**Quality Excellence for Suppliers of
Telecommunications Forum
(QuEST Forum)**

TL 9000
Quality Management System

Measurements Handbook

OTD Examples

5.4 OTD Examples

5.4.1 On-Time Delivery Philosophy

When considering the TL 9000 OTD measures, it is important to remember that the intent of the measures is to drive improvement in delivery performance as viewed by the customer. This is why the customer requested delivery date is used in addition to the organization's promised delivery date in the determination of "on-time". It is also the reason unauthorized early deliveries are not counted as on-time deliveries. Viewing the measurement rules from the customer's viewpoint will aid greatly in applying them correctly.

5.4.2 On-Time Delivery for Items

5.4.2.1 On-Time Delivery For Items to Customer Request Date (CRD)

Table 5.4.2-1 illustrates computation of the OTI measurement from a series of delivered line items per purchase order (PO).

Table 5.4.2-1 On-Time Item Delivery (OTI) For March

Purchase Order	Line Item	CRD (mm/dd)	Quantity Ordered	Split Order	Quantity Delivered	Date Delivered (mm/dd)	Number of On-time Line Item CRDs Met	Note
A	1	03/10	5		5	03/10	1	
	2	03/12	6		6	03/13	0	
	3	03/17	4		4	03/18	0	
B	1	03/20	8		8	03/22	0	
	2	03/22	12	yes	6	03/22	0	1
				yes	6	03/25	0	
	3	03/29	2		2	unknown	0	2
	4	03/30	2		2	03/30	1	
C	1	02/15	7		7	03/15	NA	3
	2	02/15	1		1	03/15	NA	
D	1	03/25	20	yes	10	03/25	NA	4
				yes	10	03/25	1	
E	1	03/10	2		2	03/5	0	5
F	1	03/15	6		6	03/10	1	5
Number of Orders =5		Number of item CRDs due in month Dld = 10					On-time Line Items Dla = 4	
OTD for Line Items (OTI) = 100 x (Dla/Dld) = 100 x (4/10) = 40%								6

NOTES:
1) Line item B2 was not on time for the CRD because only ½ of the items were delivered on the CRD.
2) OTD date could not be confirmed or derived from other information and therefore the line item is assumed to have missed OTD.
3) Purchase Order line items C1 and C2 CRDs were not counted in

the total of 9 for March as they had a February CRD.
4) Order D is counted as 1 on-time line item because while both portions of the split shipments were delivered on time, it is still just 1 line item on the order.
5) Line item E1 was delivered early. Assuming there is no evidence of customer authorization of the early delivery, the CRD was not met. Order F1 was also delivered early but the early delivery was authorized by the customer and therefore the CRD was met.
6) The OTI performance for March is 4 (CRDs met) / 10 (CRDs due) or 40%.

5.4.2.2 On-Time Delivery For Items to Supplier Promised Date (SPD)

Table 5.4.2-1 illustrates computation of the OTIP measurement for the delivered line items per purchase order (PO) for the POs listed in the previous example (5.4.2.1).

Table 5.4.2-1 On-Time Item Delivery to Supplier Promised Date (OTIP) For March

Purchase Order	Line Item	SPD (mm/dd)	Quantity Ordered	Split Order	Quantity Delivered	Date Delivered (mm/dd)	Number of On-time Line Item SPDs Met	Note
A	1	03/10	5		5	03/10	1	
	2	03/13	6		6	03/13	1	1
	3	03/17	4		4	03/18	0	
B	1	03/20	8		8	03/22	0	
	2	03/22	12	yes	6	03/22	0	2
				yes	6	03/25	0	
	3	03/29	2		2	03/29	1	
	4	03/30	2		2	03/30	1	
C	1	02/15	7		7	03/15	NA	3
	2	02/15	1		1	03/15	NA	
D	1	03/25	20	yes	10	03/25	NA	4
				yes	10	03/25	1	
E	1	03/10	2		2	03/5	0	5
F	1	03/15	6		6	03/10	1	5
Number of Orders = 5		Number of item SPDs due in month DiPd = 10					On-time Line Items DiPa = 6	
OTIP = 100 x (DiPa/DiPd) = 100 x (6/10) = 60%								6

NOTES:
1) Although the customer requested a 3/12 delivery, the supplier indicated they could not guarantee delivery on that date, but promised delivery on 3/13. This SPD was met.
2) Line item B2 was not on time for the SPD because only ½ of the items were delivered on the SPD.

3) Purchase Order line items C1 and C2 SPDs were not counted in the total of 9 for March as they had a February SPD.
4) Line item D is counted as 1 on-time line item because while both

portions of the split shipments were delivered on time, it is still just 1 line item on the order.

