



**Technical  
White  
Paper**

## **Turning Facts into Intelligence with Avaya IQ**

How the Avaya IQ data model provides a platform for harnessing information in your contact center.

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## Section 1: Introduction

Avaya IQ is a new way of seeing your contact center. Conventional reporting is like watching a televised football game with a single camera. Only with many perspectives can you really analyze the game.

Now, imagine being able to take real-time control of the cameras and view the game's events from any angle or elevation. Now you can imagine the power of Avaya IQ.

The Avaya IQ data model provides a versatile and extensible platform for harnessing information in your contact center. Information is presented to you through an innovative reporting model that adds mission-critical intelligence to your raw data and allows your reports to adapt to future changes in the data structure.

The result is analytics at your fingertips, giving everyone the tools they need to run a more efficient contact center. This is the value of Avaya IQ — using data to drive Intelligent Communications with your customers.

With Avaya IQ, Avaya is introducing the power of analytics designed for people at every level who have an interest in contact center performance. The reporting interface is so easy and intuitive that anyone can begin using analytics without any special training. Once they have intelligent data at their fingertips, the quality and timeliness of their actions can reach new levels of effectiveness.

Understanding how Avaya IQ turns events into valuable business reporting allows you to fully utilize Avaya IQ. Let's explore how Avaya IQ converts facts into intelligence.

### What Is Avaya IQ?

Avaya IQ is a reporting and analytics platform that helps companies share one view of the truth, to make faster, better decisions and create a consistent customer experience.

Customers and analysts have acknowledged Avaya Call Management System (CMS) as the gold standard for contact center reporting. Customers asked Avaya to provide the next step in the evolutionary path of reporting, and the answer is Avaya IQ.

Avaya IQ is the cornerstone for embedding intelligent communications in the enterprise. It is rich in features that ensure that it will adapt to the future. Its extensible data model makes it ready to evolve with the needs of the business — in the contact center and beyond.

## Section 2: Gathering the Facts

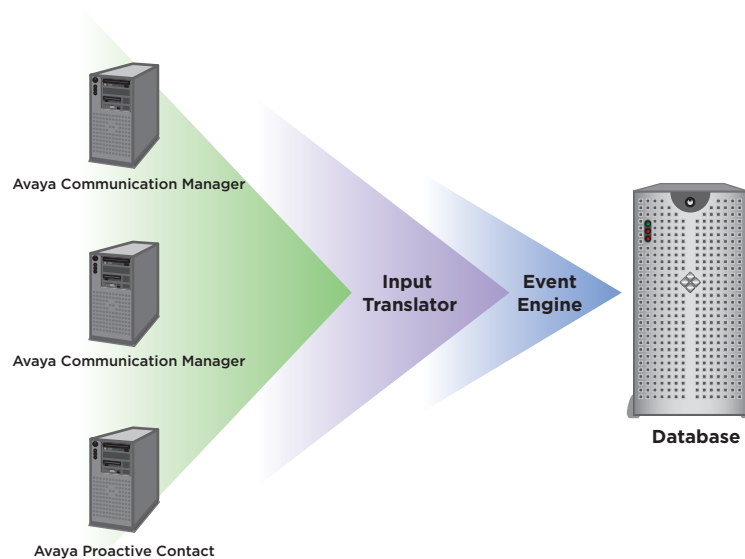
Avaya IQ sifts through data to find the facts that help fine-tune your contact center. It collects data in the form of *events* from sources such as Avaya Communication Manager and Avaya Proactive Contact.

Whenever a monitored resource — such as an agent, queue, or routing point — encounters a state change, Avaya IQ learns of that event in real time. When an agent logs into Communication Manager, for example, Avaya IQ collects a login event; when an agent places a call on hold, Avaya IQ collects a hold event.

### Event stream enables sophisticated reporting

The Avaya IQ *input translator* collects events from various sources and creates a single data stream. The integrated data stream is how Avaya IQ enables the reporting of blended agents.

The data stream goes from the input translator to an *event engine*. The event engine generates *facts* by interpreting the contents of the data stream. Using a set of state machines, the engine determines which events will be stored as raw data.



The input translator creates a single data stream from multiple sources, and determines which events to store.

### Fact records capture the customer experience

Fact records contain detailed data associated with contacts, agents, queues and routing points. The detailed data is comprised primarily of *counts* and *durations*. The number of transfers associated with a contact is an example of a count, while the time spent in wrap-up is an example of a duration.

Avaya IQ stores various levels of detail associated with facts. The most detailed level is the *trace level*. At this level Avaya IQ adds a new row for every event — whenever any party makes a state change. With this level of detail, a supervisor can see the entire customer experience.

The *contact level* has a row for every contact and provides a summary view of what happened on that contact. The *interval level* provides an agent and queue summary row for every 15 minute interval. Interval summaries are a time-saving feature of Avaya IQ, allowing you to quickly see the output for contact-level reports.

### Normalizing event sources provides real comparisons

By normalizing events into a centralized database, Avaya IQ gives you a true comparison of contacts handled by different sources, such as Communications Manager and Proactive Contact. You can use the normalized data, for example, to learn whether some agents perform better on inbound calls, while others are more productive on outbound calls.

The benefit of a centralized database is that Avaya IQ can track contacts from cradle to grave, even when contacts move between sources. Additionally, the common data model can be extended to support additional event sources, such as multi-channel and IVR, as they are added.

The transport mechanism between Avaya Communication Manager and Avaya IQ is an extension of the reliable interface between Communication Manager and Avaya Call Management System (CMS). The transport

mechanism between Avaya Proactive Contact and Avaya IQ also is a well established interface, giving you reliable data with which to manage your contact center.

