OUR VISION AT SOLVENTURE

Balancing Service, Cost and Cash in the Supply Chain Triangle.

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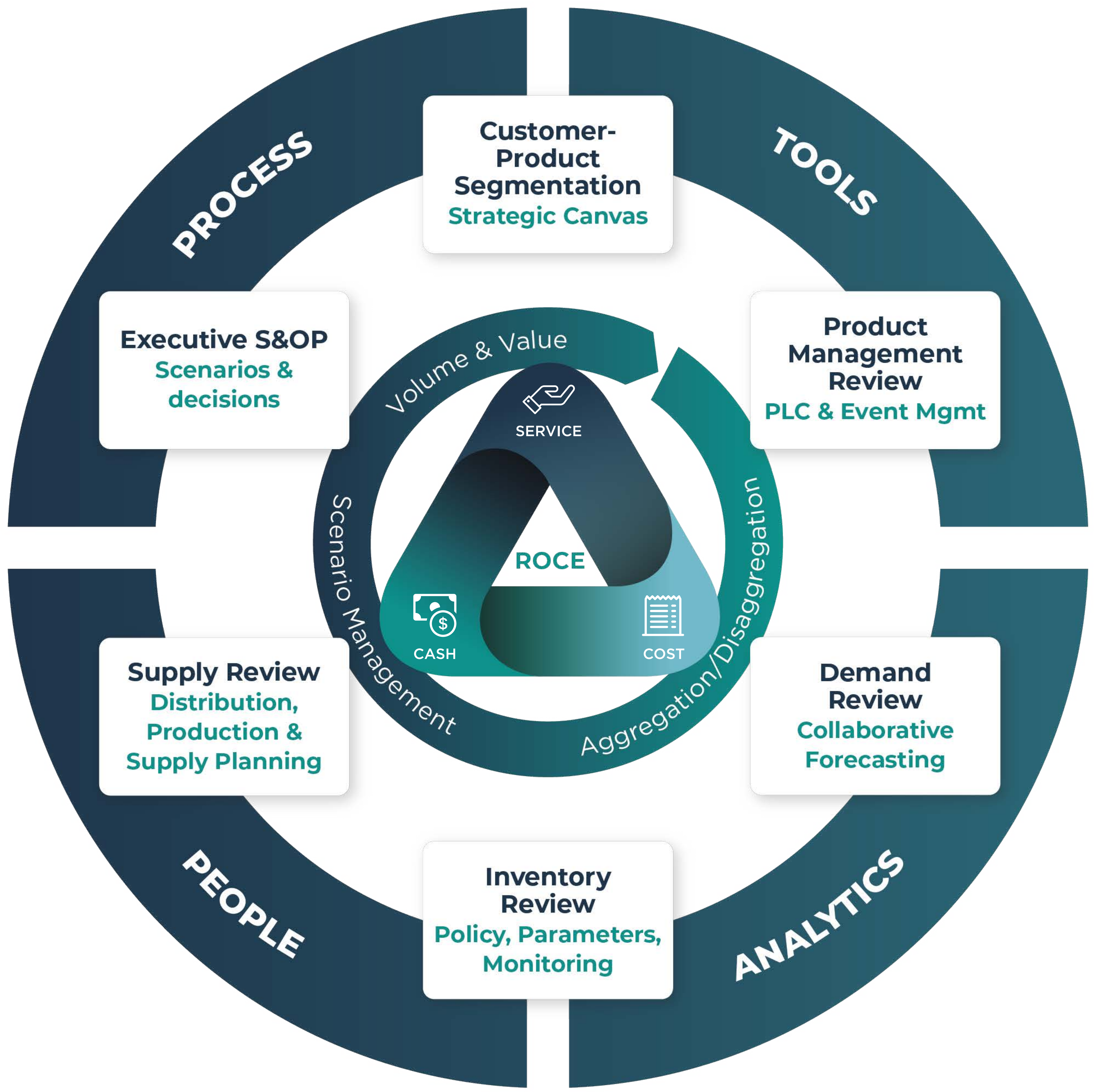
SOLVENTURE

TABLE OF CONTENTS

THE SUPPLY CHAIN TRIANGLE OF SERVICE, COST AND CASH

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 without it. It is the key instrument for the CEO to navigate the business along the budget towards its strategic targets. For a summary of our vision on S&OP, we refer to our position paper "Sales & Operations Planning. Our vision at Solventure."

In this position paper we dig into the heart of S&OP to discuss what we believe is its true purpose: helping companies to balance service, cost and cash in the supply chain triangle.



