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2023 Research Report:
Do executive boards understand how much inventory they really need?

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Introduction

When supply chain disruptions are significant, inventory rapidly becomes a board-level concern. It therefore comes as no surprise to find that at the end of 2023 a large majority of C-suite executives regularly discussed inventory at board level. But beyond that, what do these leaders think of their organisations' inventory levels and inventory management capabilities? And how grounded do those perceptions appear to be in objective measures?

These were the questions we set out to answer with our recent survey of 250 C-Suite executives at large manufacturing companies. Some of the findings of the survey are what might be expected: that inventory is a strategic concern, that inventory management is a priority for investment and that there is quite a wide range of performance in high-level inventory KPIs. What was not necessarily so expected, however, was a stark lack of correlation between perceptions and actual performance.

Inventory is a critical buffer against uncertainty, but having too much can be just as undesirable when demand is weak as having too little when demand is strong. No one plans to run out or have too much, but those are the risks of getting it wrong. You would therefore expect those organisations which lose sales or scrap obsolete inventory to be least satisfied with their performance, but that is not what comes out of this survey.

Of course, in some industries the balance is much harder to achieve than in others, but over a group this size - and the range of manufacturing industries represented - a broad correlation between results and perceptions should be expected. However, despite the fact that inventory levels are negatively impacting business performance for many, there is broad satisfaction that those same inventory levels are what they should be.

This research report explores what those perceptions of inventory levels are, compares them against measurable performance, and explores the principal root causes for the misalignment between the two.

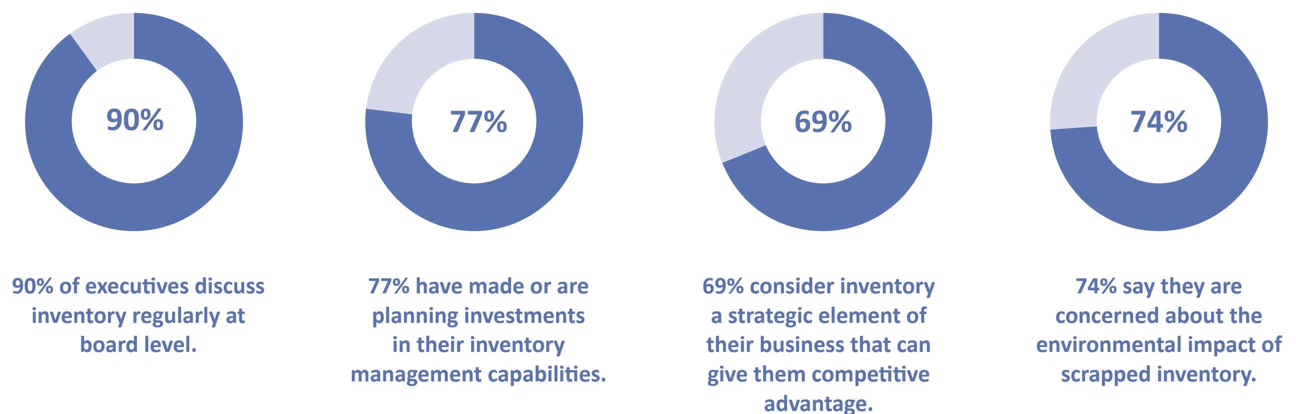
Research findings

We conducted a survey of 250 C-suite business leaders in large manufacturing companies to assess how important inventory management is to them, their perceptions of inventory levels and capabilities, as well as current inventory performance.

The results revealed that the strategic importance of inventory is recognised by most manufacturers (**figure 1**), with 9 in 10 regularly discussing it at board level and 77% reporting either recent or planned investments in their inventory management capabilities.

Moreover, just under three quarters (74%) expressed concern about the environmental impact of their scrapped inventory, with a further 69% picking it out as a key element of their business strategy that can give them a competitive advantage.

