

Inventory management

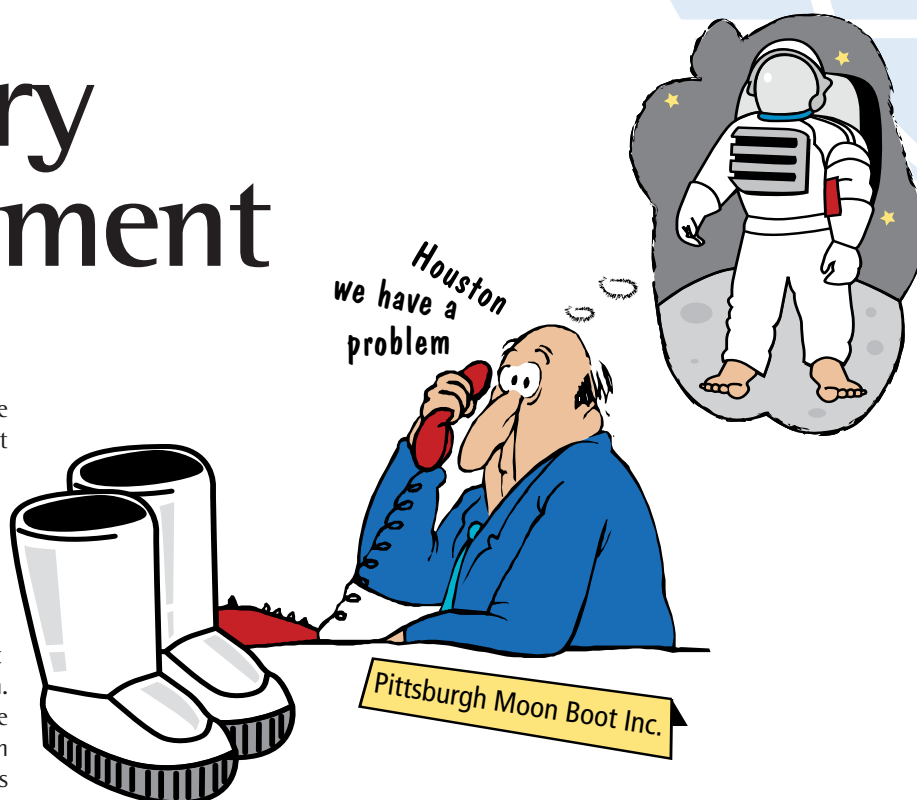
Inventory is an alteration of the late Latin word *inventarium*, literally 'a list of what is found', from the Latin *invenire* meaning to come upon. For today's accountants, inventories show on the balance sheet as assets, but for business people they are more often than not just an inefficient way of using capital. When it comes down to it they are rarely worth the book valuation. How often have we heard the words the "the quick sale is the smallest loss" when it comes to disposing of old stock as opposed to hanging on to it in the hope of a future full price sale?

Many readers of these columns will have started work in the days of piece work, when the production manager was measured by his ability to keep every machine and worker in the plant busy and producing. This meant that beside every machine was a large pallet of work waiting to be done and throughout the factory a build up of pallets where machine capacity did not quite balance. But just being busy and producing did not equate to adding value or being useful. Large amounts of what was produced under this system ended up rejected, creating a large inventory of reject part-processed and finished goods.

This led to the introduction of systems of quality control but no real transformation of this unsatisfactory situation took place until the Japanese concept of just-in-time and continuous improvement entered the equation. Just-in-time has been defined as an approach to inventory management and control in which inventories are acquired and inserted into production at the exact time when needed.

Shout very loud if in doubt

Along with this continuous improvement came a few basic rules. The



first of these is simply 'don't work on anything unless you are very sure you are adding value to it' and the second is 'shout very loud if you are in doubt'. Allied with this was the idea that it is better to buy more machines and balance capacity than to hold pockets of work in progress around the factory. Next, try to reduce the batch size down to a single unit. This has become the dream of mass customisation.

All of these approaches worked and helped to reduce the amount of inventory running around inside the plant and if the river is drained down to a small but effective flow, management can identify any rocks impeding progress. Since over 30% of factory throughput historically arrived at finished inspection with one or more defects, making such progress was quite valuable.

These days when customers and consumers expect zero defects, this all sounds old hat, but at the time it was quite revolutionary. Large work in progress stocks were reduced and the zero defect policy tied in with just-in-time delivery meant that stocks did not build up in either the finished or raw material warehouses. Tokyo suddenly found itself having to deal with additional traffic congestion as

innumerable small vans appeared to provide hourly deliveries. Purchasers had to establish close relationships with suppliers to ensure that 100% of the deliveries would be able to go straight into work without quality issues.

Rethinking inventory

Inventory took on a new context as global sourcing took place. An American brand making a shoe in China with Brazilian leather, an Italian sole unit and using a designer based in Germany has to think of inventory under a number of new headings. All of this creates direct links to the subjects of joint ventures and logistics, which have already featured in these pages.

