

Why Fight Reality with Complexity when you can Change Reality?

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Executive Summary:

Consumer goods companies look at their businesses through a lens of complexity. What choice do they have, with so many locations in their supply chains, suppliers often twelve time zones away, DCs that are clogged with inventory, shortages, promotional discounting models, organic growth, acquisitions to digest, lots of debt and slim net margins. Unless that reality is changed, there is no reason to expect hard work will produce a better result. IDEA's business is based on a simple concept. IDEA changes reality to the point that simplicity works better than complexity. The following parable provides a base for an explanation of how we multiply profits.

There is no such place as Utopia. Still, wouldn't it be nice to move closer to perfection? IDEA helps its clients move to such a simple and elegant world that it may be hard to recognize from your current reality. To understand, appreciate and implement the inherent simplicity of IDEA's approach to distribution and replenishment, it is easier to begin from an imaginary reality. The utopian story I relate below will help you see things without the clutter of your current perspective. Once you carefully think through the scenario, you will be ready to add back only what is necessary to get to a new reality. The IDEA reality has been implemented and proven. Your gut feelings or common sense will scream to you that this is wholesome and good, even if your head resists – for a while.

Utopia

Imagine the perfect store. Everything nicely displayed one deep on shallow racks, cases and bins. When a shopper walks up to an item they want and takes it from the shelf, another exactly like it appears in its place. If the shopper wants more than one, they keep taking them until they are satisfied. All through the store, anything anyone picks is replaced by an exact copy the following second.

What is the replenishment model? Nothing more than simple one-to-one pull replacement. It is like there is an invisible string between the one on the shelf and the next one elsewhere. When the first one is taken, it pulls the next one onto the shelf.

No Shortages

There are no shortages in the stores. So, sales go up. How much do shortages rob the cash registers of a typical retailer? It is different from store to store but is seldom less than 10%. If sales increase, say, 20%, what does that mean financially? Well, no expenses of significance increased. The extra products sold had to be purchased, of course. If mark up is 100%, then half of the 20% sales increase is gross margin. To calculate the net profit impact, we subtract the operating expense associated with the extra sales. Therefore, since there aren't any expenses worth mentioning, the net profit impact is 10% of the old sales. There are very few retailers who consistently earn a 10% return on sales. What would adding 10% of your current sales to your net profits mean in your company?

What else is different?

It will be useful to further imagine the consequences of this splendid store. Conventional stores, hold multiples of the faster moving items. In a grocery, gallons of 2% milk may have 12 facings, five deep. When you go to buy blue jeans, shelves often hold multiples of the same style, color and size. In the utopian store it would be a waste to have more than one of each item. When there is no more need for 60 gallons of 2% milk, the case looks empty. It only needs to be as deep as the deepest single item. Where there were ten refrigerated cases, two will now suffice. There are more aisles, because the depth of the shelves is less. In fact, a store's footprint would shrink to a fraction of its previous size.

Broader Line

Hold on. Before we minimize the store, would something else change? Yes. In this new world, store managers and merchandisers would be emboldened to carry many more products – a broader selection. They don't have to worry about surpluses.

Think of fashion apparel. Today merchandisers pick from hundreds of manufacturers, each with thousands of designs in many colors in a dozen different sizes. Shoppers only see a small part of what is available. The merchandisers are paid to guess what will sell well and not to guess wrong. They don't take too many chances, because the last time they did, inventory clogged the stores and DCs. Inventory turns plummeted. Open-to-buy dollars dried up. The store was forced to discount heavily and maybe even use the best in-store real estate to promote those dogs. Perhaps, a person was blamed and fired. Once burned, twice shy. In a retail utopia, they show much more of the potential selection. If a product doesn't sell fast enough to suit the retailer, they just promote one in each store. Once it sells, a different product is picked to replace it.

Less Discounting

Discounts virtually become a thing of the past. Outlet stores disappear from the face of the Earth. *(If you work for a liquidator you are sick to your stomach by now – lucky this is just a fantasy. Or is it?)* What is the cost of discounting? Obviously, it is vastly different depending on what is sold. Shelf life or market life is limited for most consumer goods. Fish merchants say sell it or smell it. Leading edge consumer electronics aren't always much better. Fads come and go. Even staples like salt or sugar can absorb enough moisture to go bad over time. Broadly, the damage from discounting is less than the damage from shortages. However, it may be much worse in a specific case.

