# MAXIMUS

# MAXDAT Production Planning for Contact Center

# Features and Metrics Supported

# *Project Level*

# 12-June-2013

# Version 1.5

**REVISION**

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| **Date** | **Version** | **Description** | **Author** |
| 06/04/13 | 1.0 | Original Draft | R. Riefel |
| 06/07/13 | 1.1 | Updates based on 6/5 and 6/6 session and reconciliation with intervaltablesv4.xls | O. Cheta and B. Zhang |
| 6/7/13 | 1.2 | Cleaned up comments and added two agent performance metrics at the end | B. Zhang |
| 6/10 | 1.3 | Incorporated Randall’s edits | B. Zhang |
| 6/11 | 1.4 | Added metrics definitions | B. Zhang |
| 6/12 | 1.5 | Added to definitions to aid understanding | B. Zhang |
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To-Be Features

1. Ability to manually load production plan data using a simple (requiring no more than 30 minutes of training) 1-2 step process from Arena output (csv file) to database where “actuals” data is stored for reporting.
2. Ability to load data from any source that has been inserted to standardized staging tables. This enables push of actual data from external systems, event processors, etc.
3. Ability to update plan data for all or part of a plan period by following the same steps as #1 or #2 above for the plan and without affecting actuals already calculated for the production plan.
4. Ability to join on date and/or date and interval, e.g., 30 minutes and unit of work (contact center queues) to actuals data.
5. Grain per unit of work will be by time interval (default is 30 minutes) for both forecast and actuals. Grain may vary for different units of work within the same plan and period but will be consistent within a single unit of work. For example, a unit-of-work will not contain a forecast by hour for one week and by date for another week.
6. Ability to drill in to details on actuals data within a single unit-of-work. Drilling to individual record details will be configured per-report and limited to reports for a specific unit of work where detail data is available. In the Contact Center, it’s just the interval data. For Ops, you need to look at the task within a unit-of-work. (This is optional when we have individual call detail and will not be supported in this release.
7. Actual counts and metric values will be calculated and updated on a schedule to be configurable by plan and unit-of-work. The loading schedule of actual data by the grain that the data is available to us. If we get actual data every 30 min, but PP is at an hour, we are not changing how fast the raw data comes in, rather we aggregate since the PP is at an hourly level.
8. Identifiers will be captured for actual counts to enable drilling to details within reports. Ability to drill into the underlying detail that was used to derive the fact.
9. During load of daily forecast data, the system will calculate the average age of inventory and forecast jeopardy inventory for each date. Business rules for jeopardy and average age will be easily configurable.
10. Actual Contacts Created measures, Contacts Offered measures, Contacts Handled measures, Contacts Handled per “Service Time” “measures, Staff Hours Assigned, and handle time measures will be calculated and updated by interval for 1 day following the plan date.
11. All metrics that have a “forecasted” and “actual” measure will also have calculated a simple deviation metric and a percent deviation metrics, e.g., For the pair metrics of Forecasted Contacts Created and Actual Contacts Created there will be a Deviation Contacts Created (Forecast- Actual) and a Percentage Deviation Contacts Created Metrics (Forecast-Actual)/Forecast. Please note this can be either positive or negative.
