# Mathematical Optimization for Smart Manufacturing

### 20+ years of experience in building high-impact optimization solutions along different dimensions of manufacturing operations

### Global Manufacturing Partners who trust our solutions

Our global customer base is made up of market leaders in different industry sectors - semiconductors, electronics, packaging goods, apparel, automotive. We have a track record of successful deployments across the globe.









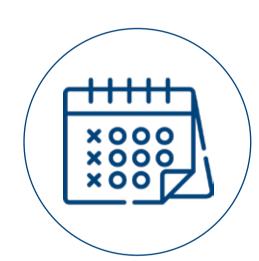






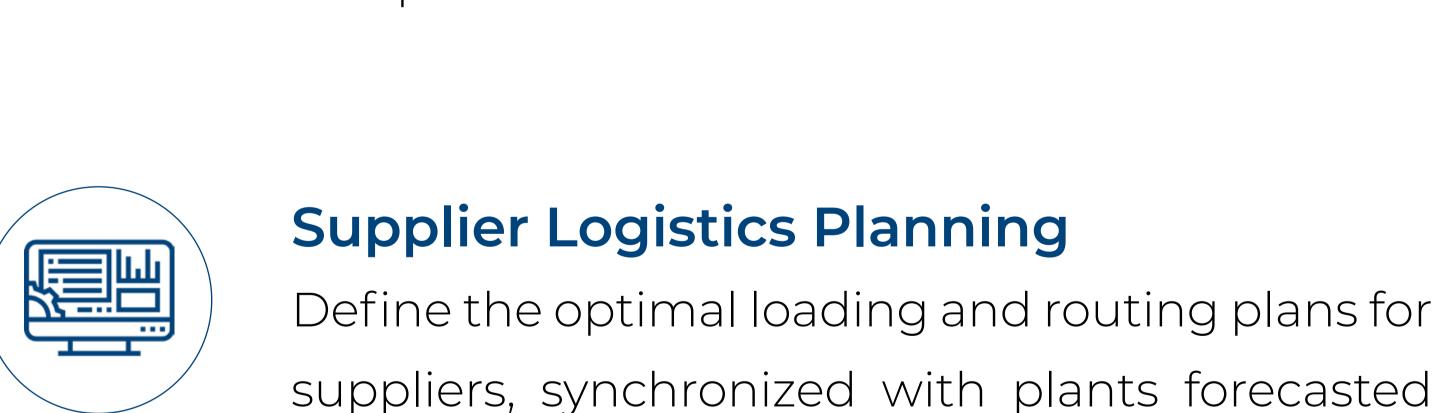




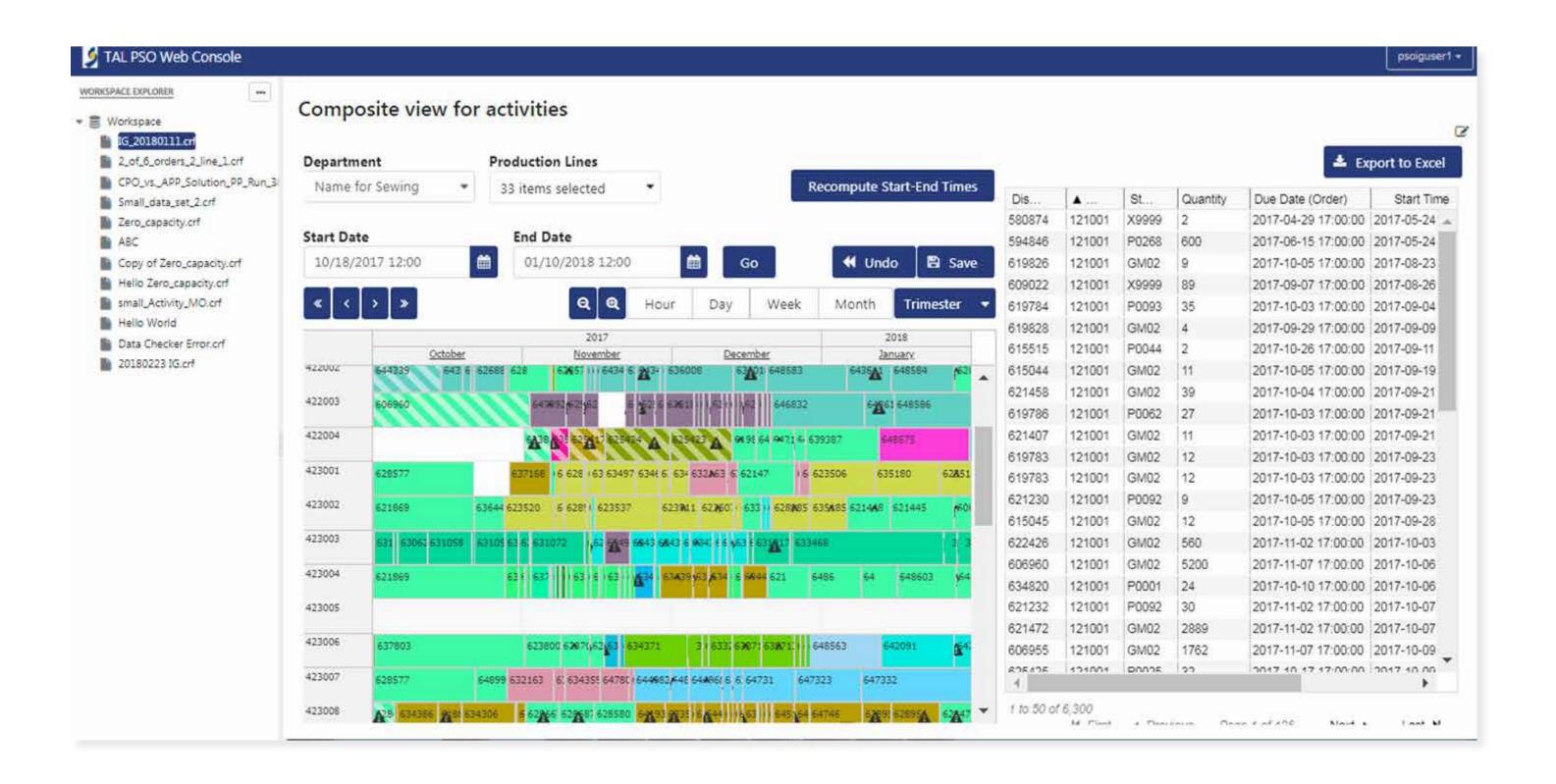


### **Supply Chain & Production Planning**

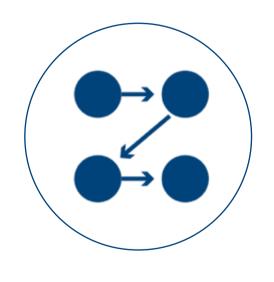
Define what to produce, where and when, to meet demand and maximize productivity with the right tradeoff between inventory, logistics and production costs.







demand, to reduce overall logistics costs.



### **Production and Shipping Scheduling**

Optimally sequence production on each work center and machine, to reduce WIP and lead times and ensure on-time delivery.



### Variability Management

Build robust plans and adapt them to demand/ supply variability and unexpected production line issues.



## Custom solutions for global industry leaders across different sectors

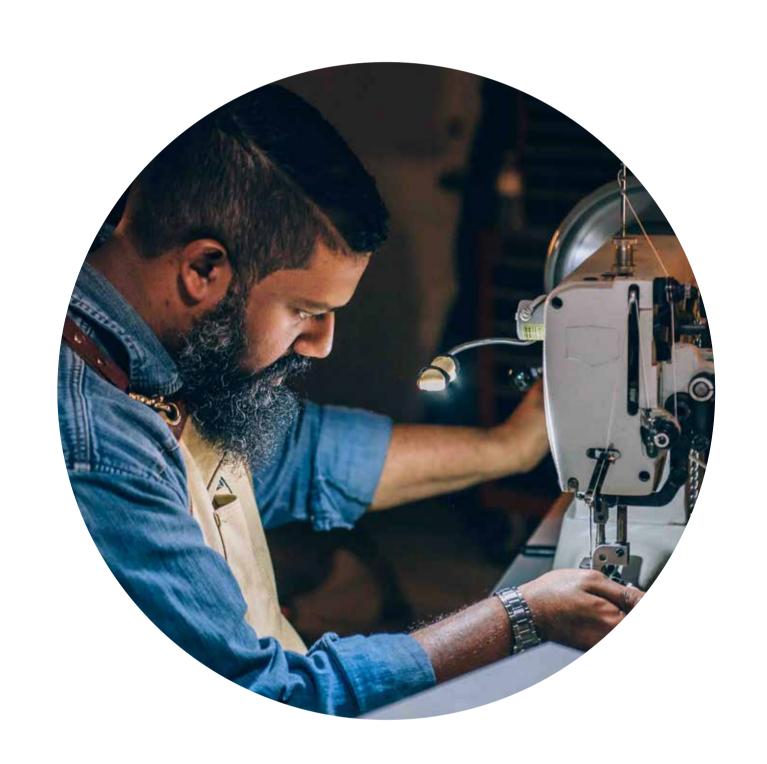
### 20%-50% improvements vs. manual/heuristic plans



#### **Electronics and Semiconductors**

Production Scheduling Optimization for IBM semiconductors and KCE PCBs

- · Handle a mix of simple and complex processes
- · Optimize WIP and Lead Times
- · Optimize plant layout and placement of compatible part numbers



### **Apparel**

Integrated Production Scheduling and Shipment for Carhartt and TAL Group

- Coordinate production and shipment scheduling
- Optimize production learning curve and on-time delivery considering alternative demand shipping modes
- · Improve service level and increase throughput



### **Product Packaging**

Supply Chain Planning and Production Scheduling for Ajover/Darnel

- · Manage a mix of make-to-order and make-to-stock products when warehouse capacity is tight
- · Provide a holistic view across demand, production and warehouse space
- · Allow planners to quickly and easily address customers requests at minimum cost



#### **Auto Parts**

Integrated injection and painting scheduling for Plastic Omnium

- · Coordinate production across injection, paint and assembly lines
- · Maximize service level, meet just-in-time demand requirement
- · Increase utilization by minimizing empty masts and reduce cost of color change