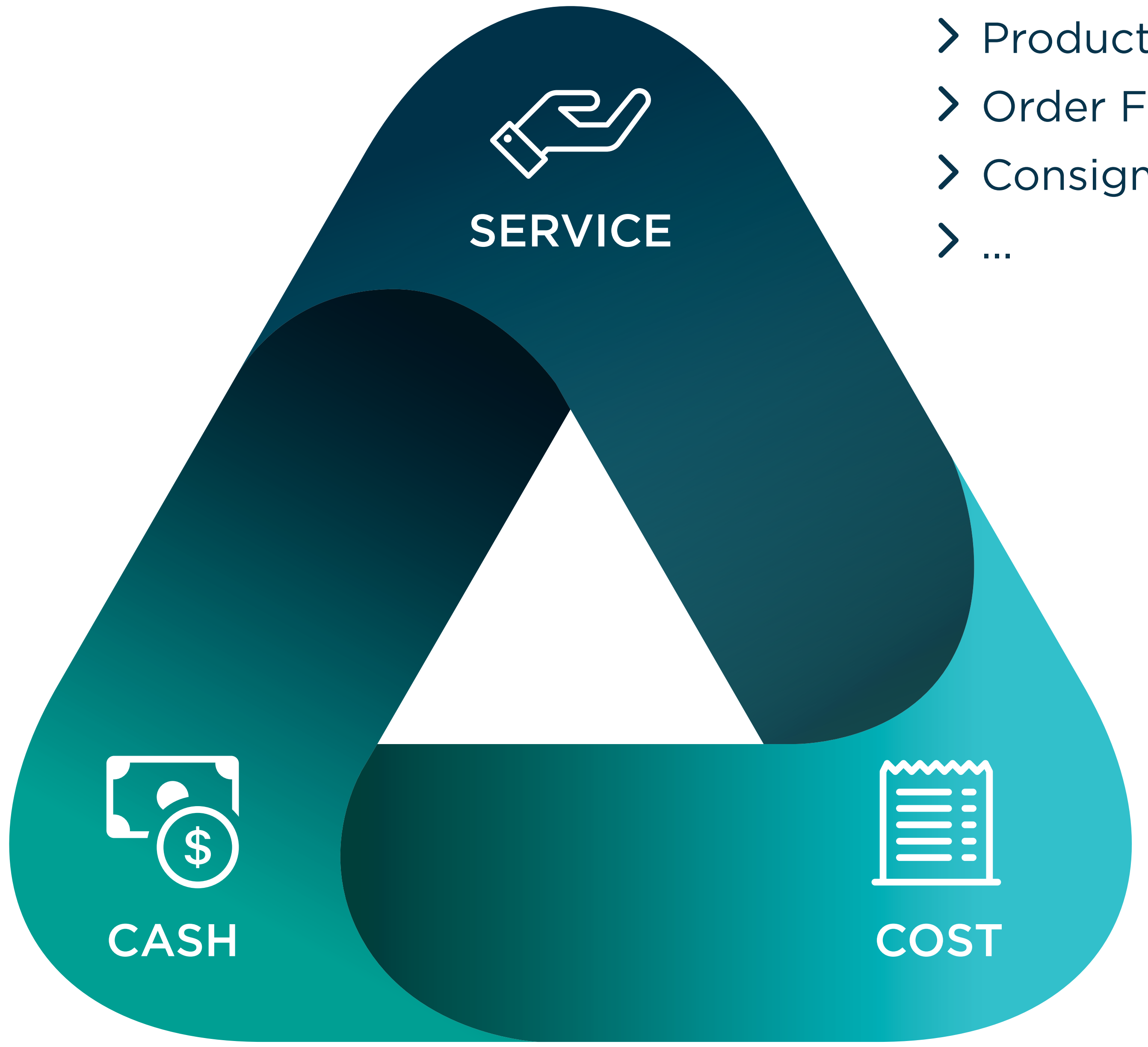
BALANCING SERVICE, COST AND CASH IN THE SUPPLY CHAIN TRIANGLE

Over the last 5 years I have seen many companies launching inventory reduction programs. A common reason is to generate cash. Cash that can be used for new investments, to pay back loans or to pay cash dividends to shareholders.

When launching an inventory reduction program, companies should be aware that inventory, as a part of Cash, should always be balanced with Cost and Service.

The balancing of these three might be the essence of supply chain management. That's why I've called the corresponding triangle the Supply Chain Triangle.

Figure 1 is illustrating that Supply Chain Triangle. We will review each of the corners in somewhat more detail.



- Target service level (OTIF)
  - Lead time
  - Reliability
- Product portfolio/assortment
- Order Flexibility (e.g. MOQ)
- Consignment stocks
- ...

- E.g. Inventory
- In general 'Working Capital'

- Warehousing
- Logistics
- Manufacturing
- Purchasing
- ...

Figure 1 - Balancing Cash, Cost and Service.
The Supply Chain Triangle.

SERVICE

Typical supply chain aspects of service are the customer lead time, the service level, the product portfolio, the order flexibility, the payment terms, ...

Shorter lead times, a broader product portfolio and the use of consignment stocks can be extras from a service perspective. They can increase the inventory and as such require more cash.

We can also reduce lead times by providing excess capacity or by using faster transportation modes. This is increasing service by increasing cost.

COST

On the Cost side, we primarily think of operational costs like purchasing cost, manufacturing cost, logistics cost. Sourcing in Asia, the leveling of production and rounding to full trucks are measures that lower the cost but they increase inventory. When making decisions, e.g. low-cost sourcing from Asia, we need to look at operational costs, but also at the inventory costs.

The cost of inventory is based on 3 components: the rent, the room and the risk. The yearly carrying cost can range between 25-55% of the inventory value so it’s significant. If by sourcing from Asia we double our safety stock, we also double the yearly carrying cost. We should account for these costs when making the business case.

CASH

Inventory is an important element of working capital. A reduction in working capital is freeing up cash. We see working capital reduction programs coming back every 3-5 years in companies.

The post-COVID recovery has lead to global inventory shortages. Whether you deliberately lower the inventory or whether it is caused by external factors, it often is at the expense of Cost, e.g. by stopping production or cancelling orders from suppliers. Often also with an impact on Service, by not having the right product at the right time.

A TRADITIONAL ORGANIZATION CREATES TENSION IN THE TRIANGLE

Figure 2 shows a typical executive committee with a CEO, a CFO, a VP of Sales & Marketing, a VP of Supply Chain responsible for planning, customer service, logistics and inventory, next to a VP of manufacturing and a VP of purchasing.

We also show their typical KPI's. These are the metrics they wake up with. These metrics are linked to their individual bonus schemes.

Figure 2 - A traditional organization with corresponding KPI's

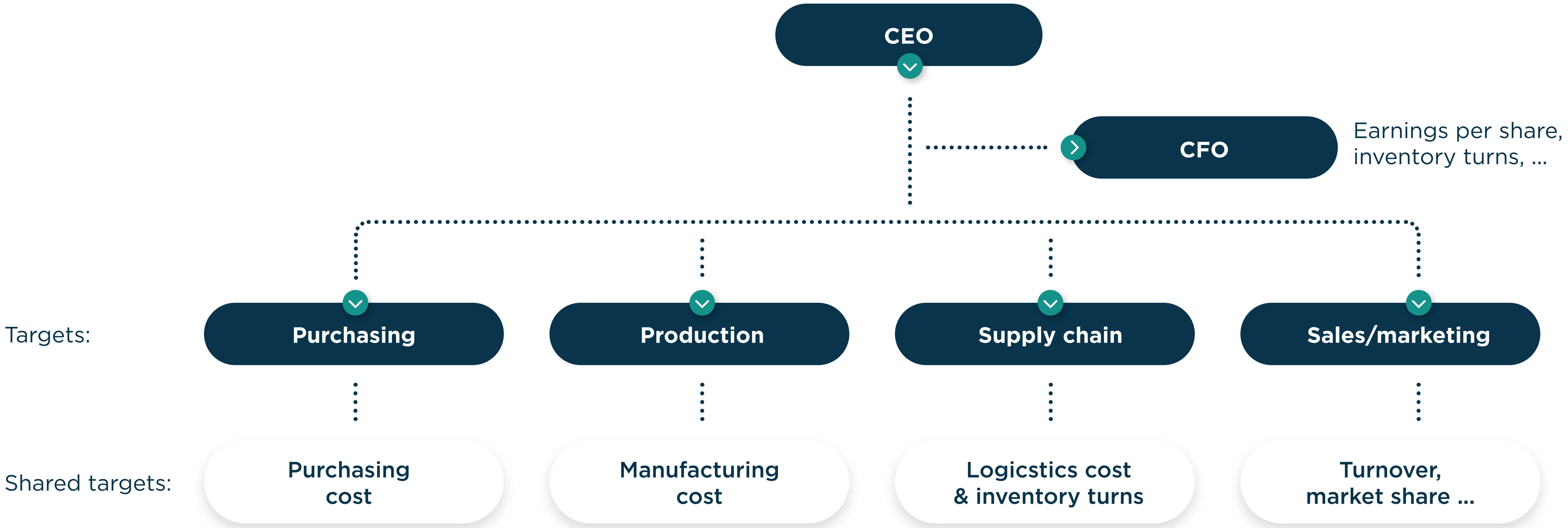


Figure 3 shows the resulting pressure in the Supply Chain Triangle from this traditional organization. As a VP of Sales & Marketing, my main interest is in metrics like turnover and market share. As a result, my primary interest will be in the service side of the triangle.

For the operational VP’s, the main focus will be on the cost side of the triangle. The CFO may be the only one who is really concerned about the inventory, because of cash, or because of the non-operational costs like write-offs or financing1.

In many traditional companies sales and operations are historically strong in the company. The VP Supply Chain may be the new kid on the block.

To prove himself and his role, he gladly accepted the challenge of improving the inventory situation, let’s say reduce the inventories with 30%.

The VP of supply chain is playing the triangle in Figure 3. If he cannot change the dynamics in that triangle. He is unlikely to succeed.

