AnswerOn Behavioral Analytics

Standardized ACD Extract

Business Requirements Specification

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| --- | --- |
| Version Number: | 5.2 |
| Prepared By: | Eric Stewart |
| Prepared Date: | 4/11/2016 |

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# Update Log

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| --- | --- | --- |
| Date Updated | Updated By | Comments |
| 3/28/2016 | Eric Stewart | Initial draft |
| 3/29/2016 | Eric Stewart | Updating to v5 for consistency  Adding in additional signatories  Removing “call type” references  Adding “language” clarifications |
| 4/1/2016 | Eric Stewart | Modified layout and attribute names for consistency with prior formats |
| 4/11/2016 | Eric Stewart | Appendix A – Data Definition modified to keep naming conventions and column order exact between requirements and AO file specification |

# 

# Document Purpose

The purpose of this document is to highlight the business and functional requirements needed to guide the development and integration of a standardized ACD dataset into the AnswerOn Behavioral Analytics initiative.

This document highlights the business specific attributes needed from an operational call (ACD) system extract and the functionality needed to produce a configurable code base that can be leveraged at projects participating in this initiative.

Overview

## Requirements Gathering Approach

Requirements collected in this document build on a rigorous initial effort to standardize attributes collected to support the AnswerOn pilot. The initial efforts were compiled in partnership with analytics vendor AnswerOn to identify likely predictive attributes and includes attributes know in prior work to have predictive power.

The data and attribute requirements identified in this document are also influenced through findings during the pilot effort of data collection and predictive analytics model creation. Based on project team reports, findings, and system limitations, attributes identified in the initial effort, several attributes have been omitted due to difficulty collecting them globally or with a lack of consistent system support – the data is not available. Challenging attributes with manual processing requirements were identified and largely omitted.

The predictive analytics vendor, AnswerOn, contributed to the review and assessment of viable attributes based on predictive model performance. Attributes with limited predictive power were removed, particularly when they would also require manual data compilation.

Lastly, a technical review of the team members listed below identify and document (through this document) additional attributes and calculations needed beyond the initial attribute documentation effort.

The following table lists the team members comprising the project team responsible for producing the deliverables of this stage.

| Team Member | Role | Organization |
| --- | --- | --- |
| Oana Cheta | Initiative Oversight | VP, BPM |
| Eric Stewart | Project Liaison / Manager | Dir, BPM |

The following table lists the participating teams that have interdependencies with this data project. These teams have participated in gathering and reviewing requirements to support the corresponding requirements.

| Contact | Department/Roll | Organization |
| --- | --- | --- |
| Nizar Mechergui | CA HCO | WFM Manager |
| Helen Austin | FL HK | Sr. Analyst |
| Peter Courtois | TX EC | Sr. Manager, OR |
| Chris Dabek | SOA Glendale | Sr. Director |
| Chris Johnson | Project Manager | AnswerOn |

The following table list authorized Approvers

| Contact | Department/Roll | Organization |
| --- | --- | --- |
| Randall Riefel | Sr. Vice President | SVP, BPM |

## Project Background

Agent attrition is one of the most common problems in the BPO industry today. Thus, there is substantial opportunity to affect bottom-line profit if there is an efficient way to quickly identify which agents are likely to leave and proactively intervene with a coaching package to turn a churn-likely agent into a loyal one. The objective of this initiative is to quickly identify those agents that are likely to leave, proactively contact these agents (prioritized based on your profitability criteria), and retain those agents with an approved intervention.

Maximus initiated a pilot project with AnswerOn with the objective to utilize predictive analytics as the core of a program to monitor and reduce agent attrition. The AnswerOn process uses predictive models built from MMS transactional and operational data sources to intelligently identify agents that are likely to churn and prescribes effective coaching interventions.

With the completion of the pilot phase, existing projects will transition to regular reporting and require monthly data delivery. In addition, two new projects will be introduced using an onboarding work plan that consists of historical data delivery and a transition to standard monthly reporting.

Both the onboarding process and the transition to standard reporting require standard data development using operational systems to collect data in a consistent format. The standard data development is to be developed by the BPM team and implemented/configured locally by each project.

## Assumptions

* All required points of contact will be identified before project initiation
* All data systems will be identified before project initiation
* Data systems support custom extract development
* Custom code or query logic can be deployed at the project level
* BPM staff have the required access and ability to develop standardized logic
* Identified project staff have the required access and ability to deploy data extract logic and processes to support monthly data collection requirements
* This document covers ACD specific data and no other sources
* A separate document will address the integration of data across sources

## Key Comments

* Requirements in this document may identify attributes that cannot be supported by all ACD systems, and should be tracked through the issue process.

