



# Case Study

## Overcoming the challenges and intricate requirements of pharmaceutical supply chains



### The company

**Allergan** is a multi-national pharmaceutical company present in over 150 countries worldwide that develops and manufactures brand name drugs and medical devices in a number of areas including nervous systems, medical aesthetics and gastroenterology. Allergan had not invested significantly in supply chain and factory planning systems over the years resulting in a highly manual excel driven planning process. Large amounts of time were spent moving data from system to spreadsheet and back again. Often with little time left for analysis that may drive different more beneficial decisions to be made.

### Goals of the project were:

- Improve factory commitments
- Ability to rerun plan on a daily basis
- Accounting for demand priorities and
- Provide automation

So that planners could spend their time **analyzing** than just creating a plan. In order to accomplish these objectives an accurate model of manufacturing operations was created supporting 4 essential requirements.

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## 4 Essential Requirements

- Provide synchronization between the API blending tanks and fill lines - Since pharmaceuticals require regulated batch sizes fill demands must be grouped to ensure the tank is consumed minimizing waste. In addition, once connected to a fill line the tank must remain connected until it is emptied. This required very detailed modeling at both the resource and the lot level along with attribute based on sophisticated constraints to accurately represents the manufacturing operations.
- QA and on hold inventory - In order to provide visibility to inventory but constrain the use until QA tests are passed, attributes were assigned to the inventory. Reports were available to see both cleared and on hold inventory, while through the use of constraints on hold was not available to satisfy customer demands.
- Country regulations or clinical trials – In order to minimize the number of products for planning attributes on the demand were used to provide specific requirements instead of separate products. Attributes based planning was then employed to ensure the individual manufacturing lots or processes adhering to the demand requirements were used to satisfy the demand.
- Expiration dates / shelf life – In order to create an executable plan, the model must consider the expiration dates of raw materials or intermediate API when satisfying the order. A **date attribute** is used on inventory or assigned by the planning algorithm to indicate when the lot was manufactured. The demand request date including the required shelf life is then compared to the manufacturing date at any point within the supply chain to ensure customer required shelf life.

## The Benefits

The Adexa planning system has been in use for over a year now. As part of the implementation, the system was integrated with SAP to receive shop floor data as well as demand requirement, BOM and routing information.

The system has helped Allergan to generate optimized plans for the entire API and fill lines operations. The move from spreadsheet planning to S&OE planning, described above, has enabled the company to create optimal plans in for equipment utilization at the same time significantly improve on-time delivery performance. The daily plans have been accomplished with much less planning cycle time free from arduous manual planning.