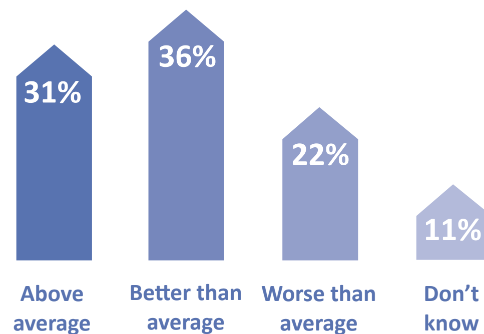
FIGURE 1: The strategic importance of inventory



It is striking that inventory continues to be a board topic for the vast majority of manufacturers. While the initial impact of Covid disappears in the rearview mirror, ongoing swings on both demand and supply sides mean that important inventory decisions are still being made at the most senior levels. Supply worries led to a build up of inventories for many, but that clogged up warehouses and led to significant write offs of obsolete inventory. This in turn is at odds with a widespread desire to minimise environmental impacts. Goods that are sourced, manufactured, assembled, packaged and transported only to be scrapped have a negative impact on both financial and environmental measures.

While boards are regularly discussing inventory themselves, it would appear that few consider inventory management to be a core competency of their organisation. Only 36% consider their current capabilities in this area to be above average (**figure 2**).

FIGURE 2: Inventory management capabilities

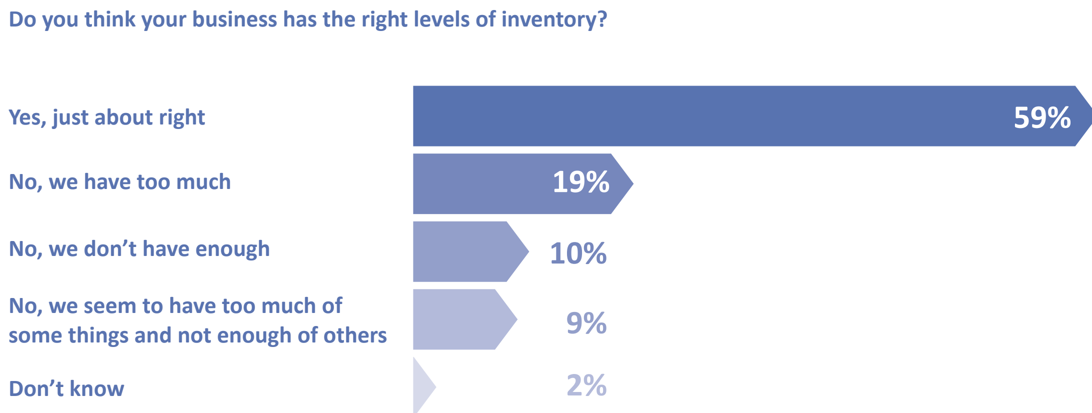


Perhaps for this reason, 77% have either made investments in this area over the last 12 months or are planning them in the coming 12 months (47% report both).

		Are you planning any investments (e.g. projects, technology) to improve your inventory management in the next year?		
		Don't know	No	Yes
Have you made specific investments (e.g. projects, technology) to improve your inventory management in the next year?	Don't know	14	14	9
	No	11	19	26
	Yes	12	28	117

Despite this reasonable-sounding and normally distributed assessment of their organisations' inventory management capabilities and needs, a clear majority (59%) of respondents believe that they have more or less the right inventory levels (**figure 3**) despite the turbulent times. Perhaps they consider average capabilities to be sufficient to deliver the right balance even in such circumstances, or perhaps they just consider themselves lucky!

FIGURE 3. Inventory levels



What about performance itself? We asked our C-Suite panel whether inventory had had a negative impact on business performance over the past three years, as well as more specifically whether they had lost sales due to inventory shortages and how much inventory they regularly scrap.

60% reported negative impacts on their business performance due to inventory levels over the last three years, with a further 12% uncertain (**figure 4**). Only 28% were prepared to claim that inventory had not negatively impacted their performance. When you compare those results with lost sales, you can see that negative business impact from inventory is essentially synonymous with lost sales for this group. Meanwhile, 37% report regularly writing off more than 5% of inventory each year, with 14% writing off more than 10% (**figure 5**).

