Production Subcontracting (External Processing)

SAP Best Practices
Purpose, Benefits, and Key Process Steps

Purpose

- During the Manufacturing process, when a "Planned Order" for Production is converted to a "Production Order", the system will check to see if there are any routing/work-center operations which require external processing. External processing is when you have individual production steps, that are operations or sub-operations, which are performed outside of your company by a vendor. This type of processing is particularly important for subcontracting. It can also provide a company with a feasible alternative to in-house processing, if capacity bottlenecks occur.

Benefits

- An outline agreement can specify that a certain operation of the production order is executed by an external subcontractor on a regular basis
- In the case of capacity bottlenecks, the assembly procedure of the finished product can be assigned to a subcontractor

Key Process Steps

- Creating Purchase Order for External Processing
- Goods Receipt for “subcontracting” Purchase Order
- Enter Invoice
- Periodic Payment
Required SAP Applications and Company Roles

**Required**
- Enhancement package 5 for SAP ERP 6.0

**Company Roles**
- Production Supervisor
- Warehouse Clerk
- Purchaser
- Accounts Payable Accountant
Detailed Process Description

Production Subcontracting (External Processing)

- When a Production Order is scheduled, external operations need to be taken into account. The duration of an external operation is calculated either by using the planned delivery time or using the standard values. The system automatically creates a purchase requisition for the operation or sub-operation that requires external processing. The Production scheduler should inform the buyer they need to check the workload for requisitions that require external processing.

- When data is maintained for an external activity, a cost element is specified. The cost element determines how the external activity is to be valuated. A decision needs to be made as to whether an operation or sub-operation is processed externally via its control key. In the control key, it is determined whether externally processed operations are scheduled on the basis of their standard values or the planned delivery time. This information is needed to settle externally processed operations and sub-operations that have been marked as relevant for costing in their control keys.

- Purchasing should not convert the purchase requisition until the external processing is required. The reason for this is that any quantity changes on the production order will automatically update the requisition.

- Once the purchase order is created it is printed and sent to the vendor. The purchase order informs the vendor which service is required. The buyer/planner/scheduler creates a manual shipping document and provides the information to the shipping department on what components need to be gathered for the external processing and ships the components to the vendor.

- When the vendor has completed the external processing, the material is shipped back. The warehouse clerk receives the externally processed goods back into the warehouse. The vendor service is reflected on the production order via an operation confirmation. The purchase order and the production order show the quantity received.

- The goods receipt of an externally processed material causes the status of the operation to be updated: For a partial delivery of an external process operation, the status is: EOPD (External operation - partial delivery) and for final delivery of a external process operation the status is: EOFD (External operation - final delivery).
Process Flow Diagram
Production Subcontracting (External Processing)

- **Vendor**
  - Production Order Generates Purchase Requisition for External Services
- **Production Supervisor**
  - Check Order Operations
- **Purchaser**
  - Create PO from Purchase Req (Vendor assigned by Info record)
  - Print Purchase Order
- **Warehouse Clerk**
  - Ship Material to Vendor
- **Accounts Payable Accountant**
  - Periodic Payment: Accounts Payable (158)
  - GR/IR PPV Vendor
  - Invoice Receipt

- **Vendor Receives Material and Performs External Services**
- **Perform External Services**
- **Ship External Material Back to Plant**
- **Incoming Vendor Invoice**
- **Completion Confirmation of Production Order**

**Events**:
- Create PO from Purchase Req
- Print Purchase Order
- Ship Material to Vendor
- Subcontract Services GR/IR
- Goods Receipt for Subcontracting PO
- Deliver Material Back to Shop Floor
- Periodic Payment: Accounts Payable (158)
- GR/IR PPV Vendor
- Invoice Receipt

**Notes**: PP = Production Planning, RFQ = Request for Quotation, PO = Purchase Order, GR/IR = Goods Receipt/Invoice Receipt, PPV = Purchase Price Variance
### Legend

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Usage Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Band:</td>
<td>Identifies a user role, such as Accounts Payable Clerk or Sales Representative. This band can also identify an organization unit or group, rather than a specific role. The other process flow symbols in this table go into these rows. You have as many rows as required to cover all of the roles in the scenario.</td>
<td>Role band contains tasks common to that role.</td>
</tr>
<tr>
<td>External Events:</td>
<td>Contains events that start or end the scenario, or influence the course of events in the scenario.</td>
<td></td>
</tr>
<tr>
<td>Flow line (solid):</td>
<td>Line indicates the normal sequence of steps and direction of flow in the scenario. Flow line (dashed): Line indicates flow to infrequently-used or conditional tasks in a scenario. Line can also lead to documents involved in the process flow.</td>
<td>Connects two tasks in a scenario process or a non-step event.</td>
</tr>
<tr>
<td>Business Activity / Event:</td>
<td>Identifies an action that either leads into or out of the scenario, or an outside Process that happens during the scenario.</td>
<td>Does not correspond to a task step in the document.</td>
</tr>
<tr>
<td>Unit Process:</td>
<td>Identifies a task that is covered in a step-by-step manner in the scenario.</td>
<td>Corresponds to a task step in the document.</td>
</tr>
<tr>
<td>Process Reference:</td>
<td>If the scenario references another scenario in total, put the scenario number and name here.</td>
<td>Corresponds to a task step in the document.</td>
</tr>
<tr>
<td>Sub-Process Reference:</td>
<td>If the scenario references another scenario in part, put the scenario number, name, and the step numbers from that scenario here.</td>
<td>Corresponds to a task step in the document.</td>
</tr>
<tr>
<td>Process Decision:</td>
<td>Identifies a decision / branching point, signifying a choice to be made by the end user. Lines represent different choices emerging from different parts of the diamond.</td>
<td>Does not usually correspond to a task step in the document; Reflects a choice to be made after step execution.</td>
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<tr>
<td>&lt;Diagram Connection&gt;</td>
<td>To next / From last Diagram: Leads to the next / previous page of the Diagram</td>
<td>Flow chart continues on the next / previous page.</td>
</tr>
<tr>
<td>Hardcopy / Document:</td>
<td>Identifies a printed document, report, or form</td>
<td>Does not correspond to a task step in a document; instead, it is used to reflect a document generated by a task step; this shape does not have any outgoing flow lines.</td>
</tr>
<tr>
<td>Financial Actuals:</td>
<td>Indicates a financial posting document</td>
<td>Does not correspond to a task step in a document; instead, it is used to reflect a document generated by a task step; this shape does not have any outgoing flow lines.</td>
</tr>
<tr>
<td>Budget Planning:</td>
<td>Indicates a budget planning document</td>
<td>Does not correspond to a task step in a document; instead, it is used to reflect a document generated by a task step; this shape does not have any outgoing flow lines.</td>
</tr>
<tr>
<td>Manual Process:</td>
<td>Covers a task that is manually done</td>
<td>Does not generally correspond to a task step in a document; instead, it is used to reflect a task that is manually performed, such as unloading a truck in the warehouse, which affects the process flow.</td>
</tr>
<tr>
<td>Existing Version / Data:</td>
<td>This block covers data that feeds in from an external process</td>
<td>Does not generally correspond to a task step in a document; instead, this shape reflects data coming from an external source; this step does not have any incoming flow lines.</td>
</tr>
<tr>
<td>System Pass / Fail Decision:</td>
<td>This block covers an automatic decision made by the software</td>
<td>Does not generally correspond to a task step in the document; instead it is used to reflect an automatic decision by the system that is made after a step has been executed.</td>
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