12. All metric of central tendency, i.e., measure an average (Average Handle Time) will have a Mean, Median, Min, Max, and Standard Deviation Metrics. For Example the Average Handle Time will have Mean Handle Time, Median Handle Time, etc.
13. Ability to manually load actuals from a formatted text file (csv)
14. Ability to process and load actuals from defined standard staging area. This enables push of actual data from external systems, event processors, etc.
15. All data defined in source data documents will be gathered and available for analysis even if they are not associated with the required metrics documented below. As of 7 June one source document exists for ACD Interval Data.
16. Attributes Required for Reporting
    1. Region
    2. State or Province
    3. Project
    4. Program
    5. Site
    6. Production Plan Name
    7. Plan Start Date
    8. Plan Start Hour
    9. Plan End Date
    10. Plan End Hour
    11. Plan Last Modified
    12. Plan Creation Date
    13. Unit of Work Type
    14. Unit of Work Name
    15. Time Unit (used of handle times etc, default is minutes)
    16. Plan Date
    17. Plan Interval
17. Metrics Required for Reporting (all by interval, by UOW). Calculations for actual inventory metrics will be performed only for the current day and interval (if applicable).
    1. Forecast Contacts Created
    2. Forecast Contacts Offered
    3. Forecast Contacts Handled
    4. Forecasted Average Speed to Handle (speed to handle is the caller’s time in IVR + wait time +talk time + hold time)
    5. Forecasted Average Speed to Answer
    6. Forecast Contacts Abandoned
    7. Forecast Inventory
    8. Forecast Inventory Average Age
    9. Forecast Inventory Jeopardy
    10. Forecast Average Handle Time(handle time is the agent’s talk time+ hold time + wrap time)
    11. Forecast Labor Minutes Total
    12. Forecast Labor Minutes Available
    13. Forecast Labor Minutes Waiting
    14. Forecast Total Headcount
    15. Forecast Headcount
    16. Forecast Headcount unavailable
    17. Forecast Service Level defined as the % of contacts that will be answered in X seconds)
    18. Actual Contacts Created at IVR
    19. Actual Contacts Contained
    20. Actual Contacts Contained for Self Service Action n where n = 1, 2, …, 20
    21. Actual Average Time in IVR
    22. Actual Contacts Transferred
    23. Actual Contacts Offered to ACD
    24. Actual Contacts Handled
    25. Actual Average Speed to Handle
    26. Actual Average Speed to Answer
    27. Actual Contact Answered in service time interval n where n = 1, 2,…,10
    28. Actual Contacts Abandoned
    29. Actual Contacts Abandoned in time interval n where n = 1, 2,…,10
    30. Actuals Contacts Queued Out to Another Skill or App
    31. Actual Total Answered Time in Seconds
    32. Actual Total Abandon Time Seconds
    33. Actual Total Talk Time
    34. Actual Total ACW (After-Call Work) Time
    35. Actual Longest Call Wait Time
    36. Actual Calls Answered in Service Level
    37. Actual Total Calls Put on Hold
    38. Actual Total Hold Time
    39. Actual Short Abandons
    40. Actual Inventory
    41. Actual Inventory Average Age
    42. Actual Inventory Jeopardy
    43. Actual Average Handle Time
    44. Actual Labor Minutes Total
    45. Actual Labor Minutes Available
    46. Actual Labor Minutes Unavailable
    47. Actual Labor Minutes Waiting
    48. Actual Total Headcount
    49. Actual Headcount Available
    50. Actual Headcount Unavailable
    51. Actual Headcount Waiting
    52. Actual Service Level Answer Time (defined as the actual % of contacts that are answered in X seconds)
    53. Actual Service Level Abandonment Rate (% of calls offered that were abandoned)
    54. Actual Contacts Blocked
    55. Outflow Contacts