FIGURE 4: Business impact and lost sales

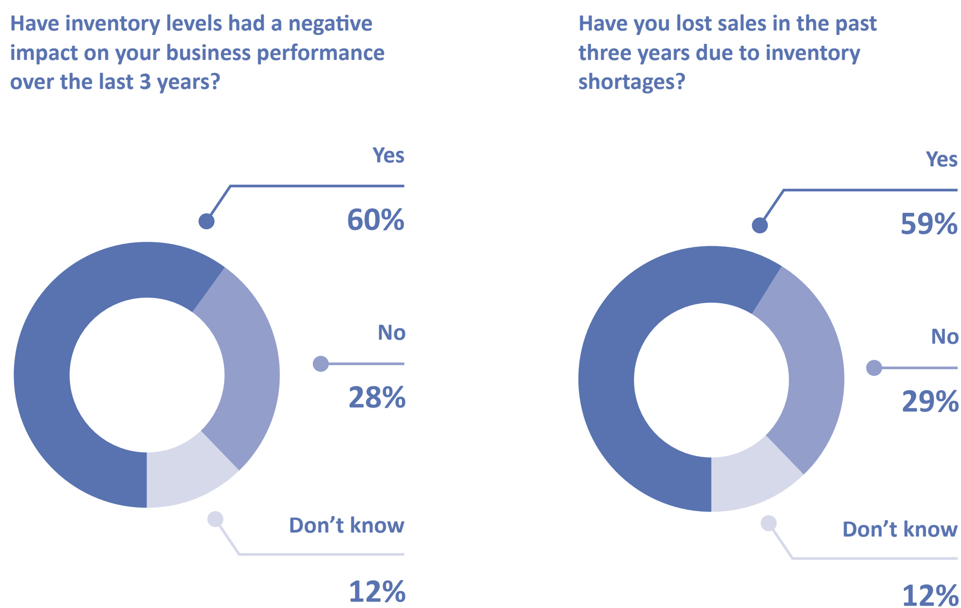
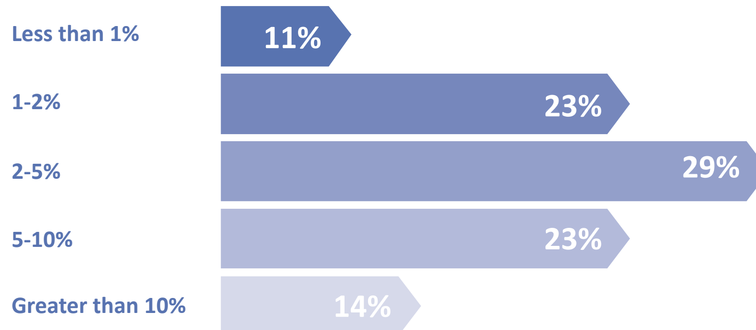


FIGURE 5: Inventory written off



These reported performance results would seem to suggest there is significant room for improvement, and doesn't entirely resonate with the overall perception that inventory levels are "more or less right". But the results become more intriguing when we dig down a level.

Analysis

What is particularly striking in the results is the lack of correlation between perceptions and performance. What do we mean by this? That, generally speaking, those with objectively sub-optimal inventory performance are no less likely than those with better performance to report satisfaction with their inventory levels and capabilities.

Let us take an example and compare the responses to two of the questions: 'Do you think your business has the right levels of inventory?' and 'Have you lost sales in the last three years due to inventory shortages?'

You might imagine that those who have not lost sales should be most likely to consider their inventory levels about right, but just under 23% fit this description, whereas over 25% have lost sales and yet consider their inventory levels to be about right. Barely 2% have not lost sales and consider that they have too much inventory, whereas 16% who think they have too much inventory have lost sales. Amongst those who have lost sales, three times as many think they have the right amount of inventory as those who think they don't have enough.