## Dependencies

* Projects will be responsible for the configuration and deployment of standard code

## Key Issues Log

| ID | Description | Assigned | Status | Resolution | Date | Staff |
| --- | --- | --- | --- | --- | --- | --- |
| 1 |  |  |  |  |  |  |

# Functional Requirements

## Predictive Analysis Requirements - ACD

1. The predictive analysis objective of this initiative requires access to operational agent and call data to understand trends in agent performance, both historically and in relation with other predictive attributes across separate systems. Agent metrics collected and calculated from this data include agent talk and call volumes, productive time, and performance metrics like average handle time. This call and performance data contributes to an overall predictive model and forms a significant component of a complete agent history.

## Data Requirements

1. Summary / Sources  
     
   Based on the above Analysis Requirements, operational performance data is needed at the agent level from the Cisco and Avaya ACD systems.

A configurable code base is required for each system to produce an extract with daily agent-level ACD data for a defined date range (start date – end date).

The configuration needed for this code base will require a solution to accommodate project and system-specific filters as well as custom code mappings.

A document describing configuration parameters used to deploy this code base to an individual project is required, and must include details to facilitate a project making changes to the base code to address appropriate mappings to queues or system codes.

1. Standards

Data from these systems will require standardization to common attributes, with attribute definitions and standard mappings for each ACD source identified and tracked in the mapping document included in Appendix A.

Data from these systems will also require specific code mapping of “queues” and “aux codes” for each individual project and system to standard attributes. Attributes requiring mapping and a template for recording specific project mappings is included in the mapping document in Appendix B.

1. Data Flow Mapping: Source to End   
     
   The data collected from the Cisco and Avaya ACD systems will be required to support integration with other HR and Scheduling systems. While data will largely be delivered independently by source, specific mappings and standards for each source are defined to facilitate subsequent integration by AnswerOn.



1. History

Historical data will be required of new projects being on-boarded into the initiative. The initial historical data volume is 6 months of daily agent-level performance and operational data.

Regular “ongoing” analytical processing will require 1 month of daily agent-level performance and operational data delivered monthly.

No historical data collection following regular monthly reporting is required.

As defined in Standards (above), mappings per project must be maintained with changes tracked as new mappings and operational gaps with unmatched data are identified.

1. Quality Requirements

Monthly data should be final, with any totals or internal system processing completed before activity is aggregated or data is provided.

All agent records should be included from the ACD system when at least one call is attributed or non-zero logged-in time is recorded.

Where agent records are included but an attribute cannot be calculated due to a lack of data, a NULL value should be included. Agent ID attributes should be included.

Where a mapping does not exist, logic should return a (-1) or other distinguishing value for the attribute to indicate a mapping error or missing mapped value.

Where a calculation returns an error, logic should return a (-2) or other distinguishing value for the attribute to indicate a calculation error.

Calculations should be naturally consistent and internally balance, i.e. agent talk time cannot exceed total agent logged in time.

1. Reconciliation Requirements  
     
   A historical pull of prior monthly data (following a regular monthly submission) should match submitted data, with regular monthly data representing final states and totals per agent and day.

A unique key – or set of attributes to form a compound key – including a system business key - should be included with each record in the ACD dataset for traceability to the source data source or table.

1. Retention and Archival Requirements

Specific code mappings will be required to be maintained per system, either in the code directly or in data tables stored with system code.

Historical data retention will be provided by the predictive analytics vendor, AnswerOn.

## Business Logic

1. Total Number of Call Types Supported (Language)

The number of languages supported by the agent - 1 = Single, 2 = Multiple

1. Cumulative Queue Time

Provide agent paid ready (logged-on) time that the agent(s) spends handling or waiting for contacts.

Will require the use of custom “aux code” mapping (See mapping and definition details of Post Call Wrap Time).

Formula: (Talk Time + Hold Time + Post Call Wrap Time + Idle Time)

1. Total Minutes Productive Time

The percentage of agent(s) paid ready (logged-on) time that the agent(s) spends handling contacts (talk and hold time) plus doing legitimate after-call-work (wrap time) and in project defined productive states, i.e. training, coaching, etc.

Will require the use of custom “aux code” mapping (See mapping and definition details of Productive Time).

Formula: (Talk Time + Hold Time + Wrap Time + After Call Work Time Total + Project Productive States)

1. Average Handle Time

The number of seconds representing the average length of time that agents spent working a call from the time the call is answered by an agent to the time the call is terminated. This includes talk time, after call work time and hold time.

Will require the use of custom “aux code” mapping (See mapping and definition details of Post Call Wrap Time).

