



Çolakoğlu Metalurji



SMART STEEL
TECHNOLOGIES



Tackling Manufacturing Costs and Liquidity Through Dynamic Planning and Scheduling

June 4th, 2026

Build the best scheduling system for steel

- Founded in 2019 after 3 years of preparation
- 55 FTEs, mostly engineering, optimization
- Very low fluctuation, thorough onboarding
- HQ: Berlin, US office: Cincinnati
- Customers in EU, Turkey, America

2016 – 2026, SST progressed from surface inspection to quality optimization to caster and melt shop Level 2 to production scheduling.



1 REDUCE MANUFACTURING COSTS AND RISKS



Reduce energy costs

Natural gas, electricity



Reduce personnel costs

Automate scheduling, re-allocation, testing and quality control



Reduce materials costs

Reduce costs of manufacturing dummy coils



Reduce maintenance costs

Smarter re-scheduling in case of equipment downtimes



Increase transparency

Reduce tribal knowledge and expert dependencies

2 INCREASE LIQUIDITY



Reduce unallocated inventory

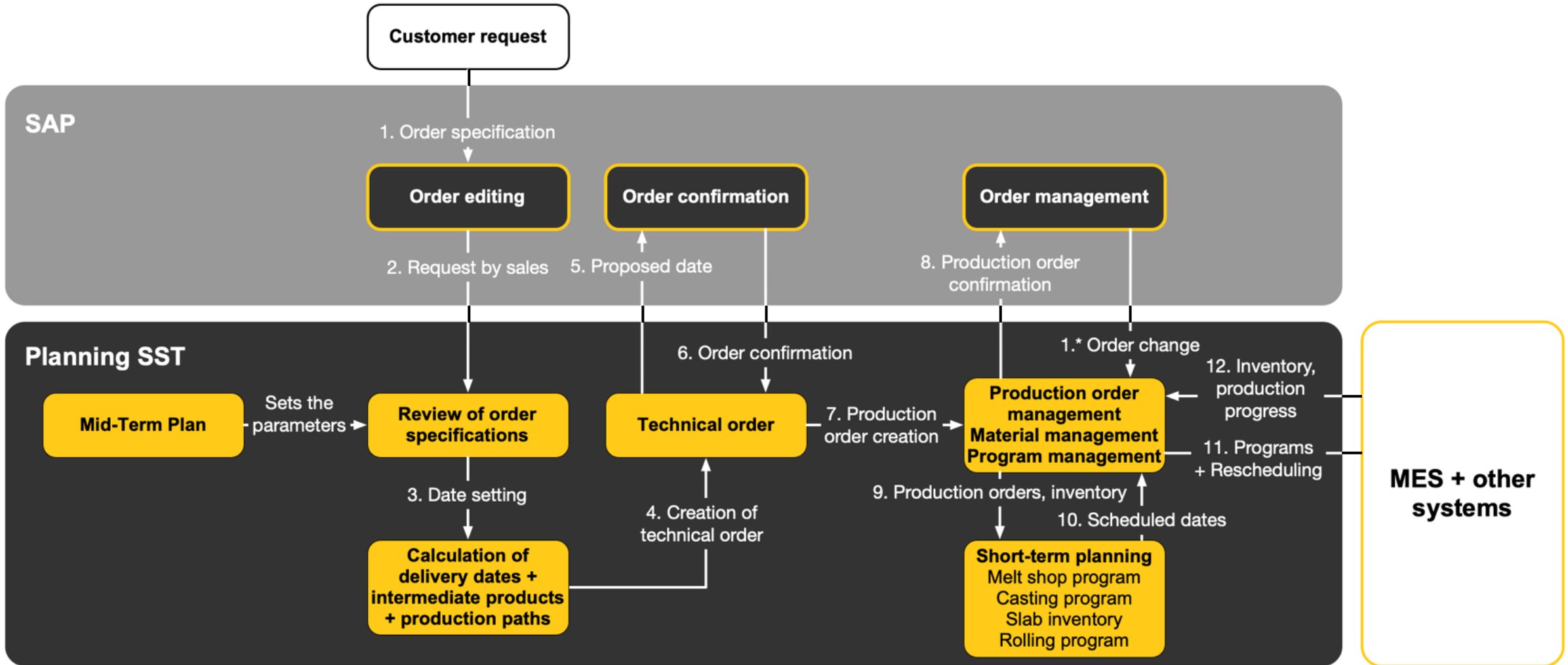
Automate reallocation

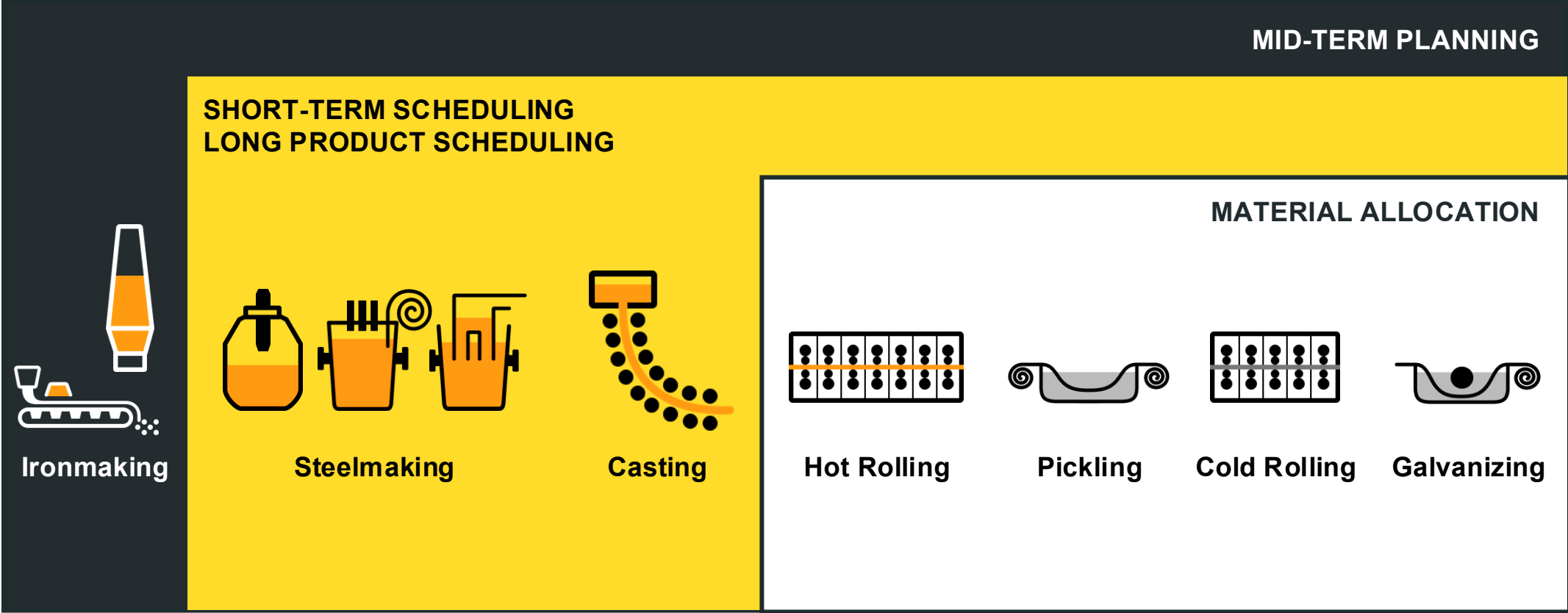


Reduce time between processing steps

Automate scheduling, revise cyclic production



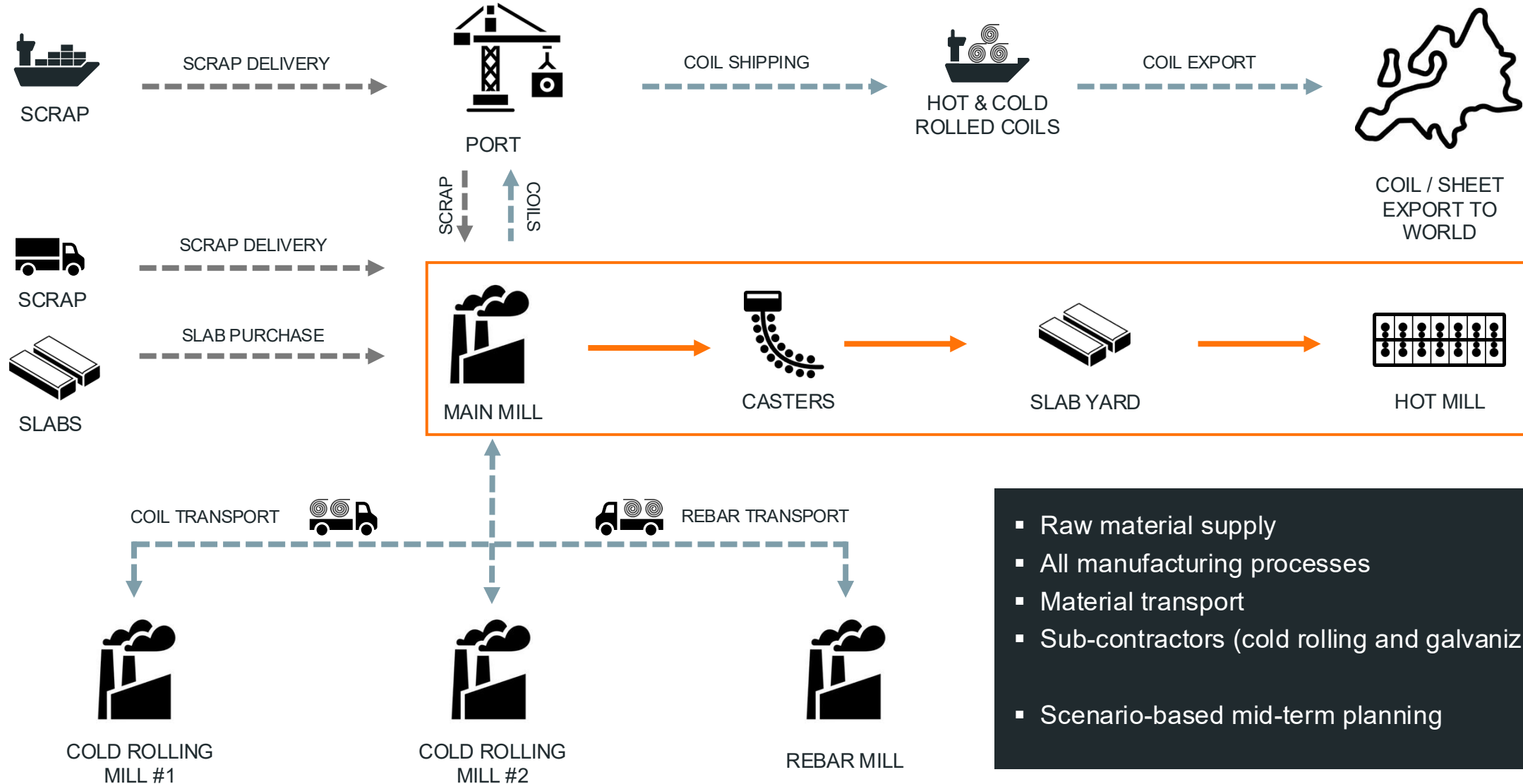




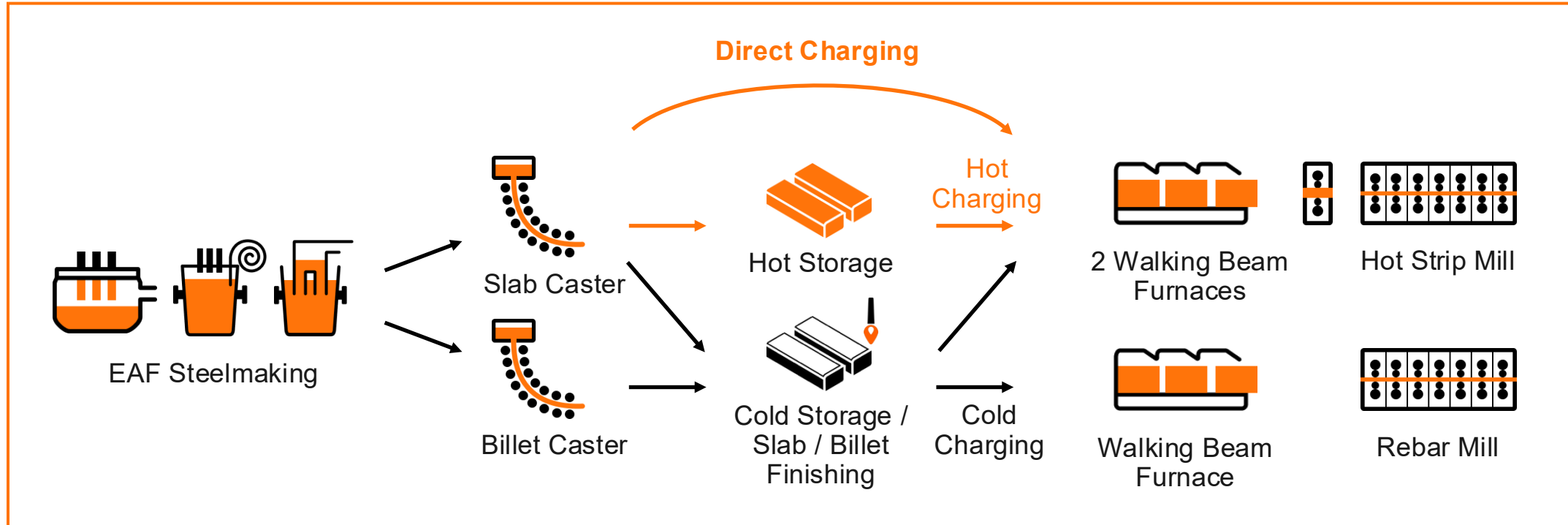
SST provides production planning and scheduling software for all processes of steel manufacturing.

SST also provides data-driven and AI-based modeling and process optimization software.

Mid-Term Planning at Çolakoğlu Metalurji



- Raw material supply
- All manufacturing processes
- Material transport
- Sub-contractors (cold rolling and galvanizing)
- Scenario-based mid-term planning



Throughput maximization for hot strip production, **balancing** with billet casting, **scrap** availability, **slab purchase**, **agile sales** methods, orderbook KPIs

MAIN CHALLENGES

- Midterm planning needs to forecast delivery dates for orders.
- Flying tundishes introduce inter-sequence constraints on casting widths of strands.
- Throughput considerations and lead times alone are not sufficient to guarantee feasible delivery dates.



SCHEDULING CHALLENGE

Operational Constraints

Inter-sequence constraints complicate flying tundish planning. It requires strand-width flexibility from individual tundishes.

Lack of Flexibility

Necessity of planning “*ugly tundishes*”, “*good tundishes*” and other scheduling constraints reduce strand-width flexibility.

Domino-effect / Butterfly-effect from small changes

Urgent orders disrupt pre-planned sequences. Low flexibility for efficient integration.

SOLUTION

Optimizations balance between local (“*good tundish*”) and global (“*flying tundish*”) targets.

Optimization results enable operational planning of weeks to months in advance, considering delivery dates, demand for raw materials, bottleneck identification.