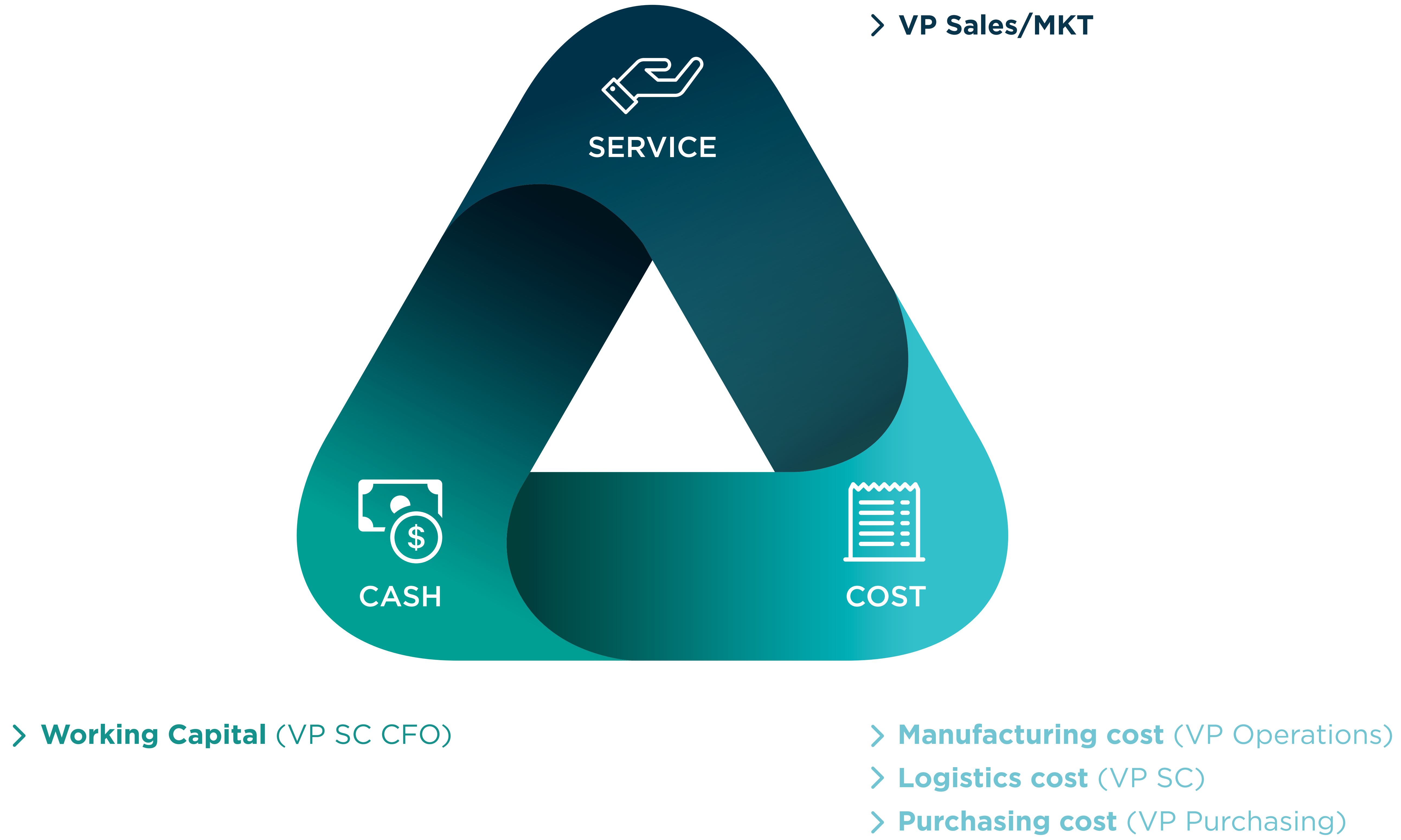


Figure 3 - Resulting pressures in the Supply Chain Triangle from a traditional organization

[1] As an example of the financing: the rent on a loan may depend on how good you put your money at use, e.g. measured by the cash conversion cycle.

WHEN GROWTH STALLS …
A DANGEROUS CATCH-22

When the company is growing year-on-year, has healthy profits, the lack of alignment in Figure 3 is likely to continue. There is little incentive for any stakeholder to change the rules of the game. It would only get more complex … and since we're doing well, there is no driver for change.

The trouble begins when growth is stalling and margins are eroding. In a typical response the sales will increase the pressure on the service side. We desperately try to get in any order. We are willing to make any promise that helps, including shorter lead times, expedited shipments, changes in the payment terms, some safety stock at the customers site, …

To sustain margins, operations will start a relentless focus on cost. To lower production costs we prefer big runs and limited changeovers. To lower the purchasing cost, we take more commitment to the suppliers, buying in bigger lots and increasing the inventory risk.

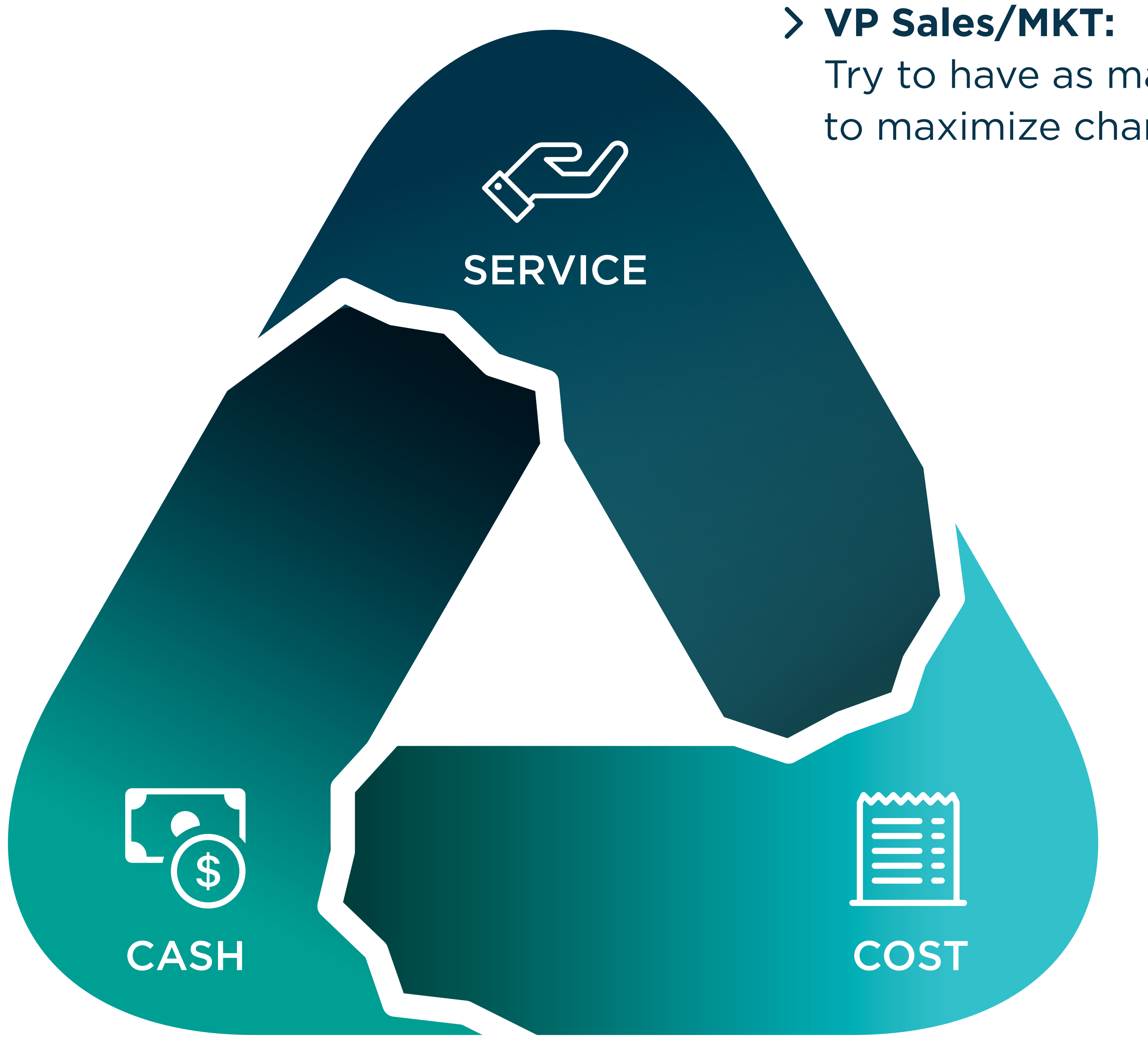
A business in trouble needs cash to turn around the situation. The cash may need to go into the development of new products, exploration of new markets, a rebranding, a take-over, …