5) Line item E1 was delivered early. Assuming there is no evidence of customer authorization of the early delivery, the SPD was not met. Order F1 was also delivered early but the early delivery was authorized by the customer and therefore the SPD was met.

6) The OTIP performance for March is 6 (SPDs met) / 10 (SPDs due) or 60%.

As you may have observed, the above example for OTIP is nearly identical to the example for OTI. That is because the measures are identical with the only difference being that OTI is on time to customer request date and OTIP is on time to supplier promised date.

5.4.3   On-Time Delivery For Services Including System Installations

Table 5.4.3-1 illustrates computation of the OTD measurement from a series of services per purchase order (PO).

Table 5.4.3-1 On-Time Service Delivery (OTS) For March

Purchase Order	Task/Line Item	CRD (mm/dd)	Date Completed (mm/dd)	Date Accepted (mm/dd)	Number of On-time Services CRDs met	Note
F	1	03/10	03/10	03/10	1	
	2		03/10			
	3		03/10			
G	1	03/20	03/22	03/25	0	
	2		03/22			
H	1	03/21	03/21	03/22	0	
	2		03/21			
I	1	02/15	03/15		NA	1
	2		03/15			
J	1	03/25	03/15	03/25	0	2
Number of Purchase Orders = 5		CRDs Due in moth DVd = 4			On-time Service CRDs DVa = 1	
OTD for Service (OTS) = 100 x (DVa/DVd) = 100 x (1/4) = 25%						3

NOTES:
1) Purchase Order I was not counted in the total of 4 for March as it had a February CRD.
2) Purchase Order J was completed but not accepted for early delivery by the customer. Thus, the CRD was not met.

3) The OTS performance for March is 1(CRD met) / 4 (CRDs due) or 25%.

The task/line items are shown in Table 5.4.3-1 for completeness only. The service has not been delivered until the last task has been accepted as complete.

The data reported for the above examples are shown in Table 5.4.3-1.

Table 5.4.3-1 Example 5.4.2 & 5.4.3 – OTD Data Table Report

Identifier	Value
MeasurementID	OTD
DIa	3
DId	9
DVa	1
DVd	4

5.4.4   Frequently asked questions

5.4.4.1 When does delivery occur?

Delivery occurs when the customer accepts control of the physical line item for OTI or accepts the service as being completed for OTS. For a physical line item, this can be at the organization's dock if that is where the customer accepts the item per rule 5.4.4 b) 10). For example, when the customer specifies the shipper or otherwise takes control of the shipment at the organization's factory or distribution center, then delivery has been made as the time the customer is notified the item is available at the organization's dock. A commonly used term associated with some orders of this type is FOB – Factory.

5.4.4.2 Are deliveries of software counted?

Software that is physically delivered via a CD-ROM, tape, or other physical media is treated as any other line item. Software that is electronically delivered by the organization by placement of the new software on the customer's equipment is also treated like a line item. A delivery of software that is made by placement on the organization's server for later download by the customer is not counted in OTD per rule 5.4.4 c) 2).

5.4.4.3 How is material that is part of a service order handled?

Unless the material related to a service order is ordered, delivered, and accepted by the customer in a separate transaction with its own CRD, the service material delivery is considered being made to the organization providing the service and not the customer per 5.4.4 c) 3). Therefore there is no delivery data to be reported for the material itself. Only the data pertaining to the delivery of the service is reported. Table 5.4.4.2 -1 below shows how this applies to various types of orders.

Table 5.4.4.2-1 Order type versus OTD measure

Order Type	Description	OTD Measure	Notes
F	Furnish only (line items)	OTI	
F&I	Furnish and Install	OTS	1
EF& I	Engineer, Furnish, and Install	OTS	1
I	Install	OTS	
E	Engineer	OTS	
E&F	Engineer and Furnish	OTS & OTI	2

NOTES:
1) F&I and EF&I orders are typically set up with a single CRD with on time delivery determined by acceptance by the customer at that time. If there is a separate transaction where the customer assumes control of the equipment

separate from completion of the installation, such as a delivery of spare circuit packs, then that transaction would be reported in OTI. A separate invoice or bill sent to the customer for the equipment delivery would be a clear indication of the need to report OTI in addition to the OTS. If everything remains under the organization's control until completion of the installation, then there is only OTS data to report.

2) It is standard industry practice to have a separate delivery and CRD related to the delivery of the engineering design package associated with an E&F order. If this is not the case for a particular order, then there would only be OTI data to report.

