

## JIT IN ELECTRONICS INDUSTRY

The electronics industry uses JIT to **keep up with fast-paced technological changes**, **short product life cycles**, and **high competition**. It helps manufacturers reduce waste, cut costs, and deliver new products faster.

### 1. Key Applications of JIT in Electronics

#### Component Procurement

- Electronic components like resistors, ICs, sensors, and PCBs are sourced **just in time** to avoid stockpiling obsolete parts.

#### Assembly Line Management

- JIT ensures that parts arrive **right when needed** on the production line to maintain smooth operations.

#### Product Customization

- Especially in consumer electronics (phones, laptops), JIT supports **build-to-order** or **configure-to-order** models.

#### Inventory Control

- Minimal storage of finished goods and components—products are manufactured based on **actual customer demand**, not forecasts.

### 2. Benefits of JIT in Electronics

| Benefit                    | Description                                                         |
|----------------------------|---------------------------------------------------------------------|
| Reduced Inventory Cost     | No need to store large volumes of parts that might become obsolete. |
| Faster Time-to-Market      | Quick response to customer demand and design changes.               |
| Efficient Space Use        | More factory floor space for production, less for storage.          |
| Lower Risk of Obsolescence | Electronics become outdated fast—JIT minimizes leftover stock.      |
| Better Quality Control     | Continuous improvement and tight processes reduce defects.          |

### 3. Examples of JIT in Electronics

#### Dell Technologies

- Famous for **build-to-order PCs**.

- No warehouse full of products; components arrive JIT from suppliers.
- Customers configure PCs online → production starts only after order confirmation.

### **Apple Inc.**

- Uses JIT in **iPhone and Mac production**.
- Suppliers like Foxconn get parts delivered just in time to meet tight production schedules.
- Strong global supplier coordination through tech platforms and real-time data.

## **4. Challenges of JIT in Electronics**

| <b>Challenge</b>         | <b>Example</b>                                                                      |
|--------------------------|-------------------------------------------------------------------------------------|
| Supply Chain Disruptions | Natural disasters, pandemics, or political tensions can delay component deliveries. |
| Component Shortages      | High demand for chips (like in 2020–2021) can stall production.                     |
| Supplier Dependence      | Many components come from specific regions (e.g., East Asia), increasing risk.      |
| Complexity               | Thousands of small parts needed per product = very tight coordination.              |

## **5. Technologies Supporting JIT in Electronics**

- **ERP and MRP systems** (e.g., SAP, Oracle)
- **Barcoding & RFID** for real-time tracking
- **AI for demand forecasting**
- **IoT and Smart Manufacturing**
- **Supplier Portals** for JIT communication