To generate the cash, we assign the unlucky VP of Supply Chain with the challenge of aggressively reducing inventories, the 30%. He has his back against the wall. Simplifying the product portfolio will go against sales. Stopping production to control inventories will go against manufacturing. Supplier contracts have just been renegotiated, with a focus on cost instead of cash.

The result is shown in Figure 4. For a business in trouble, the pressure in the triangle further increases. A typical reflex is for each function to pull harder on their side of the triangle. The result is we'll remain stuck in the middle. We'll not manage to free up cash, we'll have a hard time to sustain service and top-line. We'll continue to struggle with profitability. We risk being divested or taken over, unless an act of God is changing the market.

In difficult times we badly need alignment in the triangle. It's the only way out. However, as we've seen there's limited incentive to create alignment when times are good. It's a dangerous catch 22.

- **VP Sales/MKT:**
  Try to have as many items on stock as possible to maximize chances for sales



- **Working Capital** (VP SC CFO):
  Try to squeeze inventory by:
  › pruning the product portfolio
  › stopping production in case demand less than supply
  › reduce MOQ batches
  › force suppliers into consignment & VMI

- **Manufacturing cost** (VP Operations):
  maximize efficiency, smooth production & maximize production runs
- **Logistics cost** (VP SC)
- **Purchasing cost** (VP Purchasing):
  buy larger quantities to get a lower price, take firmer commitments to ensure a lower price

Figure 4 - What happens to the tension in the triangle if the pressure increases?

CREATING ALIGNED TARGETS. STRATEGIC TRADE-OFFS.

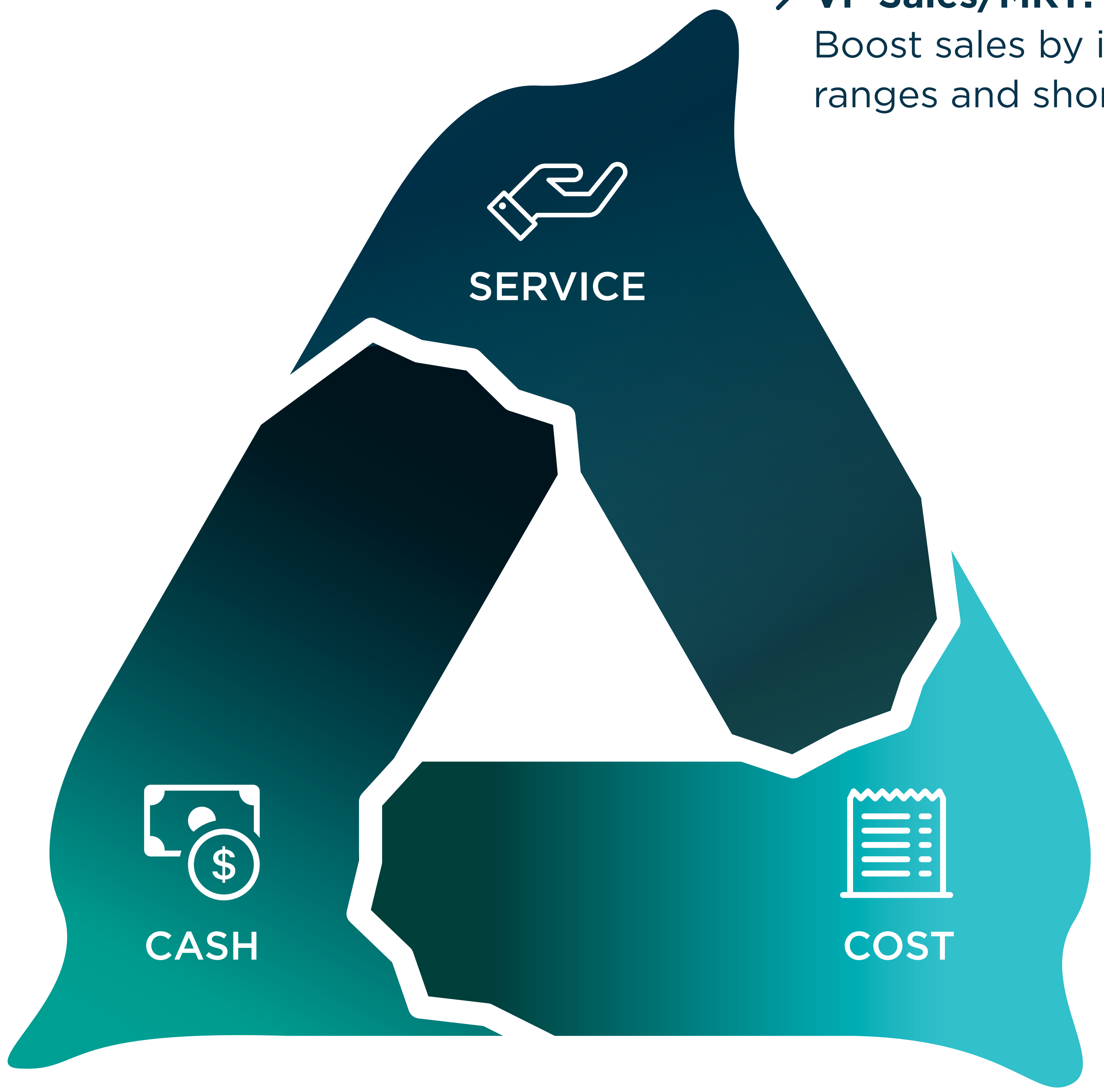
I often see companies defining targets on each of the corners without cross checking their compatibility. Figure 5 gives a typical example. Each of the VP's is drafting up 'his' plan to turn around 'his part' of the company. The result can be conflicting.

Pushing these targets and plans into the organization will simply create chaos. The one who pushes the hardest will get the best result. But the overall result is unlikely to satisfy the overall business need.

