

Vendor Managed Inventory Definition, Basic Concept and Scope

Vendor Managed Inventory (VMI) Definition

- VMI is a concept/process for consumer oriented-control, which transfers those/that suppliers the responsibility to keep the inventory levels as agreed. This is based on a partnership co-operation and enterprise-spreading information transparency in real time. The goal is the reduction of the total inventory, the special shipments as well as the expenditure concerning handling and administration.

Vendor Managed Inventory (VMI) Prerequisites

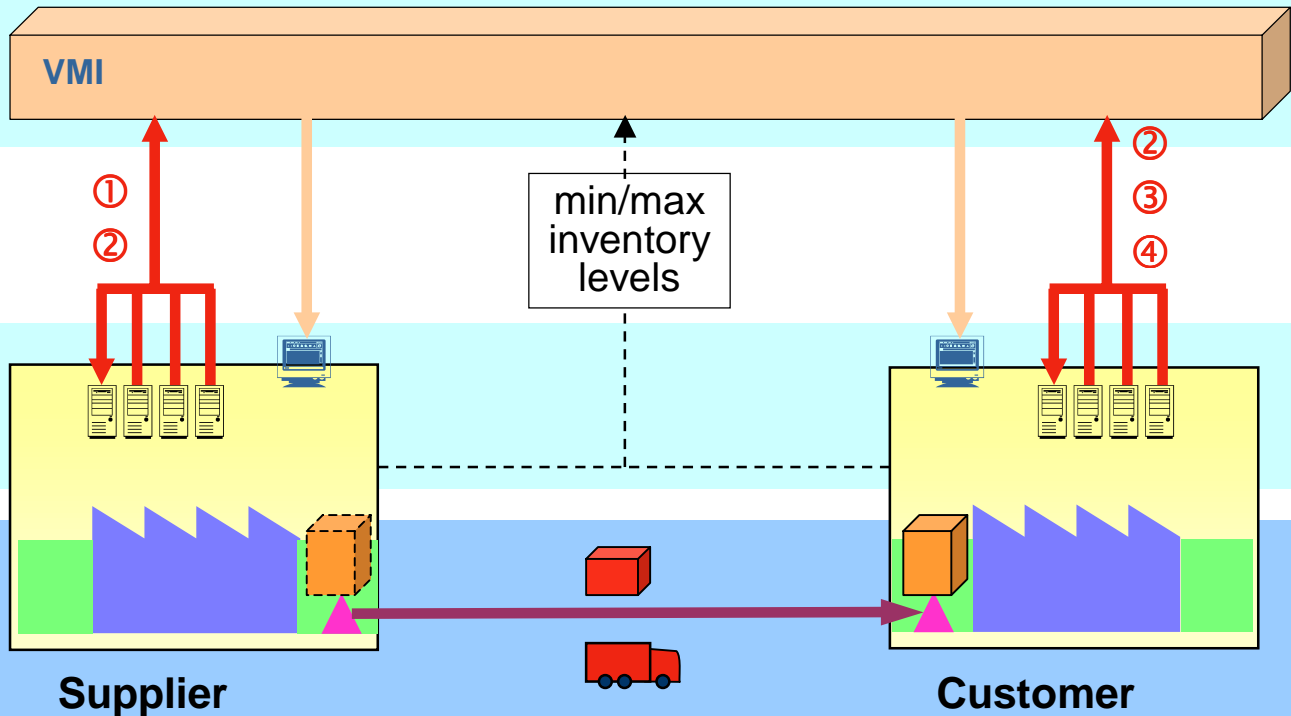
- VMI is based on:
 - ➔ customer's actual **gross demands** (BOM explosion of production plan without further parameters),
 - ➔ actual **customer inventory**,
 - ➔ actual **in-transit inventory**,
 - ➔ actual **supplier finished product inventory** and
 - ➔ agreed minimum and maximum stock levels (absolute quantities or days of demand)