Formula: Average Handle Time = (Talk Time Total + Hold Time Total + Post Call Wrap Time) / Calls Handled

## Extract/Report Requirements

1. Historical ACD Extract (Avaya & Cisco)
   1. Purpose – One-time ACD system extract used to generate historical operational data as a baseline for predictive model development.
   2. Source – Cisco / Avaya
   3. Users – Ad-hoc query to deliver results to project owner and project data lead
   4. Frequency - Once
   5. Filters - Start/End Date, Project-specific filters described in Appendix B
   6. Period/Lookback – 6 complete/full months prior to the month of project initiation
   7. Format – Comma/Tab separated value extract file
2. Monthly ACD Extract (Avaya & Cisco)
   1. Purpose – Regular ACD system extract used to generate ongoing operational data on agent performance for continuing agent risk score production.
   2. Source – Cisco / Avaya
   3. Users – Scheduled query to deliver data to project owner and project data lead
   4. Frequency – Monthly. Execute following the 15th of each month.
   5. Filters - Start/End Date, Project-specific filters described in Appendix B
   6. Period/Lookback – 1 month – 15th of the prior month to the 15th of the current month
   7. Format – Comma/Tab separated value extract file

## Security Requirements

1. Data will be securely transmitted to AnswerOn via the MAXIMUS Secure Exchange portal
   1. Eric Stewart will facilitate the loading of individual data file for each project until such time that all project owners have individual logins
   2. Eric Stewart will facilitate the requests to create individual project logins

## Testing Considerations - TBD

Based on the Requirements Validation in the Business Requirements document and the above content within this document, provide guidelines for the various kinds of testing activities to be done in support of quality assurance:

* Unit Tests. Provide a guideline of UT expectations to the Designer and Developer, e.g. record counts, dollars totals
* Functional Testing. Refer to the Analyst Team’s Test Plan and include a link for details
* Requirements Traceability Matrix. High-level matrix that lists the requirements and associates each of them with a test use case or use cases contained in the Test Plan
* User Acceptance. Provide a general description of how users have said they want to be able to test the data

# Product Roadmap

## Project Deliverables

1. Completed mapping document identifying attribute mappings and filters for required fields from the Cisco ACD system
2. Completed mapping document identifying attribute mappings and filters for required fields from the Avaya ACD system
3. Base extract code/logic for the Cisco system
4. Base extract code/logic for the Avaya system
5. Configuration documentation for the Cisco system
6. Configuration documentation for the Avaya system

# Appendix A – Data Definition

The required operational call and performance attributes are included in the embedded worksheet. Attribute definitions include calculations and descriptions of data required from the Cisco and Avaya systems. A mapping column is included to facilitate mapping and tracking source system attributes by name to required attributes.



# Appendix B – Mapping/Filters

The configuration aspects of this code require the use of data filters and the ability to map project codes (generally described as “queues” and “aux codes”) into common business terms that can be shared across projects.

The required attributes with filter or custom mapping requirements are included in the embedded worksheet to facilitate mapping and tracking source system attributes by name to required attributes.

Filter Requirements and Definitions

| Attribute | Definition | Filter Type |
| --- | --- | --- |
| Date | Global filter used to define the start and end day for operation and limit agent activity and performance calculations by day. | Global – Limit all reported activity outside of the start and end date defined |
| Agent Type | Global filter used to control the type of agent included in extract output. Defined generally as agent "roles" in the system that may be used to isolate "on the floor" agents from supervisors, workforce management, and QA team roles. | Global – Used to omit agents from any agent performance calculations that would include an agent in reported data. |

Mapping Requirements and Definitions

| Attribute | Definition | Mapping Type |
| --- | --- | --- |
| Project Name | A standard naming convention to define the source of the data extract | A one-time configuration value or parameter passed at run-time |
| Post Call Wrap Time | The set of codes used by the project to identify productive post call wrap time beyond a standard system wrap code | Project-specific “aux” codes |
| Lunch | The set of codes used by the project to identify agent lunch, if project policy is for agents to remain logged-in all day | Project-specific “aux” codes |
| Break | The set of codes used by the project to identify agent breaks, if project policy is for agents to remain logged-in all day | Project-specific “aux” codes |
| Productive Time | The set of codes used by the project to identify productive agent time beyond standard talk, hold, wrap (i.e. training, coaching) | Project-specific “aux” codes |
| Non-Productive Time | The set of codes used by the project to specifically identify non-productive agent time | Project-specific “aux” codes |
| Internal Transfer Call | Internal call types defined by the project (if used) to identify when an agent transfers a call to another peer agent. | Project-specific call type or call termination point code. |
| Internal Escalation Call | Internal call types defined by the project (if used) to identify when an agent transfers a call to a supervisor. | Project-specific call type or call termination point code. |
| Outbound Call | The queues identified by the project that are used to track outbound call activity. | Project-specific “queues” |
| Language | The queues identified by the project that are align to specific languages. | Project-specific “queues” |



# Requirements Sign Off Sheet

| Team Member | Sign | Date |
| --- | --- | --- |
| Randall Riefel |  |  |
| Ann Russo |  |  |
| Gary Rients |  |  |
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