Figure 5 - Setting unaligned targets to turnaround the company

Ask each VP to come up with his plan

- **VP Sales/MKT:** Boost sales by introducing new product ranges and shorter lead times

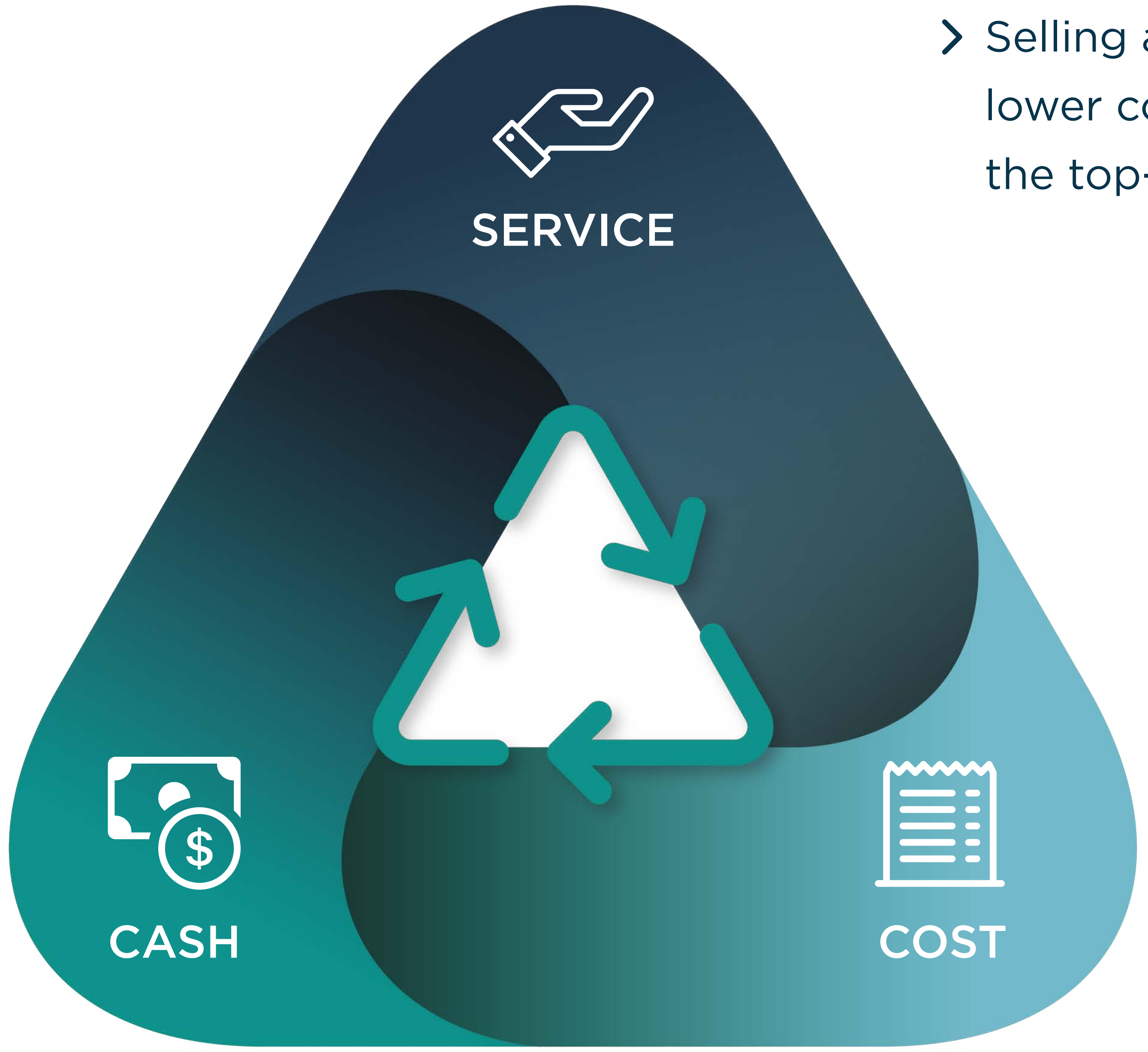


- **VP Finance:** Launch Working Capital Reduction
- **VP SC:** Responsibl for a 30% inventory reduction
- **VP Ops:** Improve cost by bigger batches
- **VP Procurement:** Improve cost by bigger lots

An example of balanced targets is shown in Figure 6. After some discussion, the company has found a way to satisfy improvement on all of the angles. A breakthrough product will sustain both top-line and bottom-line and allows getting rid of older, less performing products. This is a silver bullet.

Figure 6 - Setting aligned targets to turnaround the company

E.G. sustain top-line by replacing an old range of products with a new product that has a higher spec and a lower cost



- Selling a higher spec product at a lower cost will definitely support the top-line
- The new product will allow phasing out families of older products and lower inventory
- The lower cost will also support to bottom-line

You may not have that silver bullet. In that case you'll need iterations to come to a feasible plan. If sales want to add more service and products to sustain the topline, assess the cost impact.

Review together with sales, how you will still get to the lower inventories. It may require a double reduction on some of the existing products. That iterative approach is shown in Figure 7.

The main conclusion here is: never accept an inventory reduction target in isolation. If the question is no more than "reduce the inventory with 30%", say NO. Start the discussion, and look for the balance with other targets.

Only when you feel that the targets on each of the angles are aligned and add up to a realistic plan, then you commit to the inventory part!

