

# Sales and Operations Planning within the dairy industry – a game of Tetris

BY CAROLINE GEELMUYDEN & EMMA RASMUSSEN (June 2019)

**Balancing demand with supply. It is conceptually a simple task, but in reality, it can be both troublesome and frustrating. What about balancing demand with a supply that not only has a short expiration date, but whose amount is depending on how much milk a cow can produce? Welcome to the dairy industry.**

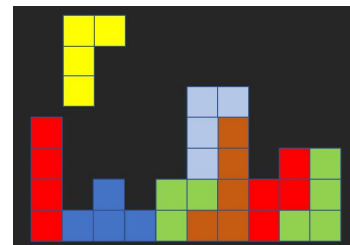
Have you ever played the game of Tetris? At a certain speed, different geometric shapes fall down in random sequences and the goal is to manipulate the shapes and make them fit when they land. When placed in a certain way, the lines are cleared out, and the game continues. If not turned and placed optimally, the pile grows higher until the game is over.

Visualize the matching of demand and supply within the dairy industry as a Tetris game. The cows produce random amounts of milk, and your company has a responsibility to handle it all. The speed of the game represents the short expiration date of the milk, and the different shapes represent the components of milk that is separated and divided into different products. Let the fitting of shapes on the ground symbolize the importance of choosing which products to produce in terms of customer demand, production capacity and waste minimization. When a line is cleared out, a profit is reached. When the pile builds up, we are moving towards obsolete products. It is a stressful environment, and much is at stake. On top of this, the wide range of products, stretching from fresh milk with an extremely short lead time and shelf life, to aged cheese which is produced over a year in advance, makes the planning and matching even more difficult. There is simply a need for a systematic way of handling these uncertainties.

In an industry with an endless supply of non-perishable raw material, the most difficult task when matching demand with supply is usually to ensure that there is production capacity in order to fulfill the demand. Several companies struggle to find a systematic way of doing this, and many of them turn to what has been called

“the key to integrated business management”, namely *Sales and Operations Planning (S&OP)*. S&OP is a process that facilitates the decision-making of successfully aligning supply with demand in an organization and involves a series of structured meetings as well as a cross-functional mindset. There are many successful examples showing the benefits of using S&OP in a company.

Could S&OP perhaps be useful in the dairy industry? Definitely! Why is it not incorporated in all food and dairy companies already? Studies show that companies within these industries do work with S&OP, but on a too operational level. The need of being flexible to quick changes and the short shelf lives have led to a common misconception that S&OP is on a too aggregated level for a company within food or dairy to act in. However, this is not true, and S&OP should, to a very high degree, be implemented in all these companies. The benefits can be great and by systematizing the planning process, the responsibility to use all the provided milk can be handled with a larger certainty.



The game of Tetris is difficult and stressful. But: imagine a game facilitator that could enable you to be more prepared, not for what is coming in terms of milk amounts, but for what the consequences will be of the choices you make. When you have decided to position a shape in a certain way, it will be grounded and embedded in the whole company as well as in its overall strategy. The game will still be difficult, but at least the stress could be reduced by a fair amount.

This popular scientific article is derived from the master thesis: *Improving the Sales and Operations Planning Process at a Swedish dairy company*, written by Caroline Geelmuyden and Emma Rasmusson (2019).