Basic Information Flow in VMI without 3PL

VMI level

back-end systems level

material flow level



① ASN Information

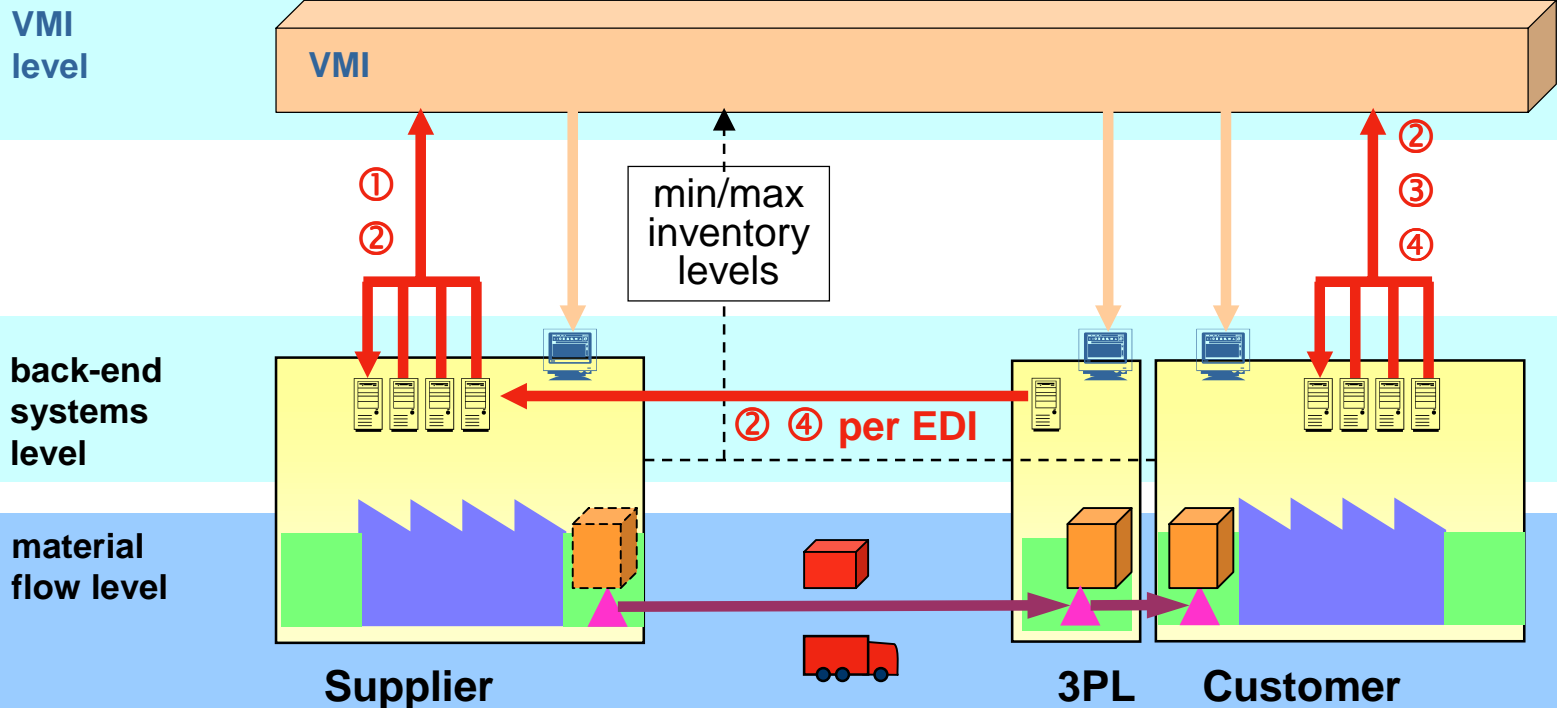
② Inventory Information

③ Demand Information

④ Receiving Information

Basic Information Flow in VMI

Model 1a: 3PL as Subcontractor of Supplier (Consignment)