E.G. looking for balance in the absence of a silver bullet

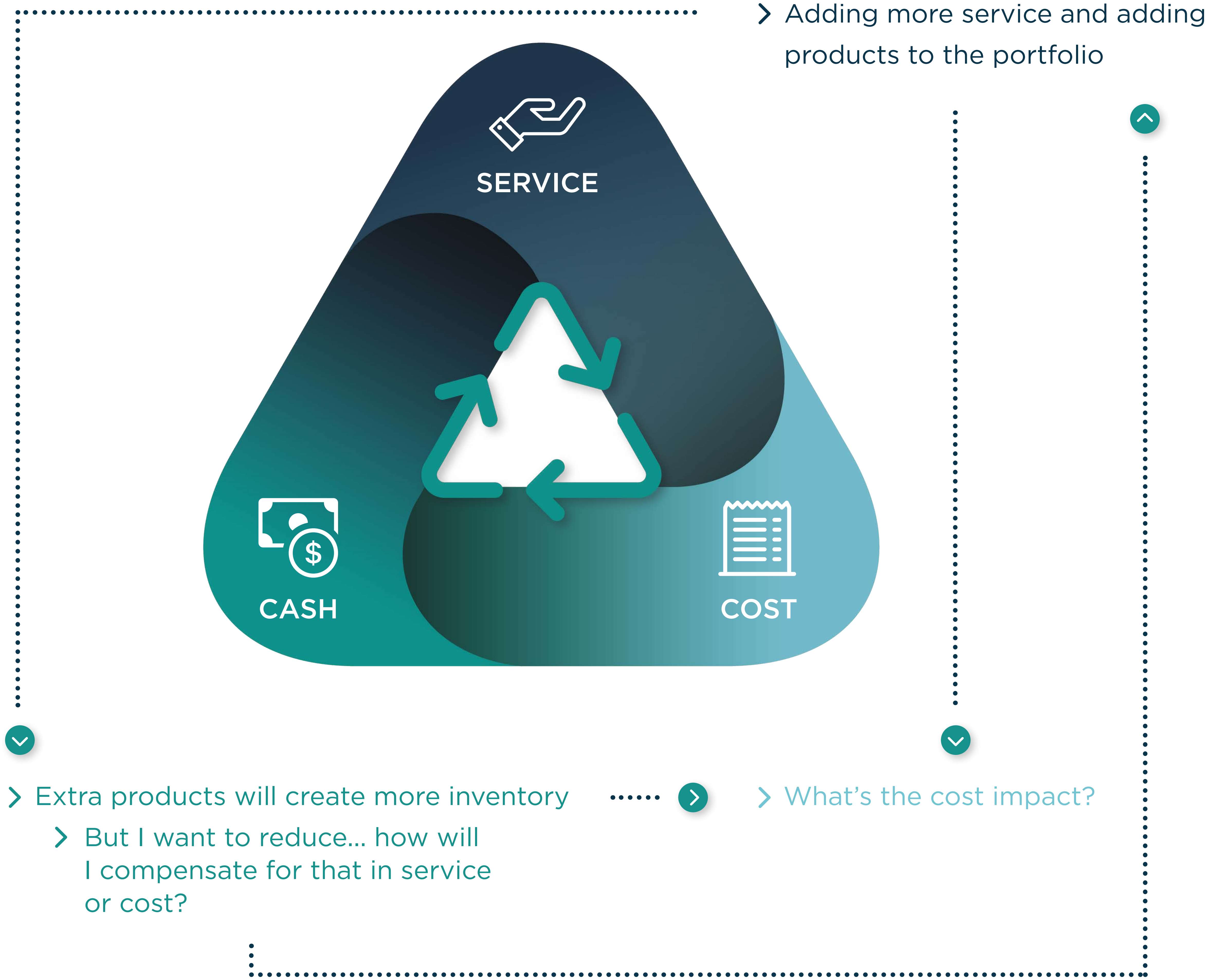


Figure 7 - Looking for a target alignment in the absence of a breakthrough

INVENTORY TURNS AS A SHARED KPI

When looking at ‘inventory ownership’ we have seen different solutions. Within companies it can even be a pendulum. Maybe supply chain was responsible until there were service issues. Then sales became responsible but the inventory ran out of control with too many write-offs.

The CFO then defined a target and we had split responsibilities for Raw Materials, WIP and Finished Goods. The targets were based on benchmarking and turned out unrealistic.

While any of the above functions can be in charge of managing or reducing inventory, none of the functions can do it alone. We firmly believe that inventory turns should be a common KPI shared by all the members of the executive team.

That will make it part of the target setting and improve alignment. Share inventory as a KPI (inventory turns, % write-off, …) but assign a single process owner for ‘inventory improvement’, cfr. Figure 8.

