Transfair Engineering: Refrigerator Manufacturing Flow Diagram:

**Lean Manufacturing.** Continuous improvement and elimination of waste across the organization:

- **Continuous Flow** from raw material till finished product without "waiting" for large batches to be run; setup times are minimizing rather than number of setups. *Value Stream* coordinate all steps of supply and manufacturing processes at the appropriate points in time from acceptance of raw materials or components to the delivery of the completed product. Activities in the value stream are identified as *Value-Added Activities* (VA) or non-value-added (NVA) and the last minimized to the unavoidable. **Pull Production** and purchasing activities are based on *Kanban* signals from the follow-on process on time; work is performed only when required. The **Direct Production** process enables companies to simply pass interim products or components to the next work center for the following production order (not to stock). **Integrated Product and Process Engineering (iPPE)** integrate engineering design activities with those of manufacturing engineering to avoid inconsistencies, extra cost and quality problems and to accelerate product development and time-to-market. In a **Discrete Manufacturing** the solver schedules the process order sequence to avoid costs such as cleanout or changeover; achieved with production campaigns, block planning or detailed scheduling with a focus on critical resources. Production management coordinates the data exchange between the execution program system and seamless connected work control and quality management systems. **Minimize the Waste of Work and Capital along the Supply Chain.**

**Steel Storage**

- Side panels
- Steel door
- Profiles (front, middle, sides)
- Small parts
- Eventual Condenser lines
- Eventual Evaporator lines

**Chem. Storage**

- Pre-treatment
- Drying oven
- Painting booth(s)
- Baking oven

**Door pre-assembly**

- Top evaporator on foodliner assembly
- Cabinet pre-assembly and sealing

**Door foaming**

- Cabinet Foaming jigs
- Foam Dispensers
- Premix and foam material tank

**Compressor compartment + condenser assembly**

- Eventual Evaporator assembly
- Inside Refrigerator assembly

**Storage for assembly components**

**Injection molding**

**Storage for finished refrigerators**

**Lean Manufacturing.** Continuous improvement and elimination of waste across the organization:

- **Continuous Flow** from raw material till finished product without "waiting" for large batches to be run; setup times are minimizing rather than number of setups. *Value Stream* coordinate all steps of supply and manufacturing processes at the appropriate points in time from acceptance of raw materials or components to the delivery of the completed product. Activities in the value stream are identified as *Value-Added Activities* (VA) or non-value-added (NVA) and the last minimized to the unavoidable. **Pull Production** and purchasing activities are based on *Kanban* signals from the follow-on process on time; work is performed only when required. The **Direct Production** process enables companies to simply pass interim products or components to the next work center for the following production order (not to stock). **Integrated Product and Process Engineering (iPPE)** integrate engineering design activities with those of manufacturing engineering to avoid inconsistencies, extra cost and quality problems and to accelerate product development and time-to-market. In a **Discrete Manufacturing** the solver schedules the process order sequence to avoid costs such as cleanout or changeover; achieved with production campaigns, block planning or detailed scheduling with a focus on critical resources. Production management coordinates the data exchange between the execution program system and seamless connected work control and quality management systems. **Minimize the Waste of Work and Capital along the Supply Chain.**