Assuming discounting reduces sales by 5% today, the impact to the bottom line of not discounting in the utopian retail world is to add a further 5% of sales to the bottom line. So we don't lose track, sales have gone up by 25% and net profits are up by 15% of today's sales on top of what was already being earned. We have gone to no extra trouble or expense. Actually, since we no longer worry or expedite, life is much easier.

Unclogged Stores

Don't forget that one of the problems with slow movers was that they clogged up shelves and consumed open-to-buy funds. Also, they often required the use of superior in-store real estate, the end caps that every shopper passes. In a utopian store, this prime space has the products that are most in demand and generate the most gross profit dollars. Count this factor for another 10% sales increase and 5% to net profits.

The benefits of a broader line also mean another huge impact on sales, much bigger than what we have discussed so far. A utopian store sells goods which were not on shelves before. Assume the best items



were already being offered; even so, there is almost unlimited money and shelf space available from eliminating multiple items from the stores. Selling a far broader line must result in at least a 50% increase in same store sales. If we stick to the 50% margin assumption, it means another 25% increase to net profits.

Impact on Plants

Products still must be manufactured somewhere. The difference is that an expensive but available technology allows a direct connection between store shelves and the source of supply. The source of products would no longer be the current regional or central distribution center of the retailer or a distributor. There would be no need for such facilities. Why stage inventory close to the stores, when you can get it where you need it instantly, even from China? *(Note: I didn't suggest magic or a cheap technology for the reason that every person would have access to that, eliminating most of the reasons for stores.)*

Consumer goods could be made anywhere. However, something else must change in the fast moving consumer goods industry. An implication of instant delivery direct from the factory is that factories must hold inventory. Even for fashion items, there must always be enough on hand at the plant to ship one instantly to any of the hundreds or thousands of stores being supplied that might sell one.

Individual stores only have to show one of each product for display and availability purposes. Production plants, on the other hand, must still make production runs. The runs must be big enough to create enough finished goods inventory to serve their customers' stores until there is an opportunity to make more of that item. On the other hand, the runs must be small enough so that set up costs are not too high and so that they get back to making the item again soon. To clarify the last point, since there are more products available in utopian stores, if production runs are long for all products, it creates a longer delay between production runs for any given product. The bigger the runs, the longer the delay between runs and the bigger the runs must be and so on, around and around. Therefore, utopian manufacturers make small runs frequently to replenish their finished goods inventories. They prioritize and make for availability, then zap from stock.

Lacking the efficiency of long production runs and since they now have to hold inventory rather than being paid in advance via letters of credit, manufacturing commands higher prices. Ouch, you say. This is not bad. Remember, retailers are enjoying much improved profits and net return on inventory has skyrocketed. Also, transportation and warehousing costs are a thing of the past. Let the manufacturer or brand owner have those savings as an incentive to make sure a much broader range of products is always available. To do otherwise risks killing the goose that lays the golden eggs.

The brand or manufacturer keeps the savings from the elimination of transportation and distribution. The increase to the supplier is probably in the 10% to 20% range. This is a happy circumstance indeed in their hyper competitive world. In most cases, suppliers of fast moving consumer goods are lucky to make a small single digit net profit margin.

Exchanging to Enhance Product Mix

Using the new technology, it is also possible to send goods back. True, the brand or manufacturer is more likely to have a willing buyer for the product than any one retail store, but this is not why they strongly prefer to take slow movers back. The damage to the supplier is greater if the products are not taken back. Why? The supplier misses sales when a slow mover sits on a retail shelf. A slow mover clogging up shelf space is almost as bad as no shelf space, for all concerned. Since retailers now pay higher prices to suppliers than they did before, it makes the circumstance even less tolerable.



Changing the assortment away from slower movers uncovers new hot sellers. New assortments increase consumer interest. They come to stores more often and tell their friends. Expect this to increase sales another 30%, adding another 15% to net profits.

To review, the supplier and retailer have aligned interests. Antagonistic relationships are in the past. Both parties work together to bring consumers the products they want. Consumers reward the retailer (and manufacturer) with increased sales and profits. A summary of the total improvement for the retailer is shown in the table marked Figure 1 below. Assumptions would be different for every retailer but the concept is the same.