INVENTORY TURNS AS A SHARED KPI

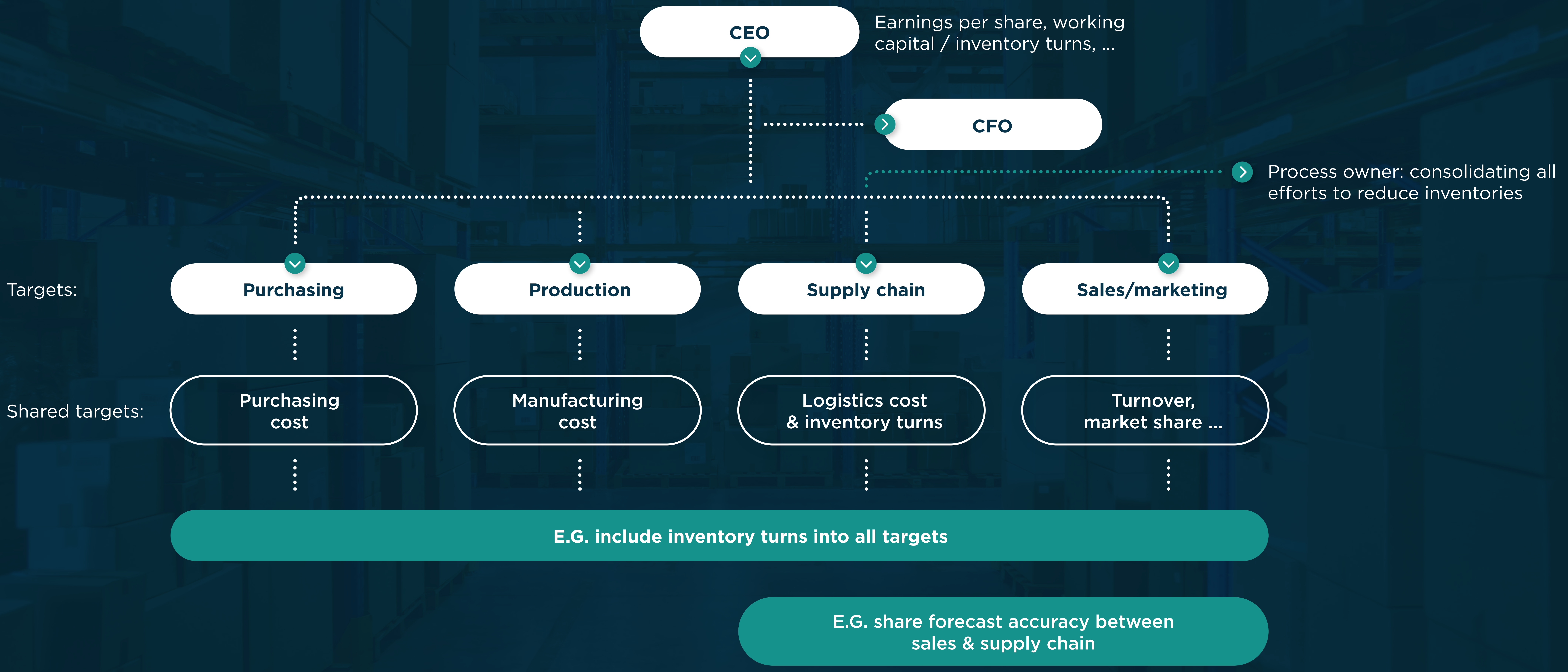


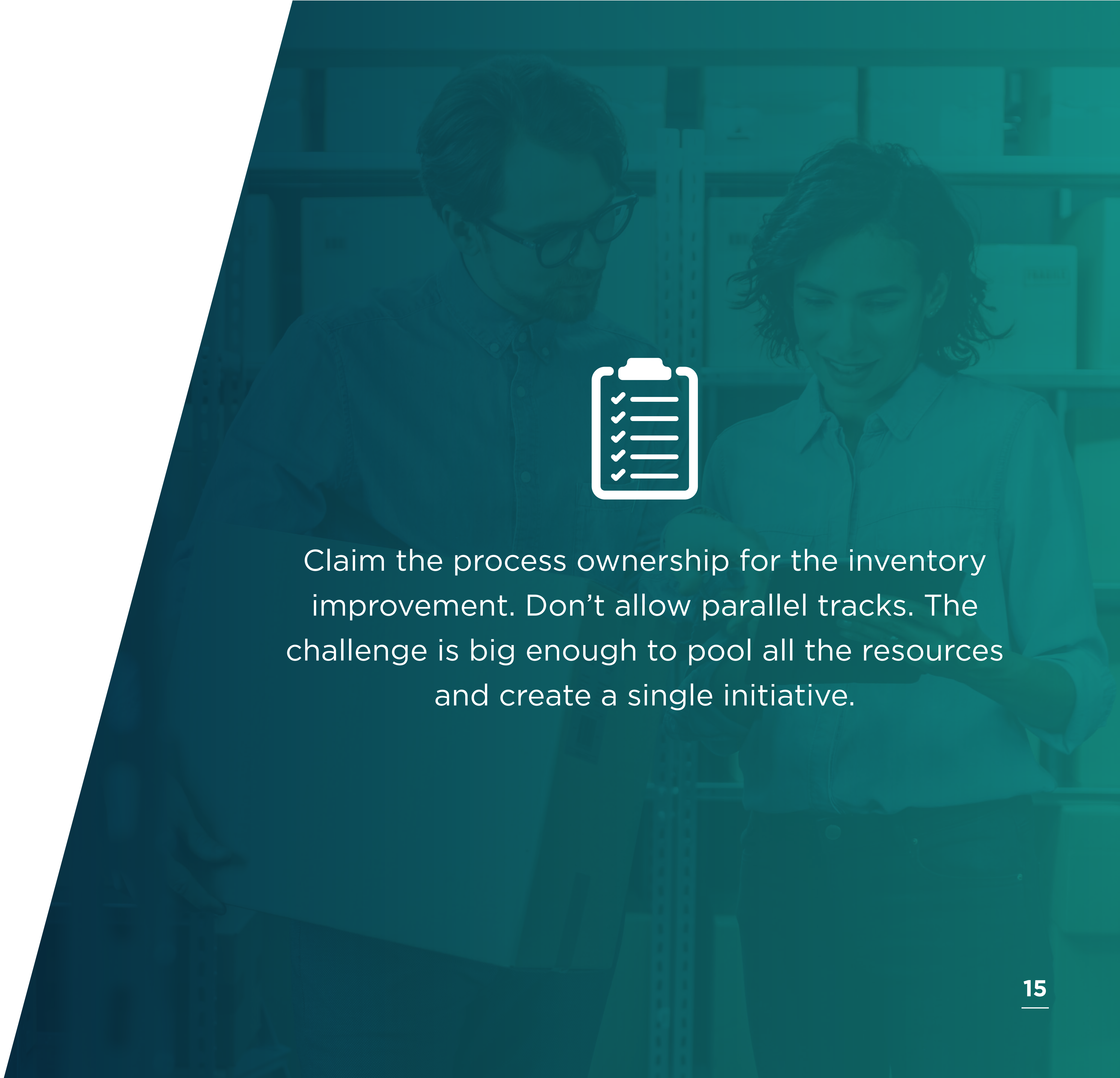
Figure 8 - Inventory Turns as a shared target, with 1 function as the process owner

As long as inventory is a shared KPI, any function can take the role of the process owner. Of all functions we believe that the Supply Chain function is best placed to do so.

Through collaborative processes such as S&OP it has a privileged end-to-end view. It makes an easy spokesperson across functions. Supply Chain is often responsible for Planning. The planning process is key in avoiding the wrong inventories. Setting inventory targets requires analytical skills.

In general, these analytical skills are more readily available in the Supply Chain function.

To conclude for the VP Supply Chain: Dare to say NO, if inventory is not a shared KPI, tied into the objectives of the executive team. Don't go there alone!



Claim the process ownership for the inventory improvement. Don't allow parallel tracks. The challenge is big enough to pool all the resources and create a single initiative.

BALANCING THE TRIANGLE IS ABOUT OPTIMIZING THE RETURN ON CAPITAL EMPLOYED

Though people from different backgrounds – supply chain, finance, sales, marketing – recognize the tension in the triangle, the dominant thinking is that the tension is "unavoidable" and "this is how companies work".

I do get questions like "won't there always be conflicting objectives between sales, operations and finance?" and "isn't the conflict a source of creative energy?", "isn't that exactly what keeps companies going"? Though rightful questions, I believe the answer is no, and the answer lies in taking an investors perspective. Figure 9 shows that service is a driver for revenue. As we mentioned before, marketing and sales are primarily service driven as they are, in many companies, primarily top-line driven.

Most companies have growth objectives. In the absence of breakthrough innovations, it will be tempting to stimulate growth by increasing the services offered to the market.

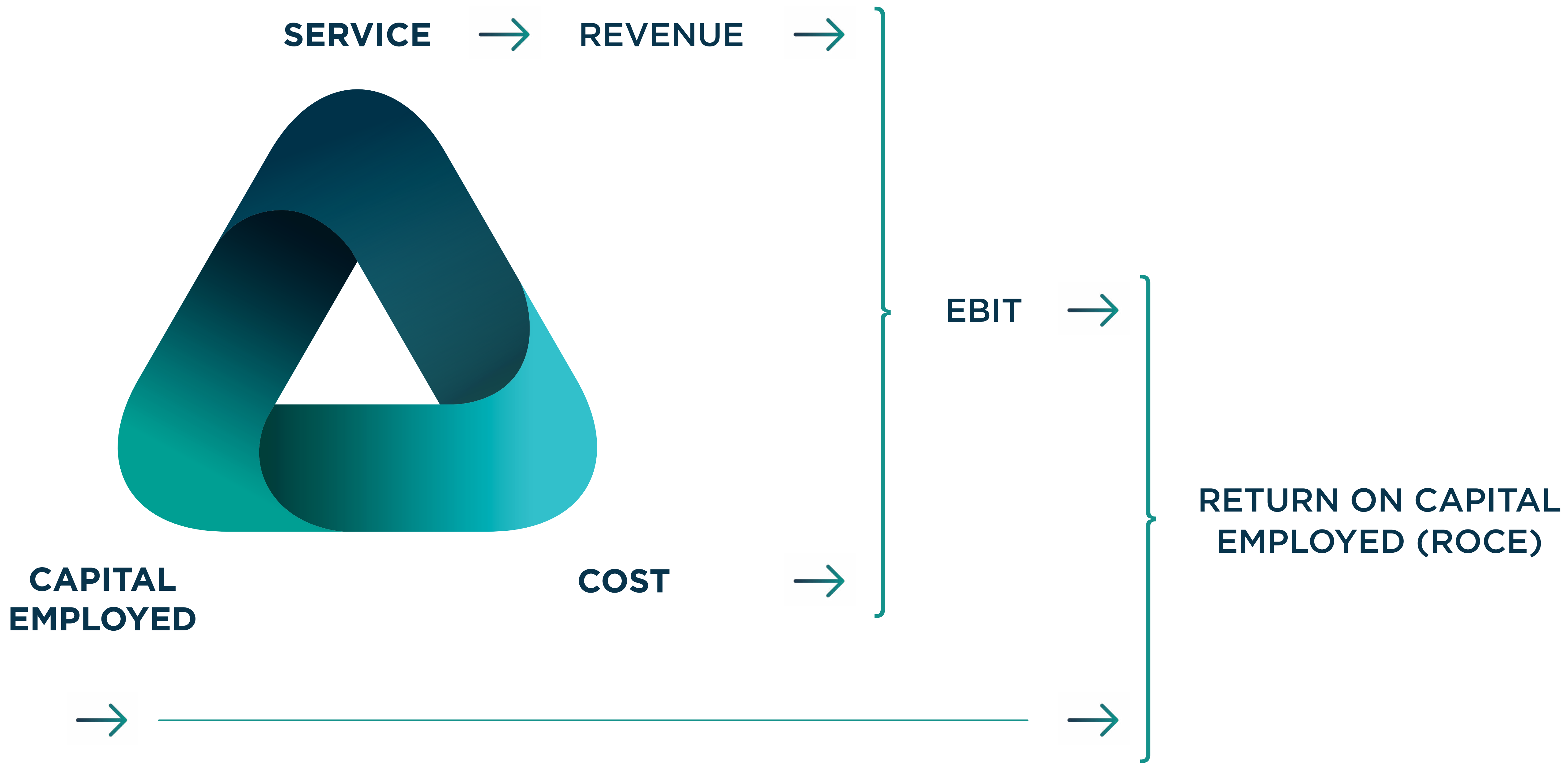


Figure 9 - Aligning the triangle is about optimizing the Return On Capital Employed (ROCE)

Though growth is good, it most often is not a goal in itself. As an investor, I would like to see a profit, at least in the long-term. Figure 9 shows as well how we can combine the service and the cost side of the triangle into a profit metric like the EBIT, the Earnings Before Interest and Taxes.

