



SUPPLY CHAIN PLANNING

HOW TO WIN

Defining End-to-End (E2E) Supply Chain Planning

Pre COVID, I attended a conference, for which all of the delegates had to answer a questionnaire on their areas of interest beforehand. Unusual? Not really. The part that I found most interesting, however, was that 50% or so had ticked the box titled “E2E Supply Chain Planning”.

I was intrigued because no one had explained what E2E Supply Chain Planning was, or what it covered.

How did anyone know whether to be interested? I suppose the words are topical jargon, but what did the delegates think it meant? My discussions with many people over the three days illustrated to me that there is a whole range of different ideas.

I have since spent a great deal of time defining the term in such a way that any industry sector and any size company can easily understand it. **The place to start was to define a supply chain.** Largely, everyone is in agreement with the theory. Take the food chain as an illustration. We, the consumer, order a meal in a restaurant. In truth, this is demand for a variety of items, but let’s just take one. Our order puts demand on the kitchen, the chef places the order with, say, the butcher. He orders his Raw Material from the abattoir, who is supplied by the farmer, who in turn is being supplied with animal feed. This is an End-to-End Supply Chain. (Let’s not go down the Value Chain route yet).

So, if we now ask who plans this E2E supply chain, it is rare to find anyone who controls the whole chain (the extended chain). **Each link in the chain controls its own area and influences adjacent links, up- and down-stream.** One day, probably sooner than we think, there will be a process to plan the entire chain, but for now we should look at Supply Chain Planning as being the planning of as much of the chain as we can directly influence, the base functions being Integrated Business Planning, Sales & Operations Planning, Demand Management and Forecasting, Inventory Planning and Sourcing, Production Planning, Production Scheduling and Materials Planning.



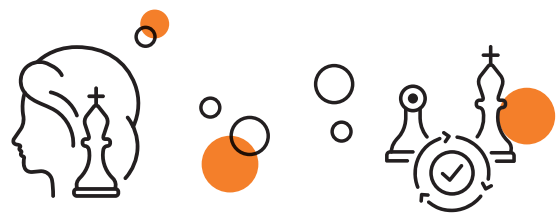
The Chess Analogy

Perhaps we can use an analogy to explain Supply Chain Planning further. Take, for example, a game of chess and compare it to the task of supply chain planning.

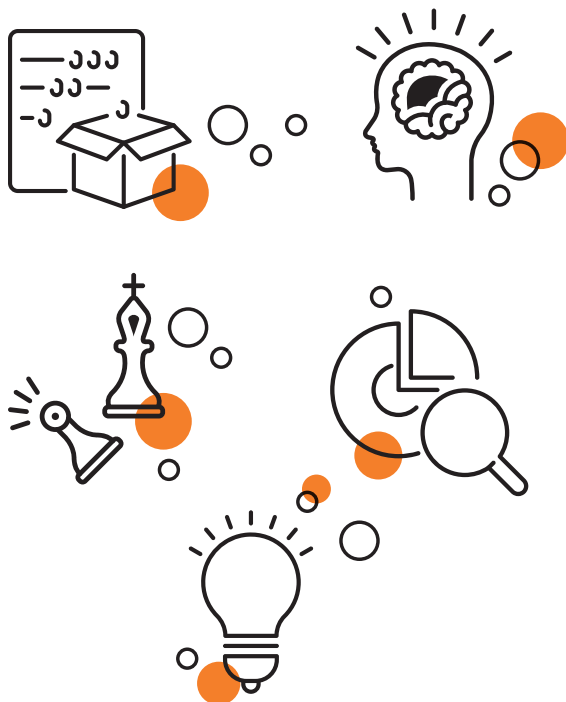
In chess, we all know how the pieces move, that there are two colors, black and white; they start opposite each other. At any point in the game, we know where each piece can move and where they all are. This is all information on HOW to play the game.

The question is: How do you WIN at chess?

There are two ways to play chess. One way to play is like most amateur chess players. There is a clear objective but we do not have a clear plan on how we are going to achieve it, so we take small steps. We respond to the other player's moves; we react and maybe we are thinking one or two moves ahead. Grandmasters and good chess players, on the other hand, also know the objective, but they have a bagful of strategies and tactics, which they will use to get there. They even have special names for them. They are forecasting their opponent's moves several moves ahead and monitoring to spot patterns in play.