Yet the basic balancing act still applies; too much inventory ties up capital, takes up space, needs insuring and may soon become obsolete. Having too little inventory means risking lost sales, higher operating costs and loss of efficient purchasing order levels. The cost of poor service as a result of being out of stock has many implications including the loss of part of the order, a future order, customer goodwill and the danger that the customer will start buying from alternative sources. The closer to retail the greater the pressure, as there is ➤

now a need to clear out old inventory in order to free space to display new styles.

So, it is not surprising that those involved day to day with inventory management have created their own jargon. Electronic data interchange (EDI), back flushing, negative inventory, consignment inventory, safety stock, economic order quantity (EOQ), cycle counting, push versus pull systems, replenishment strategies, stocking policies, flow forecasting and custom reporting are all key terms, not just for specialist staff, but also for management to understand.

Making inventories count

Manufacturing and inventory management can be a major source of competitive advantage. Careful management of production and distribution resources results in both lower operating costs and better customer service both of which should have a positive influence on market share and sales. Some of our best industry success stories are founded on operational capabilities that among other things keep inventories lean. These include retailing (Wal-Mart), automotive (Toyota) and computers (Dell).

Of course all this is nothing new. It was back in 1915 that F.W. Harris seriously started us on formal inventory management just two years after Henry Ford set up his paced assembly lines. As we have moved through the last four decades things looked like this*:

- 1970s – decade of quality (TQM, continuous improvement)
- 1980s – decade of lean manufacturing and zero inventory (JIT)
- 1990s – decade of co-ordination and supply chains
- 2000s – partnerships and synchronised planning

(*Gary Mitchell, UW Business School)

The Zara system

The exciting aspect of all this is the fact that small changes become, at least for a time, a new 'business model'. Zara and Benetton have certainly changed the clothing and fashion sector by their innovative approach. The consumer has now become used to the level and quality of service being offered and there is no way back. According to one analyst, Dr. Gal Raz, "The Zara system worked

because the cost of having stock over at the end of the season was more costly than the additional production cost of making a bigger range and the higher cost of transportation." It also allowed Zara to plan ahead more strategically.

This changes the game, as it is less about reducing overall inventory as about putting the right quantity in the right place and by so doing influencing the experience and offer being made to the consumer. It is made much easier by the use of new technology although, according to reports, Zara's approach owes more to clever thinking than superb technology, as its systems are not that sophisticated. Yet, anyone trying to emulate or improve on Zara will no doubt take a technologically-aided route and this is easier today as the tools become simpler, easier to use and cheaper.

What has to be put into the background or perhaps the foreground of our thinking, is the statement by Neil Postman that, "If you add technology to a system, you don't get the old system plus technology; you get a new system."

This view that IT would transform business was current in the 1990s and in the 2000s but did not really deliver. The various uncomplimentary names used to explain what SAP stands for became legend in the footwear industry as its promise of joined up IT ran over budget and over time. Today, things are beginning to link together as WiFi, Broadband, Bluetooth and new software and hardware are making implementation more predictable.

World Footwear has often written about the arrival of the RFID technology, which has a role in inventory management all the way through to customer service. In some sectors RFID has moved from a 'nice to do', to a 'must do', demanded by customers. New software tools have been developed for retail areas including assortment planning, order size optimisation, SKU (Stock Keeping Unit) forecasting, store clustering and markdown optimisation, many of which can be adapted for the production unit. The two-bin system is certainly no longer the only way to deal with inventories.

One positive aspect of successfully joined up IT utilisation is that the marketing and the production

departments should work together more. While marketing will make their pricing decisions based on the market place and revenue considerations, it is the cost of inventories which preys on the mind of operations. Final decisions have tended to be made based on assumptions, perceptions and few facts. The reality is that these decisions need to balance revenue potential with the costs that will be associated with achieving it.

25-35% of business assets

As a business decides where in the world it should make things, where it should buy things and where to put things together, it is becoming easier for it to decide where it should keep them and how much it should keep. It has been argued that businessmen have developed an almost pathological fear of increasing inventories largely because of long memories of inventory-caused failures back in the 1920s. This fear of inventories remains with many bean counters and senior executives. However, it is not fear of the inventories that should matter but getting the management processes correct.

Balancing the demands of finance, purchasing, production and marketing will never be easy. What is more, these days there are other potential inventories to be considered as retailers and e-tailers alike receive more returned goods and sometimes even have to consider issues of recycling stocks and used products. In addition to all this, product diversification has increased the number of components and SKUs needed for control and, for some shoe factories, these number, literally, in their thousands.

If business can achieve a proper understanding of the tools of inventory management then inventory can be a route to a new business approach or to uncovering margin which competitors may find it hard to match. Gone should be the days that seasonal wear in the stores appears to drop to half price just a few days after arriving.

When inventory can represent 25-35% of business assets and the cost of holding it makes up 21% of operating costs, this is a serious matter. To paraphrase a famous quote: "When is a pair of shoes not a pair of shoes?" "When they are in Pittsburgh at the time they are needed in Houston." 🌐