		Have you lost sales in the past three years due to inventory shortages?		
		Don't know	No	Yes
Do you think your business has the right levels of inventory?	Don't know		3	3
	No, we don't have enough		4	22
	No, we have too much	1	6	40
	No, we seem to have too much of some things and not enough of others	2	2	19
	Yes, just about right	28	57	63

12% admit not knowing whether they have lost sales due to lost inventory over the last 3 years, while only 2% don't have an opinion as to whether their inventory levels are correct. Over 90% of those who don't know if they have lost sales are nevertheless prepared to state that their inventory levels are about right!

Another example comes from comparing the responses to 'Do you think your business has the right levels of inventory?' and 'What percentage of your inventory do you usually write off each year?'

		What percentage of your total inventory do you usually write off each year?				
		<1%	1-2%	2-5%	5-10%	>10%
Do you think your business has the right levels of inventory?	Don't know	2	1	1	1	1
	No, we don't have enough	1	8	11	4	2
	No, we have too much	3	20	18	5	1
	No, we seem to have too much of some things and not enough of others	2	1	7	11	2
	Yes, just about right	19	27	36	37	29

Again, you might imagine that those who scrap the most would be least happy with their inventory levels, but this is not the case.

Those scrapping between 1-2% each year are the least likely to report having the right inventory levels, whereas those scrapping over 10% are the most likely. Those scrapping 1-2% are also the most likely to consider they have too much inventory, whilst those who are the least likely to consider they have too much are those scrapping over 10%!

The one instance where there does seem to be correlation in responses is between the different perceptions. Compare 'Do you think your business has the right levels of inventory?' and 'How do you consider the current inventory management capabilities of your organisation?'

		Do you consider the current inventory management capabilities of you organisation to be:			
		Don't know	Worse than average	About average	Better than average
Do you think your business has the right levels of inventory?	Don't know	3	1	0	2
	No, we don't have enough	1	12	10	3
	No, we have too much	0	9	34	4
	No, we seem to have too much of some things and not enough of others	0	9	11	3
	Yes, just about right	23	25	23	77

In this case, there does seem to be a good correlation between those who think they have about the right amount of inventory and those who think their inventory management capabilities are greater than average. Although even here it is noticeable that those who either consider their inventory management capabilities to be worse than average or who don't know how strong they are, are also more likely than not to consider they have about the right inventory levels.

A lack of visibility

What these results show in aggregate, and in particular in the lack of correlation between perception and performance, is that executives are missing objective inventory performance metrics against which to measure themselves. While some (with no or few lost sales and minimal inventory write offs) might be justified in believing they have good inventory management capabilities and approximately the right inventory levels, there is clear evidence from the survey that many hold this belief despite strong evidence to the contrary.

One root cause of these surprising results might be a lack of visibility at board level. The least commonly reported scenario is "we have too much of some items and not enough of others" despite this being almost universally the case at an operational level. Similarly, the fact that of the 12% who were unable to say whether they had lost sales due to inventory levels, 90% were prepared to say that they had the right inventory levels is a hint that at least in some there is an underlying assumption that inventory levels are all right even in the absence of key information.

Either way, if the 77% who are investing in their inventory capabilities really want to judge whether those investments pay off, they need to develop a strong and objective way of establishing what good looks like.

This might be complacency: writing off 5% of inventory every year and losing some sales is "good enough".

Or it might be despair: "it's impossible to do any better".

Conclusions

Donald Rumsfeld once famously referred to unknown unknowns. There are things we know that we don't know, but there are also things we don't know that we don't know. There seems to be widespread evidence of this latter phenomenon in our survey results.

The underlying problem is not so much that many C-suite executives are in the dark about their inventory performance, as that they are not aware that they're in the dark about their inventory performance. Not in the sense that they don't know if they're losing sales or scrapping inventory - the vast majority surveyed did know this, as you would expect - but in the sense that they don't have a good, objective way to tell if that performance is good, bad or indifferent.