Applying it to real life



So how is this analogy useful? In our organizations, we too know how to play the game. We know where the pieces are and how they move. For example, we know the orders placed on us and the delivery destination. We know where our warehouses are, how many pallet spaces we have, how much stock is in them. We know about our machines, people, production rates, bills of material and stock. We know our suppliers lead times and prices. We know a great deal of information in addition. In fact, one of today's areas of focus in Supply Chain Visibility, designed to tell us even more about where the pieces are. This is information on How to Play the game. But whenever we visit companies, we hear words like fire-fighting, shortages, stock-outs, expeditors, unplanned overtime, and many other similar issues. Knowing how all the parts move and where they are does not seem to help. It sounds like the way amateurs play chess, not the way the Grandmasters play.

So, knowing how to PLAY the game is important but it is not enough. We need to understand how to WIN the game. E2E Supply Chain Planning is a mechanism for deciding how to win the game.

How to play the game

Every company has strategies on how it will win the game. Typically, these will cover which products it will make and sell, which markets it will sell to, and how it will distribute its products to those markets. Whatever a company chooses to do, the strategies will determine which techniques and tools are relevant. Let us briefly mention some of those.

1

STRATEGIES

Almost every company with whom we work is about to start, or is in the middle of, some kind of project to improve what they are doing.

Sales Forecasting and Demand Management is a common one, often explained by the sentence, "If we could just improve our forecast of what the customer wants...." There is also a great movement, even more so since Covid, in projects such as Supplier Relationship Management (SRM), Co-Managed and Vendor Managed Inventories, and projects on how to include suppliers in our supply chain in a better way than just pushing for low prices.

2

TECHNOLOGY

One of the most common tactics being chosen by companies revolves around systems and digitalization, and a trawl around web sites will reveal the wealth of applications available.

The systems available today fall into two categories. There are those, which are referred to as decision support and those known as enterprise-wide transaction systems. The demarcation lines, however, can get a bit blurred - it is possible to find forecasting and scheduling modules (with AI and Machine Learning) in some of the transaction-based systems. But maybe this is where our chess analogy comes in again, to help us understand the differences.



In our analogy, we concluded that what we need to do is to learn how to WIN the game. Knowing how all the pieces move any better will not help us in this. MRP*/ERP systems are referred to as transaction systems. They place major emphasis on the base of data that they hold. They cater for the order intake, the movement of inventories, shop floor data, where the products are, etc. This is information on how to play the game, not how to win the game.

How to play better

Many companies today are still investing in their MRP/ERP systems. For the most part they are upgrading them or replacing them, standardizing on just one system and one version - and there are some sound reasons for doing so. Consolidated financial management is clearly a major one. Achieving commonality of systems across a multi-site group of companies is another good reason. **But today's technology tells us we don't necessarily need integrated systems any longer, we need (and can have) integrated data from dis-integrated systems.** Digitalization will for sure will gives us more data than we know what to do with.

There is a growing assumption, however, amongst those companies who are investing in these new systems that they are automatically going to get a mechanism for winning the game. They are right to some degree IF they look beyond just knowing where the pieces are and how they work. Let me give an example.

A company, which we visited recently, had searched the market for MRP/ERP suppliers, produced a shortlist and then visited in excess of 10 different reference sites. What they saw were good references, but what they also came away with was a clear message that whilst each reference had implemented a new system, they were still working in the same way as they had before. **In other words, they knew how to play the game better, with newer technology, but they had made no progress on how to WIN the game.**

Getting digital data from as many resources as you can is about How to Play the game. Applying Advanced Analytics to this data is **How to Win the game.**

