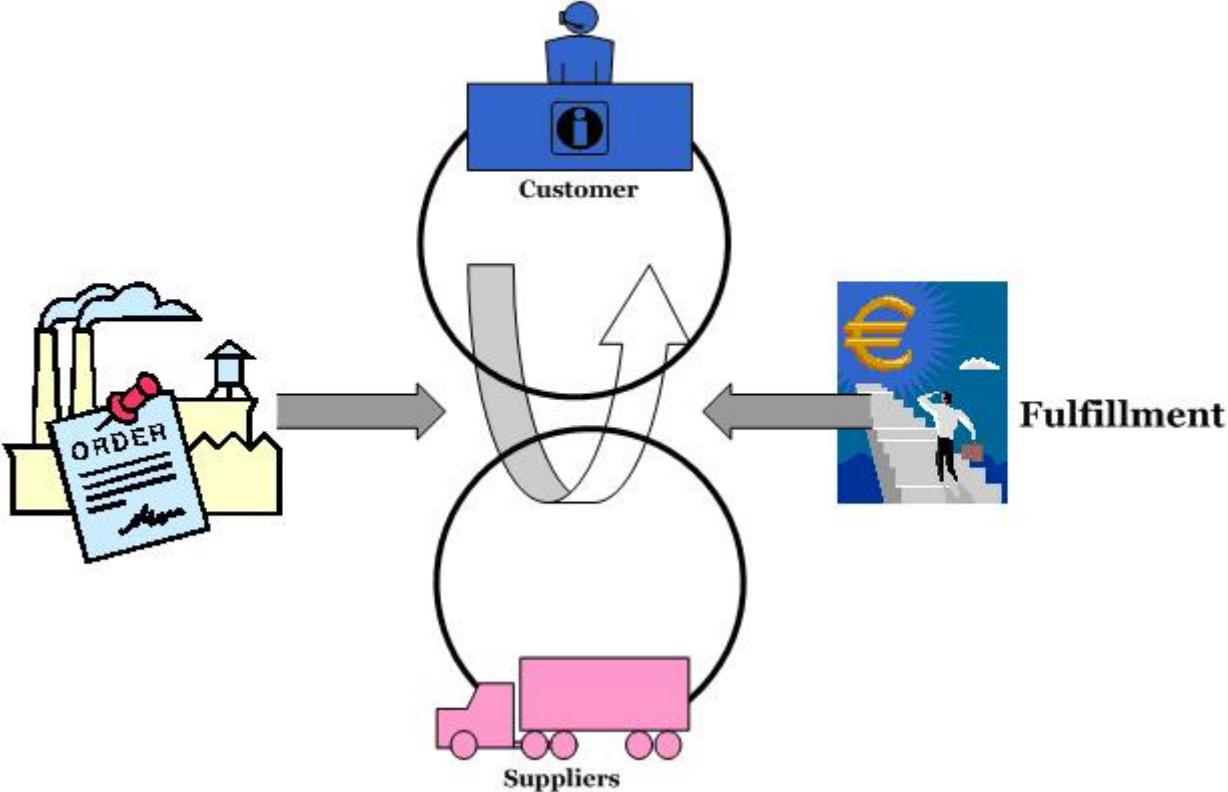


Order Rescheduling



Best Practice eXensys – Order Rescheduling

Exensys Software Solutions Ltd.		AA/B/CCDD V x.y
White Paper		W. E. F. dd/mm/yy

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Introduction:

Rescheduling of open orders has played a vital part in manufacturing systems to deal with production uncertainty like machine breakdowns, rush orders, quality problems or scraps. To quickly respond to the requirements of customers, rescheduling becomes a necessary component for manufacturing firms. With increasing unpredictability and instability in customer needs, rescheduling job orders becomes an essential component. When the production planners are loaded with several rescheduling requests, they can either use the informal or formal scheduling systems to evaluate each rescheduling requests. Informal system, such as the use of a hot list, may force planners to make incorrect decisions based on subjective judgment as it does not consider the timing, but the preference will be given only to the customers whom the firm value the most. Formal rescheduling systems have been developed to focus primarily on time factor. The scope of this document is to explain the process of production order rescheduling. The remainder of the paper is organized as follows. The next section describes about the process description followed by an example and the flow of events. Section 2 discusses the benefits and finally section 3 concludes the paper.