	Sales	Net Profit
Current	100%	3%
No Shortages	+20%	+10%
No Discounts	+5%	+5%
Store		
Unclogging	+10%	+5%
Broader Line	+50%	+25%
Exchanged		
SKUs	<u>+30%</u>	<u>+15%</u>
Utopian Total	215%	63%¹

Figure 1

Wow. Now that's a positive development. What would the retailer's customers call these miraculous changes? They would see the retailer as having a competitive edge in availability – no shortages, a broader line, less junk on the shelves, a broader selection, more life from perishable items, the newest items available first and a fresh new collection of goods right along side of their old favorites. All those things contribute to a consumer's perception of availability.

Now imagine that other retailers don't know this technology is available yet and only a few manufacturers have it. However, most will certainly get it in the next five to ten years. What should a retailer do?

¹ The 63% is a percentage of the current sales. It represents an increase in net profits to 31 times what they were. Net profits are 29.3% (63% / 215%) of the higher utopian sales.



IDEA's Reality

This isn't pie in the sky. As explained above, IDEA's approach is much closer to the utopia than to most consumer goods companies' current realities. No, we don't have a way to instantly transport goods around the world. Still, we get close to this ideal. The way is to change reality.

Now that we have abandoned the utopian example, links in a supply chain still exist. At each link, consumer goods companies (brands, importers, distributors, retailers, or combinations) have the same dilemma, how to maintain correct inventory levels. If they want big improvements they seek to solve the riddle for their high margin products with long replenishment times.

Before we can go further 'replenishment time' must be defined. Replenishment time starts with first consumption of a particular item after it has been delivered and ends with its next delivery. This is different from what most companies think. Most confuse replenishment time with lead time – the time it takes for products to come in after an order is placed.

IDEA defines replenishment time as the sum of three parts. They are order lead time, supplier lead time and transportation lead time. The last two require no explanation, but order lead time, which is frequently misunderstood, does.

As mentioned already, an SKU arrives at its destination. After the first sale, most companies do not place same day orders for what was sold that day. People usually decide on or at least look over orders to make sure they are OK. Making a purchasing decision after every sale would be more work and require more people than a company could afford. So, naturally, people wait before ordering. They determine what they are able to review based on the number of orders they can handle in a day. The longer the delay before ordering, the longer the order lead time is.

Max/min systems ensure there is order lead time. After goods come in, a reorder is not placed until the on hand quantity drops to a predetermined level. The wait, while consumption continues, is order lead time.

Order lead time can and will be very different for the same product in every location where it resides. It is not correct to say "I order these products weekly because I buy from *Supplier XYZ* once per week", unless you order every item that was sold every week.

Each link in the supply chain requires inventory to protect sales that is proportional to demand over the replenishment time. Safety stocks must be added to protect against uncertainty (like when the ever present Murphy strikes). Recall the utopian store only required one of each item. If IDEA can keep replenishment time low, its clients won't have to hold much inventory, either.

Shrink Replenishment Time

Order lead time is often the biggest component of replenishment time. IDEA's approach completely eliminates order lead time. This is the first reality adjustment IDEA implements. IDEA does not deliberate on the amount to replenish. Like the utopian model, we simply listen to consumption data and reorder what was sold daily.

What are the advantages?



1. Computers can easily handle millions of SKU sales per day, which relieves work and worry for people and eliminates mistakes and deviations in a chore that different people do differently.
2. There is a guarantee that exactly what was sold is replaced. There is no possibility of adding more statistical noise to the replenishment process than was present in the consumption data.
3. IDEA's order quantities are smaller. So, inventory is reduced. On hand inventory fluctuates around safety stocks plus half the order quantity².
4. Because we order each SKU more often, reactions to increases in demand occur sooner, which enhances availability and sales.