**MRP = Material Requirements Planning*

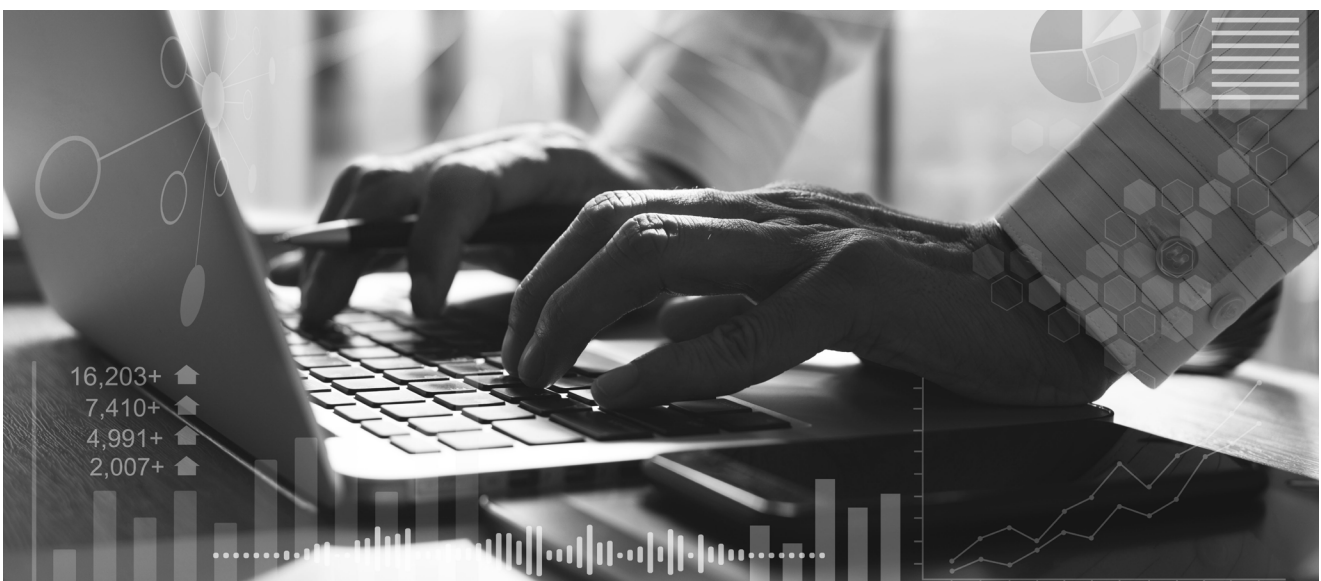
Systems are important, but they are only one part of the tool set that a company will use. Winning the game does not mean just putting a system, or systems, in place. It means changing the way the process of E2E Supply Chain Planning is carried out and addressing all of the issues that this will throw up.



Changing the way we work

What we find most interesting is that companies today carry out all of the Supply Chain Planning functions in a departmental fashion. Forecasters forecast, Planners plan (actually more often than not they schedule, not plan), and so on. **Very few companies have yet established the process for carrying out 'end-to-end' Supply Chain Planning.** How often do we hear of companies who forecast monthly, release the forecast once a month to Planning who then need several days to put the plan together before they in turn give it to the factory. Who schedules the factory? Is it a planner or someone on the shop floor? What are the influences that lead them to their final decisions on what to do next? Is it Production, who want nice long runs with no changeovers, or is it Customer Service, who want it to be delivered when the customer wants, with scant regard for efficiency in the factory? We have been planning in this way for a few decades now. **There are better ways but we need to work and think differently.**

To change the way we work will not be easy. Companies will need to understand what measurement systems influence the way their people work. In Supply Chain Planning we are talking about the optimisation of the global supply chain, and therefore, potentially the sub-optimization of some of the individual elements of the supply chain. Using computer-based decision support systems and techniques like Advanced Analytics, AI and Machine Learning will give us the ability to evaluate quickly decisions that are extremely difficult to evaluate in a manual way, but we will need a particular expertise to help us do this – data engineers and data scientists. They do not in themselves take time out of the overall 'end-to-end' process of Supply Chain Planning, but they help us to make better decisions. **Therefore, what we need to do is to design very carefully the way we want our planning process to work, in an integrated way.** We shall need to understand how all of the individuals can work together in one single process and what currently exists to prevent that from happening



SIMPLIFYING THE PROCESSES

The Supply Chain Planning Decision Support systems that we choose will need to be integrated into the host business system in ways that mean any movement of data between systems is completely seamless.

In summary, therefore, we can see that our business systems are the guardians of real time changes, for example, in inventories, orders, or production activities. They tell us how to PLAY the game and where all the pieces are. Decision support systems allow us to take that knowledge

and try out different scenarios, to help us arrive at the way we are going to WIN the game. However, systems are only part of the solution. The construction of a single Supply Chain Planning process is what will give our organizations the speed of response and a real Competitive Advantage. And we need highly capable people, who have the ability and understanding to think and plan differently. People, Human Dynamics and Digitalization. It must be a continuous evolution with all three aspects..