① ASN Information

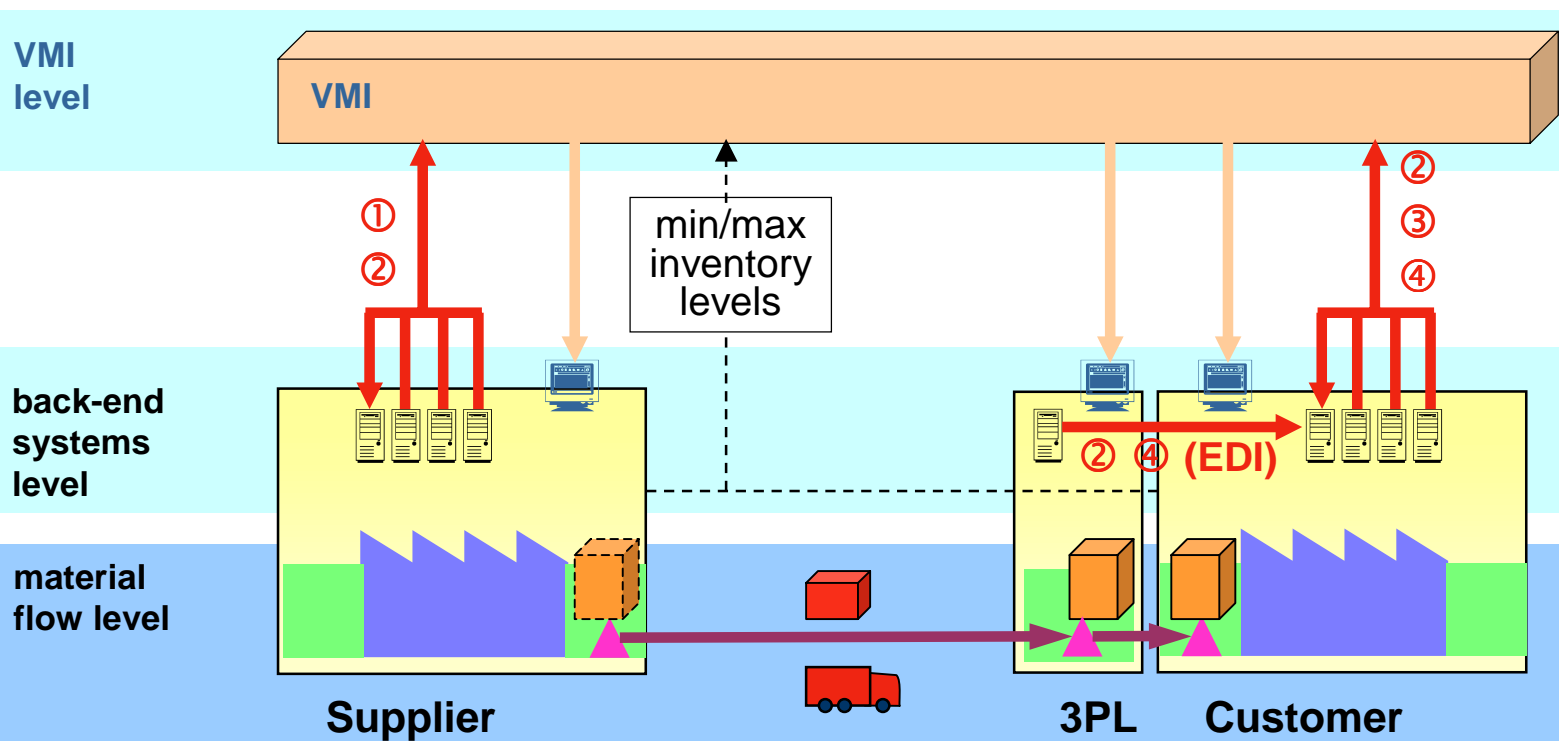
③ Demand Information

② Inventory Information

④ Receiving Information

Basic Information Flow in VMI

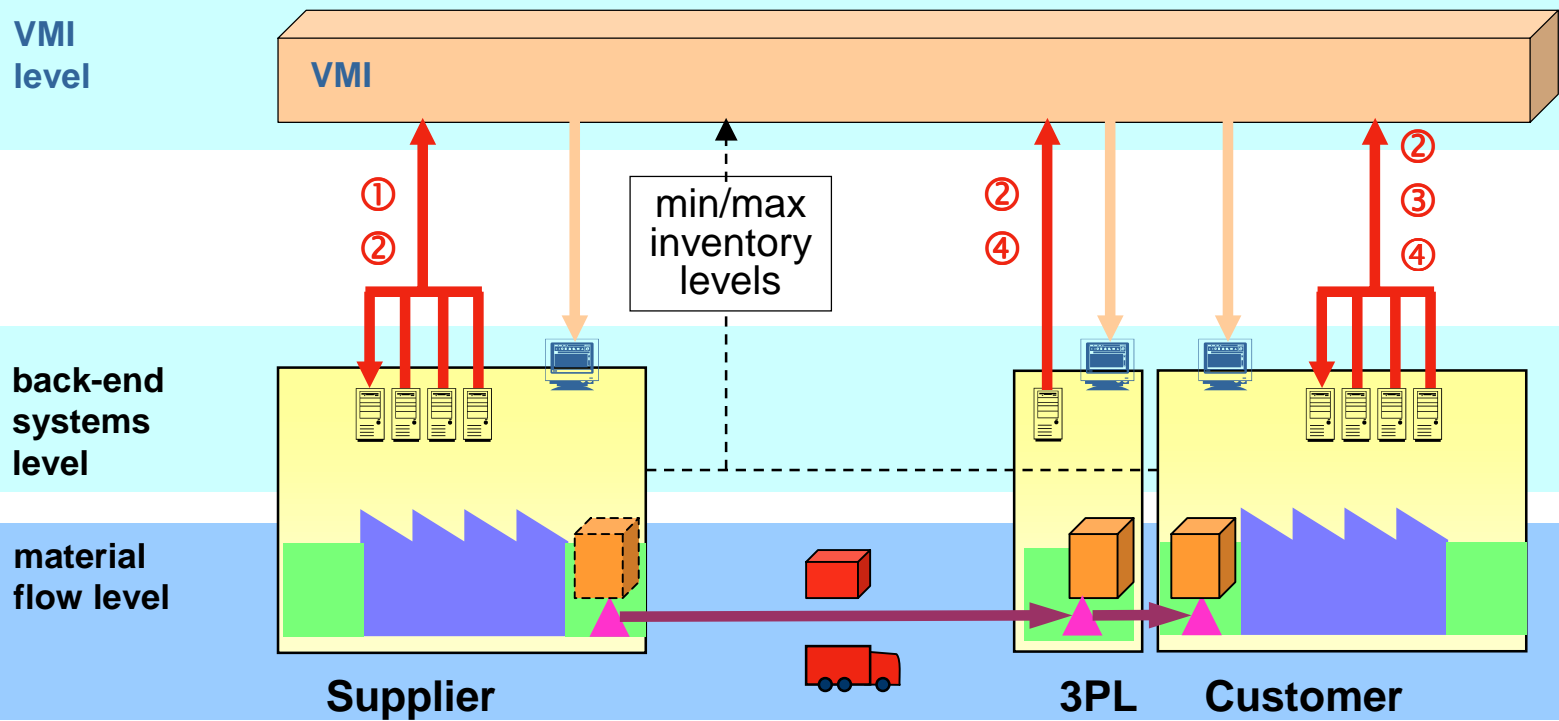
Model 1b: 3PL as Subcontractor of Customer



- ① ASN Information
- ② Inventory Information
- ③ Demand Information
- ④ Receiving Information

Basic Information Flow in VMI

Model 2: Direct Involvement of 3PL



- ① ASN Information
- ② Inventory Information
- ③ Demand Information
- ④ Receiving Information

Vendor Managed Inventory (VMI) Background

- Analysis of order based concepts:
 - ➔ Significant **safety stocks**
 - ➔ Significant **effort/cost** for supplier to follow volatile demand (ad hoc rescheduling, extra freight, overtime/idle time, etc.)
 - ➔ Reconciliation and ad hoc re-planning **effort** for customers and suppliers in case of unrealistic plans
 - ➔ Complex demand planning systems with lots of parameters promise optimized results, but
 - parameters are an approximation / do not reflect dynamics of reality ➔ risk for **sub-optimal** / **unrealistic planning**
 - planning algorithms are sensitive to small changes in input data/interference ➔ creating **volatile demand**
 - ➔ Lack of electronic communication at lower tier levels

Vendor Managed Inventory (VMI) Consequences and further Benefits

- Supplier is responsible to guarantee customer supply / replenishment
- Secure and efficient supply
 - ➔ minimized ad hoc activities and related effort/cost
 - ➔ robust regarding interference
- Minimum manual effort and responsibility on customer side (automated provision of updated gross demands and inventory information)
- Supplier has possibility to optimize shipping and production scheduling (e.g. transport synchronous production for one warehouse concept)

Vendor Managed Inventory (VMI)

Scope of VMI and differentiation to related concepts

- consignment stock concept:
 - ➔ kein Steuerungskonzept
 - ➔ supplier is owner of material in the warehouse normally close to customer plant
 - ➔ see “concept cube”
- KANBAN concept:
 - ➔ Steuerungskonzept
 - ➔ klare Vorgaben für Liefermengen und -zeiten (Lieferant reagiert)
 - ➔ verbrauchsgesteuert
 - ➔ prognostizierte Verbräuche werden nicht berücksichtigt
 - ➔ see “concept cube”

The “Concept Cube”

Scope of VMI and differentiation to related concepts