Overview:

1.Process Description:

Production order can be generated with reference of Planned/Manual/ Direct/Rework or Reprocess for Items. Each production order has Planned Start Date and Planned End Date where due to various reason in the manufacturing environment the Planned Production order execution is getting deviated from the Planned Start date and end date.. PO'S Status other than "order closed out" can be rescheduled. All the accumulated Production order details with status other than "order closed out" can be tracked and can be rescheduled similar to the way explained below.

2.Example:

PO Code	PO Quantity	Operation Code	Quantity Pending	Operation Start Date	Operation End Date	Operation Status	PO Status
PO 001	100	OP - 001	0	1.09.2008	2.09.2008	Closed	In Progress
		OP - 002	100	2.09.2008	4.09.2008	Created	
PO 002	120	OP - 001	0	2.09.2008	3.09.2008	Closed	In Progress
		OP - 002	0	4.09.2008	7.09.2008	Closed	
		OP - 003	120	7.09.2008	10.09.2008	Created	
		OP - 004	120	10.09.2008	11.09.2008	Created	
PO 003	100	OP - 005	100	11.09.2008	12.09.2008	Created	Released
PO 004	250	OP 004	125	12.09.2008	13.09.2008	In Progress	In Progress

		OP 005	250	13.09.2008	15.09.2008	Created	
PO 005	100	OP - 005	200	15.09.2008	15.09.2008	Closed	Closed

ID	Task Name	Start Date	End Date	Duration	Before Rescheduling														
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	PO 001	9/1/2008	9/4/2008	4d	[Bar]														
2	PO 002	9/2/2008	9/11/2008	8d	[Bar]														
3	PO 003	9/11/2008	9/12/2008	2d													[Bar]		
4	PO 004	9/12/2008	9/15/2008	2d														[Bar]	
5	PO 005	9/15/2008	9/15/2008	1d														[Bar]	

Based on the above example PO 005 will be eliminated as the order is closed out. In PO 001 only 1 operation (OP – 002) is completely pending, similarly OP – 003 & OP – 004 are fully pending in PO 002. Incase of PO 003, PO is released but no execution is carried out. And in case of PO 004 which has two operation, one operation is partially completed where as the next operation is completely pending.

PO Code	PO Quantity	Operation Code	Quantity Pending	Operation Status	PO Status
PO 001	100	OP - 002	100	Created	In Progress
PO 002	300	OP - 003	300	Created	In Progress
		OP - 004	300	Created	
PO 003	100	OP - 005	100	Created	Released
PO 004	250	OP - 004	125	In Progress	In Progress
		OP - 005	250	Created	

The following assumptions are made:

1. All the operations are carried out in the same workcenter.
2. Only one 8 hour shift per day.(Plant working only for 5 days)
3. Lead time of OP – 002 & OP – 003 are 5 Pieces per hour.
4. Lead time of OP – 004 & OP – 005 are 10 Pieces per hour.
5. Rescheduling is carried out on 5.09.2008.

PO Code	PO Quantity	Operation Code	Quantity Pending	Operation Start Date	Operation End Date	Operation Status	PO Status
PO 001	100	OP - 002	100	5.09.2008	9.09.2008	Created	In Progress
PO 002	120	OP - 003	120	9.09.2008	11.09.2008	Created	In Progress