A common perception is that inventory performance is primarily tied to forecast accuracy. Since no one has a crystal ball with which they can unerringly predict future demand, there is an expectation that inventories will sometimes get out of balance - if sales rise you might run short, if they drop you may have excesses. But this is missing the point that inventory strategy should precisely be designed to buffer against such uncertainty. If you know how much deviation there usually is between forecasts and actuals, you can select an appropriate inventory level to deal with it, along with an appropriate supply chain responsiveness strategy.

In practice, many organisations are not following this approach, instead planning to their forecasts. This creates a blind spot, even at the operational level, relative to inventory performance. Where even those responsible for the day-to-day management of inventories are lacking the visibility of inventory performance, it should perhaps not be surprising that senior management is equally, if not more so, in the dark.

If your starting assumption is that it is impossible to know how much inventory you really need, then it is easy to see how you might be satisfied with your current performance, as long as write offs can comfortably be absorbed by your profits and lost sales are not unduly affecting growth or market share.

Most organisations use some variant of inventory turns to at least measure how fast their inventory is turning, and this can be used to benchmark performance year on year and against relevant industry peers. Such industry benchmarks frequently show a wide range of performance, which indicates if nothing else that companies are able to do business profitably even with significantly different inventory levels.

The truth is that inventory optimization is a major untapped opportunity for a large majority of organisations, but they are unaware of it or, worse, in denial about it. Inventory turns are relatively easy to benchmark for publicly traded companies, using DIO, but write offs are subject to accounting conventions and choice and not always declared. Lost sales are often difficult to quantify precisely and are all but invisible outside the organisation itself. This means that it is not so simple to benchmark critical business-impacting inventory performance.

At the same time, even inventory turn benchmarks need handling carefully. Strategic supply chain decisions such as proximity of supply, capacity utilisation and demand variability mean that optimal inventory levels can look quite different even between close industry peers. But knowledge of this fact can also drive complacency.

It is easy to assume that because you are trying hard to balance your inventories within your particular circumstances that you “must” be close to optimal.

Unfortunately, this is usually not the case. Over 10 years working with multiple organisations in different sectors in the manufacturing industry, nVentic has found that almost all have the potential to reduce inventories between 20% and 50% (which reduces write offs) while improving or maintaining service levels (which reduces lost sales).

Apart from the fact that organisations that come to us by definition are normally dissatisfied with their inventory levels and performance, they all start from a position of being unable to quantify how close to optimal they are. And once visibility is created and the size of the opportunity becomes clear, both the desire and the ability to do something about it follow close behind.

The vast majority of companies can deliver significant double-digit improvements to their inventory position.

Recommendations

Executive boards would not accept a situation where they had no visibility of profitability, market share or efficiency. They should insist on objective measures of inventory performance.

A critical success factor for a step change in inventory performance is better understanding inventory levels. A lot of investments in the "inventory optimization" space go into planning tools, but in many cases this just automates or facilitates sub-optimal processes: the wrong decisions can be made quicker.

In order to improve the visibility of inventory performance, more emphasis should be put on inventory analytics and the capabilities to turn the insights it delivers into actionable and sustainable process changes.

Inventory optimization is a complex process that requires robust analytics, broad organisational alignment and strong top-down support. For the C-suite to do its job in this respect, it needs to insist on objective metrics that show what good looks like, along with the key levers to achieve it.

Research methodology

nVentic created and launched a survey between 21st September and 22nd October 2023.
Survey breakdown: A survey of 250 respondents from across Europe who are currently employed at a CXO level in the manufacturing sector.

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nVentic is the leading inventory optimization specialist, with a passion for applying advanced statistical techniques to business challenges in a pragmatic, results-driven way. nVentic works intensively with manufacturing clients interested in improving inventory performance.

nVentic delivers genuine expertise, backed up by proprietary analytical tools and is committed to innovation, creating a legacy of capability to hand on to the next generation.

Founded in 2013, nVentic's unique approach helps a range of businesses across the manufacturing sector to reduce both shortages and inventory excesses quickly and sustainably.

Learn more at nventic.com