5.4.4.4 What if the customer requested delivery date (CRD) is "unreasonable"?

By definition, rule 5.4.4 c) 1), the only "unreasonable" CRD is one that is before the date the order is received by the organization. Such orders may be excluded from the OTD measurement. If the organization believes a CRD to be unreasonable, it is free to refuse the order. Once an order is accepted, then the on-time performance is to be measured against the CRD.

While the organization may not request a change to the CRD once the order is accepted, rule 5.4.4 b) 6), it is free to negotiate contractual standard delivery intervals with the customer prior to receipt an order. Any such delivery interval agreed to by the customer can then be applied when an order is received. This contractual agreement would override the requested delivery date on the purchase order,

5.4.4.5 Do I have to get separate authorization for every early delivery in order for it to count on time?

No, a blanket agreement may be set up to authorize a delivery window that allows early deliveries for any order. Typically these agreements noting the customer may still specify a given date when it is required. It should be noted agreements such as this are common for certain services such as repair, maintenance, support, or installation.

5.4.4.6 How do I handle a service order with multiple tasks?

A single service order with several activities should be considered as multiple services being purchased by the customer. The delivery data shall be measured against the Customer Requested Date (CRD) for the order as per the standard rules for On Time Delivery. If the tasks on the order are associated with activities that cover multiple product categories within the Organization's scope of registration, the service order must be reported against each applicable product category. For example, if an order requires installation, provisioning and engineering activities (multiple product categories) and the Organization is certified to all 3 product categories, the Organization will be required to submit data for 7.1.1 Installations, 7.1.2 Provisioning and 7.2.1 Network Engineering Service for that single order.

Example #1: Customer places an order for a service consisting of three tasks - Network Engineering, Installation and Provisioning - on one order, with a **single CRD**, i.e. a compound order as per counting rule 5.4.4 b) 11).

- If all three tasks are completed and accepted by the Customer by the CRD, then On-Time is reported in each category.

- If one or more of the tasks is not completed and accepted by the Customer by the CRD, then Missed On-Time is reported in all three categories.

Example #2: Customer places an order for three services - Network Engineering, Installation and Provisioning - on one order, with the same CRD for each service. Assuming each service is delivered and accepted separately by the customer, each service is considered individually, that is:

- If the Network Engineering and Installation services are completed and accepted by the Customer by the CRD but the Provisioning service is not, then On-Time is reported for Network Engineering and Installation and Missed On-Time is reported for Provisioning.

Example # 3: If an order requires installation, provisioning and engineering activities (multiple product categories). how do we handle following scenarios:

If the Organization is NOT certified to all 3 product categories (say certified for only one product category 7.1.1) the Organization will be required to submit data only for that product category 7.1.1. The organization completes tasks under 7.1.1(certification scope) on time and there is a delay in completion of tasks not in certification scope. Being a compound order should this be considered a delayed delivery even though the delay is caused by tasks not in certification scope?

A compound order means that all the tasks/elements are treated in aggregate. That is, if any of the components are not on time, then all tasks/elements are not on time from an OTD perspective. If some of those tasks/elements are outside the scope of registration, those tasks/elements would not have data submitted for them. But that doesn't change the fact that all those that are being reported, regardless of which product category they are being submitted against, must be reported as not on time.

5.4.4.7 How do I handle a purchase order for the installation of a system involving multiple sites?

When considering a purchase order for the installation of a system involving multiple sites, a determination must be made as to whether the purchase order should be treated as one service order or a collection of multiple service orders. If it is clearly defined by the purchase order terms and/or description, or by follow-up conversation with the customer, then the Organization must use this for assembling their measurement results.

Unfortunately, sometimes it is not clear how the customer wishes to handle multi-site acceptance from reviewing the purchase order. For these cases, typically, the way the order has been set up in the organization's billing system will indicate the customer's expectations for how they wish it to be treated.

- If the order is set up with a separate requested delivery dates (note that one or more of those dates could be identical) and each of those sites will be separately accepted by the customer, then the work at each site should be treated as a separate service order. In other words, the order is not completed until the customer takes ownership. If the customer takes ownership by individual sites then the unit of measurement is by sites.

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- If the customer does not accept the work and take ownership of any sites until all the sites are completed, then the purchase order should be treated as a single service order with a single delivery date.

In short, the determination of the number of service orders involved with a multi-site installation depends on how the customer accepts the work and takes ownership of the equipment.

5.4.4.8 How are customer-attributable delays for CRD managed?

Orders involving customer-attributable delays such as breach of contract due to credit issues or requests not to ship with no alternate due date established are excluded. In general, breaches of contract by the customer would make the order or contract null and void.