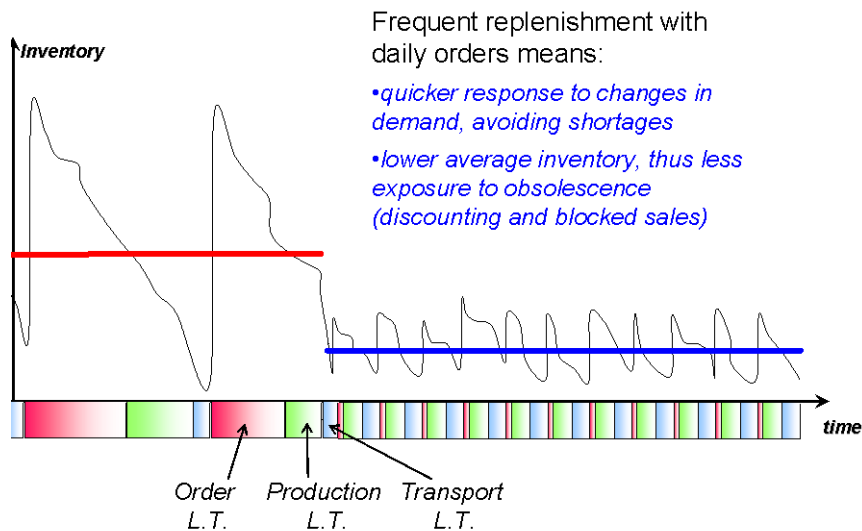


Figure 2

Buffers

Clear thinkers may reasonably ask how IDEA manages variation in replenishment time and demand for a product. Pools of inventory held by a retailer protect against heavy demand, long replenishment times and late delivery. IDEA calls these pools "buffers".

A static sized buffer is fine to accommodate normal statistical fluctuations when the average demand is stable. In other words, the level of inventory in the buffer goes up and down over time depending on the variability of the replenishment and demand patterns. However, as long as the average demand and average replenishment time don't change, what goes up comes down – the highs and lows balance out over time.

One can easily imagine a situation where demand increases over time. If so, arriving orders, which were placed during a period of lower demand, are smaller than the amounts being pulled out. If this pattern continues without intervention, it is only a matter of time before the buffer is exhausted and sales are missed due to shortages.

Alternately, the result of diminishing demand or faster delivery is too much protection. A buffer that is never used is a waste of money and space needed to store it.

² For those less familiar with inventory theory, here is a quick explanation. If all goes as planned, safety stocks are never used. They are only there for safety and are thus permanently on hand. When an order has just arrived, the order quantity plus safety stocks are on hand. An order lead time later, the next order will be about to arrive but has not yet. At that point inventory is just the safety stocks. Therefore, average inventory is safety stocks plus half the order quantity.

Buffer management

IDEA uses a buffer management mechanism to size buffers based on what is actually happening. IDEA checks every buffer every day for every SKU at each locations (with computers, remember?) If inventory in the buffer has been too low for too long, buffer management increases the size of the buffer and makes a one time addition to inventory to better protect sales. Conversely, if the buffer is too high for too long, there is more protective inventory than is necessary to protect sales, in which case, the buffer is automatically reduced.

People can approve these buffer changes until a comfort level is reached, but experience shows it usually works better if they don't interfere.

Rarely, there are times when IDEA's approach cannot adjust for demand changes fast enough to avoid a shortage. Take the example of a repeated promotional activity which is known to triple sales within one replenishment time, and the lift lasts for two or more replenishment times. This is dramatic enough to require intervention. It need not be human intervention. IDEA's system can accept the expected lift information electronically or just notice it from provided forecast data. If the boost was unforeseen, expediting may be called for.

Much more commonly, the forecast increases 40% during the back to school season or people begin to respond to product improvements. Buffer management takes such changes in stride, automatically adjusting the buffer size as needed. Buffer management is a robust mechanism that significantly reduces stock outs, even without supervision.

Manage buffers not replenishment

This is the third major way IDEA shifts reality. Rather than frequently guessing when and how much to replenish, you move to a consistent, rule-driven methodology for occasionally adjusting buffer levels. Retailers often zig or zag when hindsight shows they shouldn't have. When such decisions depend highly on the varying skill and experience levels of managers, results can vary greatly. Buffer sizes should only adjust as a result of a prolonged change in reality: when there is either clear excess inventory, or risk of a stockout. IDEA's buffer management is easier, scalable and results in better availability and far less volatility than the conventional approach.

Where should Buffers be?

Now that there is a mechanism to manage buffers, where should they be located? In the fictitious example buffers were only needed at two places, the plant and the store.

Conventionally, inventory is held close to the consumer. Inventory in a store or region becomes effectively committed to that location. Even systems that work beautifully in the direction of product flow usually fall apart when reverse logistics are needed. It is more likely that a store will discount to reduce its surpluses than it is that the store will cross ship product to another store, even when the other store is desperate for the goods. When cross shipment does occur, the expense is in addition to normal expenses. Is this wise? IDEA thinks not.

Perhaps counter intuitively, IDEA holds all inventory except for the required buffers away from the consumer. Most inventory is in a central warehouse or at the supplier's warehouse, presuming it isn't too far away. Less inventory is held in regional warehouses which are used to save freight expense. Least of all



resides at retail. (Note that there are cases where concerns about the attractiveness of visual display result in an increase in store inventory. This may be perceptually correct but, technically, there is no reason for it.)

