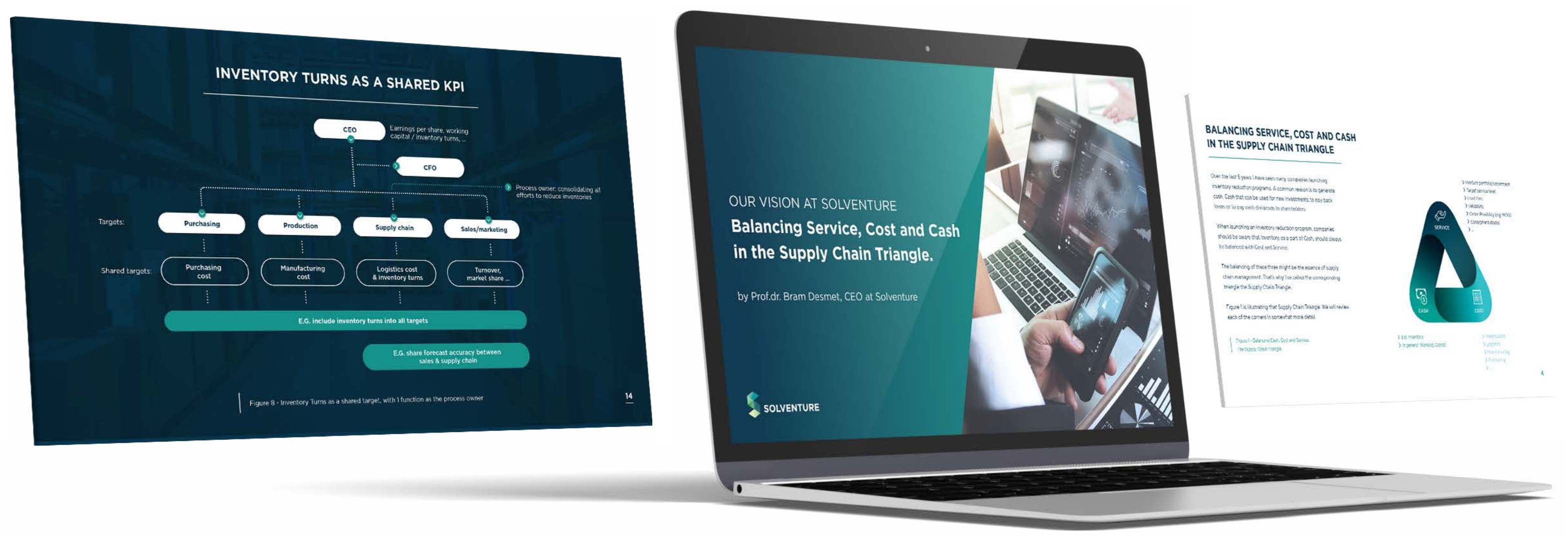
There are good reasons to balance the triangle. As an investor I'm not concerned with the top-line as such. Growth is good ... but it should generate profit. That requires balancing the service and cost side, which combined give something like EBIT.

But even then, as an investor I'm not concerned just by EBIT. If 2 companies are generating 100Mi€ of EBIT, but 1 requires 100Mi€ of working capital and the second only 50Mi€ then I certainly prefer to invest twice in the second. That idea is expressed by the Return On Capital Employed, or the ROCE, which is central to the triangle. Balancing the Supply Chain Triangle is as such equal to maximizing ROCE.

There is only one straightforward approach to improving the balance in the Supply Chain Triangle and improving the ROCE. It is the implementation of the S&OP process we have summarized in this white paper. Companies that have adopted the process can't imagine working without it.

Companies that have it, but are struggling with bits and pieces, should continue down the path, and continue investment in improving the processes, supported with adequate tooling, clever analytics and knowledgeable people. That's the combination to drive your business forward.

White Paper: Balancing Service, Cost & Cash in the Supply Chain Triangle



DOWNLOAD NOW

IN SUMMARY

Maturity amongst companies is very diverse. We may be strong in demand planning but miss the supply planning and a real Exec S&OP. We may have the supply planning and Exec S&OP but have a lack of participation of sales in the forecasting and of senior management in the exec S&OP.

Many of us will claim to have S&OP, but may have significant steps to make, and significant investments to make in S&OP tooling to enable driving the process at a higher level of maturity and efficiency.

ABOUT THE AUTHOR

Bram Desmet - CEO | Professor | Author
As CEO, since 2009 Bram has led the Solventure Group to transform organization's sales & operations planning processes into a competitive advantage using his innovative Supply Chain Triangle® and Strategy-Driven approach.

As an adjuct professor at both Vlerick Business School and Peking University, Bram bridges the gap between academia and industry practice.

As an author, he has encapsulated his experiences into elegant and practical frameworks in his books, Supply Chain Strategy and Financial Metrics and The Strategy-Driven Supply Chain, evangelizing strategic thinking for cohesive alignment of strategy, supply chain, and finance within organizations across all sectors. Bram is also founder of The Strategy-Driven Supply Chain Institute.

ABOUT SOLVENTURE

As Solventure we proud ourselves of being experts in designing and implementing Strategy-Driven S&OP. We do that through a unique combination of people, processes, tools and analytics. Solventure is Arkieva's, OMP's and Kinaxis's implementation partner.

Check us at www.solventuregroup.com or contact us at contact@solventure.eu for more info.