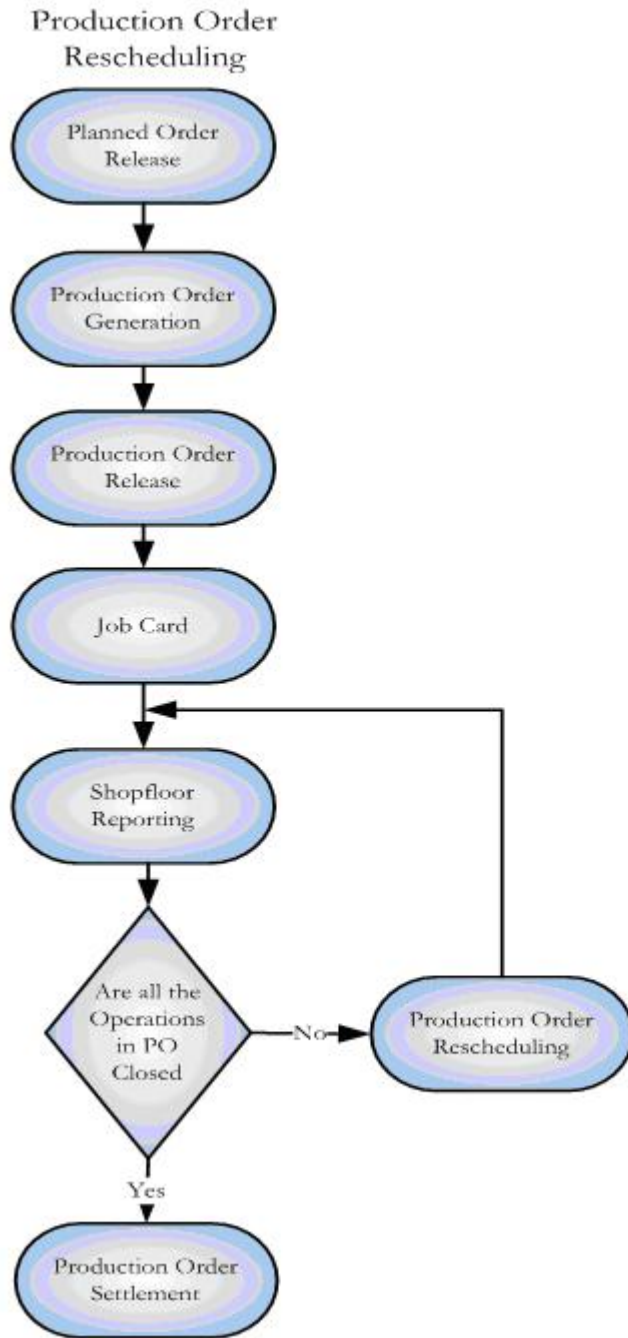
		OP - 004	120	11.09.2008	12.09.2008	Created	
PO 003	100	OP - 005	100	12.09.2008	15.09.2008	Created	Released
PO 004	250	OP 004	125	15.09.2008	16.09.2008	In Progress	In Progress
		OP 005	250	16.09.2008	19.09.2008	Created	

ID	Task Name	Start Date	End Date	Duration	After Rescheduling													
					5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	PO 001	9/5/2008	9/9/2008	3d	[Gantt bar from 5 to 8]													
2	PO 002	9/9/2008	9/12/2008	4d	[Gantt bar from 9 to 12]													
3	PO 003	9/12/2008	9/15/2008	2d	[Gantt bar from 13 to 14]													
4	PO 004	9/15/2008	9/19/2008	5d	[Gantt bar from 15 to 19]													

From the above example, OP – 002 will be executed on 5.09.2008 and based on the lead time about 40 Nos of FG will be completed on the same day (i.e Lead time = 5 Pieces/ Hour and No Of Hours available = 8,so no of pieces completed will be $8 * 5 = 40$).In a similar way calculation will be carried out for the remaining operations.Since all the operations are carried out in the same workcenter,unless & until the previous operation is closed the subsequent operation will not be executed.

Business Performance Sustained

3. Flow of events



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Benefits:

- Prioritization of Pending operations
- Improves customer satisfaction.

Conclusion:

All rescheduling approaches, at their core, seek to help a manufacturing system run more productively & efficiently. As rescheduling policy affects the performance of the manufacturing system, it needs to be considered in manufacturing system design. This paper clearly explains how the rescheduling will be carried out in eXensys ERP Suite.