But as an investor, I am concerned with more than EBIT. If I have 2 companies generating 100Mi of EBIT, but the first requires 2Bi of capital and the second only 1Bi, then I'd rather do the second investment twice. As an investor I am most concerned with the EBIT you generate over the capital employed, which is the exact the definition of the Return On Capital Employed or the ROCE. It's OK if your EBIT is a bit lower as long as you need less capital. Or vice versa, it's OK if you need more capital as long as your EBIT is higher.

As an investor I will judge you by the **"bang-for-the-buck"**, the EBIT you generated, over the capital employed. That is again illustrated in Figure 9.

Bang for the/your buck:
More value for one's money,
a greater return on an investment.

Let's revisit some of the examples from Figure 5 with the ROCE principle in mind. Expanding the product portfolio will increase the inventory, it may also require extra investments to be able to produce the extra new products. So what to do? Is it worthwhile to pursue? The dominant thinking in companies today is 1. Growth, 2. Profit and 3. Capital Employed.

Some companies are so focused on growth, that any initiative supporting growth will automatically get approved. In general, companies have become more concerned with profit. Many companies will assess the impact on profit, and in case these are promising, they will go with the expansion of the product portfolio.

In only limited cases, companies ask the question what the impact is on their working capital, and what will it do with their return on capital employed. Companies typically do reflect on the fixed assets, as these may simply be a necessity to buy or install to get to their planned extension.

In the quest for growth, companies over the years add complexity to the service corner. They offer more products, they offer them faster, they get more flexible in honoring customer specific requests. Again, adding service will create value for the customer and support the top-line and your market share.

As a result, when supply chain managers try to reduce inventory by pruning the product portfolio, it is typical to get pushback from marketing and/or sales saying, "you can't cut this product, it's critical to customer A and B, I know it's not profitable but we will lose these customers if we no longer have it".

Ask each VP to come up with his plan

- **VP Sales/MKT:** Boost sales by introducing new product ranges and shorter lead times

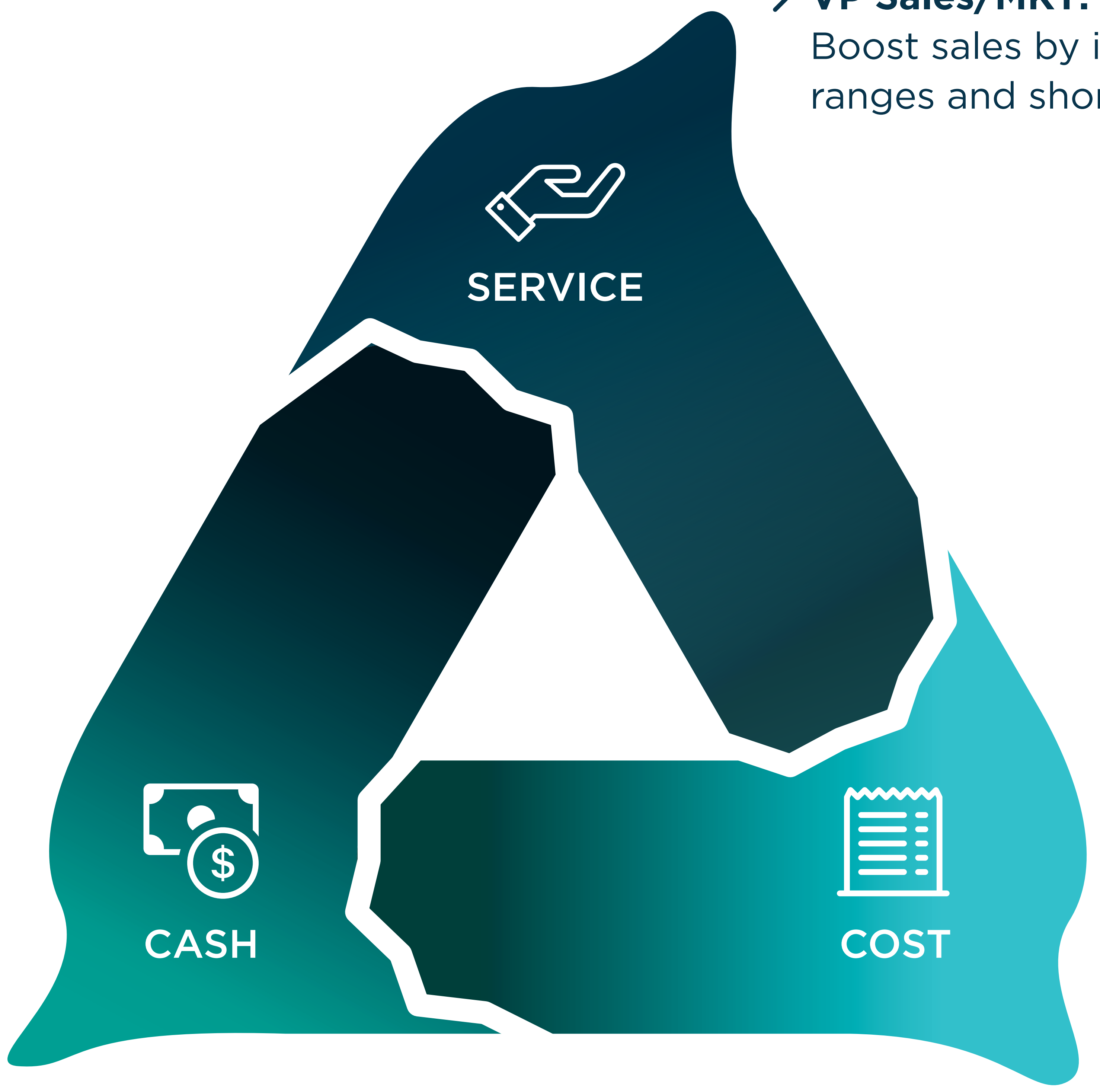


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Figure 5 - Setting unaligned targets to turnaround the company

So how to solve this? Start by recognizing that yes, if you stop certain products, it will negatively impact the top-line. If it was possible to stop certain products without impact on the top-line you'd be in really backward situation!

The question you need to ask is what it will do with your ROCE. In general, as products get to the end of their life, volumes are decreasing, and because of low cost competition profits are eroding even faster.

At the same time, delivering good service will proportionally require more inventory, or inventory turns will be going down. This negatively impacts the "bang-for-the-buck"! I get less profit for more investment. That's not something I want! If I look at my product portfolio it will be clear that some products and customers are positively contributing to my ROCE, where others are lowering it.

In supply chain terms, people often talk about 'good complexity' versus 'bad complexity'. Bad complexity lowers our ROCE and should be taken out. But not all complexity is bad.

A lot of supply chain people often like to simplify the service side as to minimize the cost. This is a step too far. Some of the complexity will be adding value and can be classified as good.

IN SUMMARY

Supply Chain Management is all about balancing your Service, Cost and Cash as is captured in the concept of the Supply Chain Triangle. Balancing the triangle is about optimizing the Return on Capital Employed, or as the Americans say, the ‘bang-for-the-buck’. S&OP is your key to balancing this Supply Chain Triangle and generate shareholder value as a result!

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.