Contacts on Hold

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| 1. **Metrics Definition**   **Metrics** | **Definition** | **Remarks / Questions** |
| Contacts Created at IVR | Total number of contacts coming into the contact center. | Contacts created = contacts offered + contacts contained |
| Contacts Offered to the ACD | Number of calls routed to agents queue. |  |
| Contacts Handled | Number of contacts that were responded by an agent. | Contacts handled + contacts abandoned = contacts offered |
| Speed to Handle | Speed to handle is calculated as the sum of caller’s time in IVR, wait time, talk time, and hold time. | Speed to handle assess the total time a caller stays in the contact center system. |
| Speed to Answer | The time a caller spends in the queue before talking to an agent. | Typically high abandonment rate is associated with long wait time (speed to answer). Key performance metrics is defined around speed to answer. |
| Contacts Abandoned | Calls answered by the ACD system then disconnected by the caller or incorrectly dropped by the system. | The key performance indicator Abandonment Rate = contacts abandoned / contacts offered |
| Inventory | Items received/tasks created but is either work in progress or has not been started. | It is unlikely that call center will use this metrics. |
| Inventory Age | Number of days since an item (task) has been received (created) but has not been completed nor canceled | It is unlikely that call center will use this metrics. |
| Inventory Jeopardy | Number of work items that are at risk of missing service target. | It is unlikely that call center will use this metrics. |
| Handle Time | Agent’s talk time+ hold time + wrap time |  |
| Labor Minutes Total | Total staff minutes at work, including all staff on the payroll. | At any time instance, Labor Minutes Total = Labor Minutes Available + Labor Minutes Unavailable. |
| Labor Minutes Available | Total staff logged on time (minutes), or time spent in an available state waiting for a customer contact. Also called ready time. |  |
| Labor Minutes Unavailable | Total minutes that staff logged out for any reason. |  |
| Labor Minutes Waiting | Total minutes that staff logged on but not handling contacts | The percent of labor wait time (among total paid time) may indicate how effective the staff are scheduled at each time interval (daily, hourly, or 15 minutes interval). However, the service target will set a limit on the total minimum wait time, i.e., a very good service level requires “more wait time” to be built into the schedule in order for that service level to be achievable. |
| Total Headcount | Number of all staff on payroll regardless of status | At any time instance, Total headcount = headcount available + headcount unavailable. However, the above equation may not hold for a time interval. Need to understand how the total headcount is calculated for a time interval. |
| Headcount Available | Number of staff who logged on | Headcount available / total headcount indicates how well staff is utilized. |
| Headcount Unavailable | Number of staff who logged out for any reason, e.g., headcount in vacation, FMLA, trainings, and meetings. |  |
| Headcount Waiting | Number of staff who logged on but not handling contacts | Similar to Labor Minutes Waiting, this metrics is useful to assess the scheduling efficiency. |
| Service Level Answer Time | Percent of calls answered within answer time threshold.  Examples include the wait times for an inbound call to get answered, a web chat to be responded to, or a service dispatch to be initiated. It indicates what percent of the transactions begin processing on or before a defined wait time (usually expressed in seconds). | E.g., for service level 75/120, the first number is the target for the percent of transactions handled and the second number is the cycle time target, typically expressed in seconds. So 75/120 means the target is 75% of the transactions are processed on or before 120 seconds. |
| Service Level Abandonment Rate | Calls abandoned / Calls offered | Key performance indicator reflecting two things: 1) customer patience level for wait, and 2) how adequately a contact center is staffed. |
| Contacts Contained in the IVR | Number of contacts that do not end up with a live operator. It does not differentiate between satisfied and unsatisfied callers. | Used to calculate IVR containment rate ( = contacts contained / contacts created) |
| Contacts Contained for Self Service Action n where n = 1, 2, …, 20 | Number of contacts ending up at self service action n, n = 1,2,…,20 |  |
| Time in IVR | Total time a call spent in the IVR before joining agent queue or abandoned. |  |
| Contacts Transferred | Contacts that were re-routed or escalated to another agent or skill group. Examples include calls that start in a sales queue but really need to be handled by technical support. |  |
| Contact Answered in service time interval n where n = 1, 2,…,10 | Total number of contacts answered within each service level threshold n during the reporting interval. | An example of the service time can be: n = 30 seconds, 60 seconds, 90 seconds, 120 seconds, 180 seconds, … , an hour, two hours, and more than two hours.  **Question**: should the volume in each service time n be non cumulative? YES (confirmed by Rodger) |
| Contacts Abandoned in time interval n where n = 1, 2,…, 10 | Total number of contacts abandoned within each abandon interval n during the reporting interval. | By carefully choosing the interval bucket, this can tell us customer’s tolerance level (patience curve). |
| Contacts Queued Out to Another Skill or App | Number of contacts queued to multiple skill group or applications |  |
| Total Answered Time | Total wait time spent in a queue for all calls that were answered in a reporting interval. | This is used to calculate the average speed to answer. |
| Total Abandon Time | Total Time spent in agent queues for all calls that were abandoned in a reporting interval. |  |
| Talk Time | The time agents spend with a customer. Does not include hold time or ACW. |  |
| ACW Time | Time spent completing the transaction after the customer has been release or disconnected. | Time spent after a customer call or chat until the agent state change places them in idle or ready. This is a component of Average Handle Time (AHT). |
| Longest Call Wait Time | The longest time a call had to wait before it was disposed (abandoned, answered, etc...) in the reporting interval. |  |
| Calls Answered in Service Level | The total number of calls answered within the service level threshold during the reporting interval. |  |
| Total Calls Put on Hold | Total number of calls agents put on hold at least once during the reporting interval. |  |
| Total Hold Time | Total time for all calls being on hold during the reporting interval. | Used to calculate average hold time (and, indirectly, average handle time) for a reporting interval. |
| Short Abandons | The total number of calls to the route that were too short to be considered abandoned during the reporting interval. |  |
| Contacts Blocked | Number of calls that are not allowed into the system due to trunk capacity or system issues. | This is useful metrics but we realize data may not be available. |
| Outflow Contacts | Number of calls queued out to another skill or app during this interval. |  |
| Contacts on Hold | Number of contacts put on hold at least once during the reporting interval. |  |