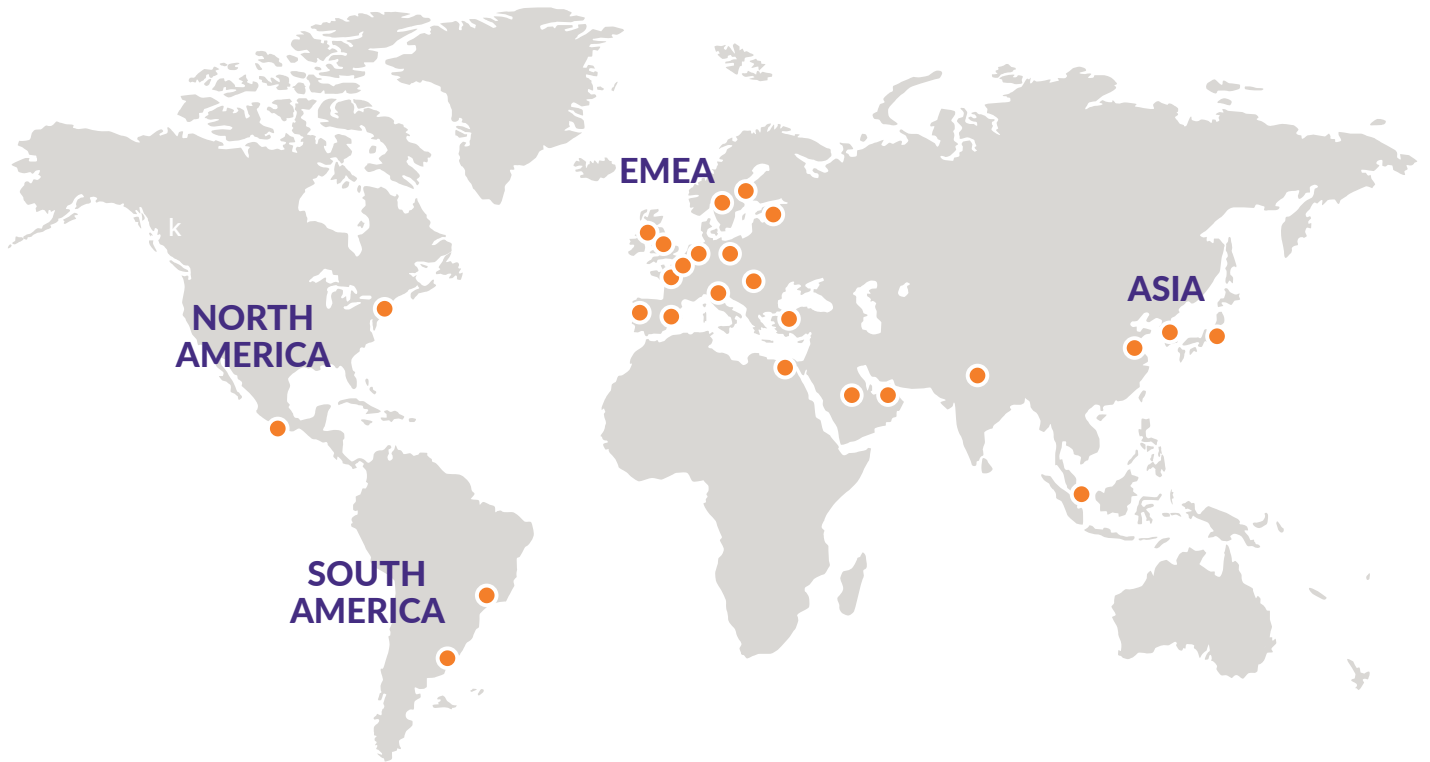
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Hugh Williams joined EFESO Consulting in 2017 as Vice President Supply Chain. Hugh has been working in end-to-end supply chain planning and optimization for more than 35 years, focusing on SC specialized training and workshops through his own company, Hughenden.

Hugh worked for six years with the guru of manufacturing and author of The Goal, Dr Eli Goldratt, introducing major corporations to new ways of thinking.

The following years of his career have all been spent changing the way many global companies operate through performance behaviors and integrated work systems.



LET'S START A CONVERSATION

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