Our approach avoids inventory being effectively committed. Inventory is diverted to the link that needs it most only when the need exists. Since central inventory buffers naturally have more aggregation of demand, the variability which is seen so clearly at a specific retail store is balanced out by the many stores served. Safety stocks which protect against variation are a much smaller percentage centrally than they must be locally or regionally. Therefore, there is inventory saved.

In every location inventory buffers are initially sized using an optimistic forecast, factoring for the risk of late delivery. Once set, buffer management takes over to maintain the buffers at the proper levels for the realities of each situation. The over all result is inventory levels are typically half as much, system wide.

How Much does this Cost?

IDEA charges in two ways. First, as consultants, we are paid only if we deliver results. IDEA triggers bonuses based on improved net profit return on inventory. We ask our clients to tell us the best return on inventory they can imagine getting. This is usually beyond what has taken place historically. We then ask them to quantify the lowest return on inventory which they are sure is currently impossible. We now have three benchmarks: current, excellence and impossible.

If we do not help a client surpass the impossible level, then an argument could be made that there was some other cause of the beneficial result. When we earn bonuses, we want our clients certain that the improvement could not have happened without IDEA. Always, bonus amounts are small fractions of what the client earns in new net profit annually and of the cash our transformations recover from inventory.

The second way IDEA is paid is through relatively small fixed fees. These unconditional monthly payments protect the client in two ways. First, the monthly fees helps ensure that IDEA doesn't go broke before bonuses kick in. A client can't afford IDEA to lose focus due to financial worries, especially when the stakes are so large. For the same reason, IDEA bills for its expenses incurred in servicing the client. The second risk these fees protect a client from is the risk that the client becomes distracted. Unless the client has enough skin in the game, the client may lose focus. The fixed fees should be enough that the client is unwilling to waste such a monthly amount. In other words, the client feels compelled to be sure they are getting their money's worth.

IDEA's Typical Impact on a Client

<i>All blue percentages are of current sales</i>				
	Current		IDEA	
Sales	100%		150%	
Gross Margin	30%	30%	53%	35%
Net Profit	2%	2%	25%	16%
Turns	4		8	
Inventory	18%		12%	
Return on Inventory	11%		201%	

Figure 3



Notice in the table labeled Figure 3 above, that net profits increase over 12 times. Six percent of their old sales drops out of inventory and back into cash, in just a few months. The impact would be even greater if gross margins are higher and beginning turns are worse. In the spirit of win-win, the client won't mind sharing a small fraction of their huge gains (which IDEA quantifies and explains in periodic reports and meetings).

In the example set forth in Figure 2, what does the client do with the 6% of sales that appears on the balance sheet? There are two options.

First they could pay off debt. If they do, assuming they pay 7% for their money, they will save interest expense equal to 7% of 6% of sales (0.42% of current sales) – good.

Second, they could hold a wider variety of products using the freed up shelf space. If they do, they will earn a 201% return on the additional 6% of inventory (over 12% of current sales) – much much better.

IDEA calls its methodology Elucidate. It is a game changer. Think about it, a huge multiplication in profits without adding any complexity. Replenishment times drop, allowing the client to react to actual consumer demand. There is no added complication, rather life at work becomes more simple without the need to forecast and constantly decide how much to order. Generally, operating expenses remain about the same.

If a retailer wants to expand their number of locations or a supplier wants to add to their product lines (and why not?), it does so from a much more stable financial platform, with much less risk and reliance on debt. IDEA makes this possible by fixing the replenishment model. Few changes are needed from the client operationally. The changes we require happen between the ears. Feels right, doesn't it?

IDEA'S WAY OF THINKING	IDEA'S METHOD
<ul style="list-style-type: none"> • Neither an accurate forecast nor changing vendors is required for success • There is a way to both increase sales and reduce inventory • Supply chains sell less when clogged with inventory • In the long term, unless the supply chain sells more no link can sell more • We must help clients gain buy-in internally and with supply chain partners • The majority of our fees are based on improved return on inventory 	<ul style="list-style-type: none"> • Verify the existence of inventory imbalances and the benefits of moving from a "Push" to a "Pull" system • Gain top management buy-in to the assessment and support of the approach • Build knowledge and understanding across the supply chain, at all levels • Utilize systems that deliver actionable information, integrated with existing software • Work with you until expected results are achieved • Share the tools and know-how to continually improve results
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