### **Importing data provides a business perspective**

In addition to event data, Avaya IQ can import data from your other databases. Avaya IQ can correlate this data with event data to produce business reports.

For example, a call recording can be linked to the associated contact record, enabling you to drill down from a customer experience trace directly into the recorded call itself. Whenever you suspect a problem, you can learn immediately whether the situation needs your attention.

Avaya IQ can capture other data, including the revenue and a quality score associated with a contact. This provides the ability to look at a contact from a business perspective — correlating revenue per call to time in queue, for example — as well as an operational perspective.

For example, let's say you suspect that revenue would improve if agents received two hours of training. Now you can test this theory with one team of agents, and learn how well it will pay off, before investing in training for all agents.

### **Flexible data model grows with your contact center**

Avaya designed the Avaya IQ data model using best practices to create an industry-standard dimensional model. It is flexible and extensible for future enhancements, including the integration of channels beyond voice.

The Avaya IQ data model will support e-mail contacts, as well as instant messaging contacts, for example. Avaya IQ provides the foundation for you to easily consolidate reporting as your operations grow in sophistication.

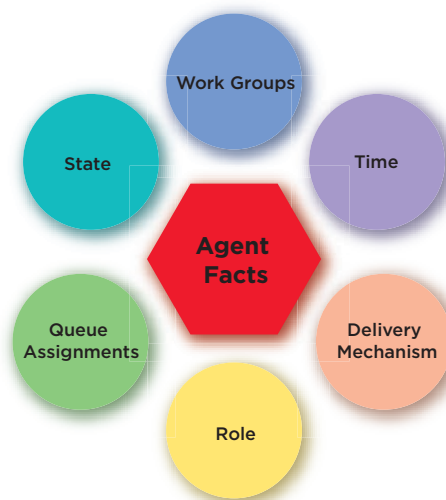
The capacity of the Avaya IQ data model is unconstrained, because Avaya IQ stores events in rows instead of columns. To illustrate the advantage of this method, consider agent states, where a row is added to the Agent State Detail table every time an agent changes state. If the table contained columns for each possible state type, it would be inflexible. By eliminating the column structure, Avaya IQ makes it easy to add agent states or auxiliary states with minimal or no development effort.

### **Star schema enables consistent reports from many points of view**

Multi-dimensional views of data are very useful in analyzing large volumes of time-based business activities. The *star schema* makes multi-dimensional database functionality possible using a relational database. The name reflects the schema diagram, shaped like a star.

Avaya IQ uses the star schema to give fast access to consistent reports. Dimensions — such as agents, queues and routing points — are centered on facts, such as agent trace data. You can organize those facts based on the dimension that is most meaningful for you.

For example, you can view how much time an agent spent in a certain auxiliary state. Using the same set of facts, you can determine how much time an agent spent handling internal versus inbound contacts.



The star schema makes multi-dimensional database functionality possible using a relational database.

The detailed fact records captured by Avaya IQ enable powerful reporting. Avaya IQ goes beyond the facts by adding intelligence to the data. Now you can assess not only what happened – but delve deeper and learn *why* it happened.

### Section 3: New Level of Intelligence

As the industry leader in contact center reporting, Avaya is raising the bar on reporting standards. Using customer input from a panel of over 70 companies, we evolved our reporting technologies to deliver exciting new capabilities based on your needs and requirements. This makes Avaya IQ the best contact center reporting solution for you, because it was designed by you.

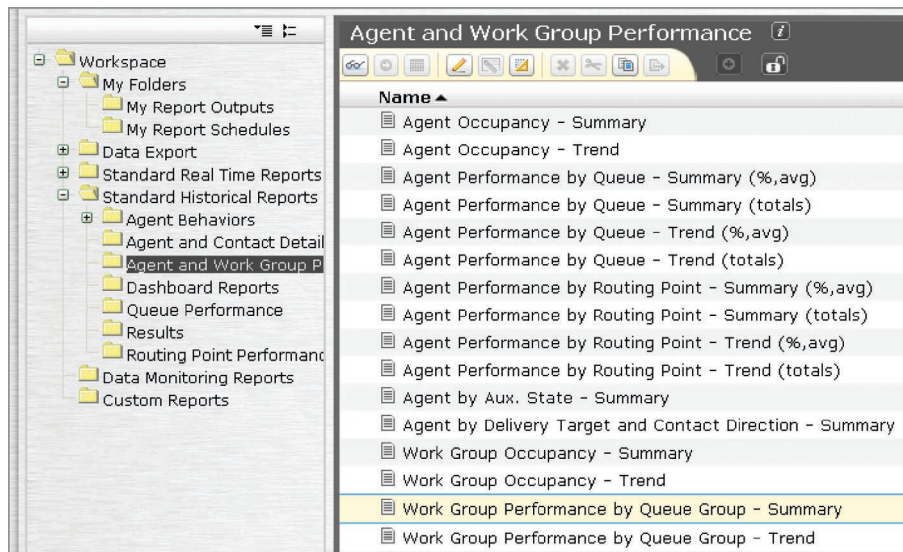
#### Dimensional data lends perspective

Dimensional data allows you to produce reports that match the way you want to run your business. Think of dimensions as a way to filter data so that it answers your business questions, with the ability to filter on multiple dimensions at the same time. The end result is multiple perspectives of the one truth, based on detailed data.

With Avaya IQ you can view data based on agent, queue, routing point (also known as vector directory number) and contact dimensions. You can view your contact center data from a customer's or agent's perspective, as well as by location, function, or other views to meet your business needs.

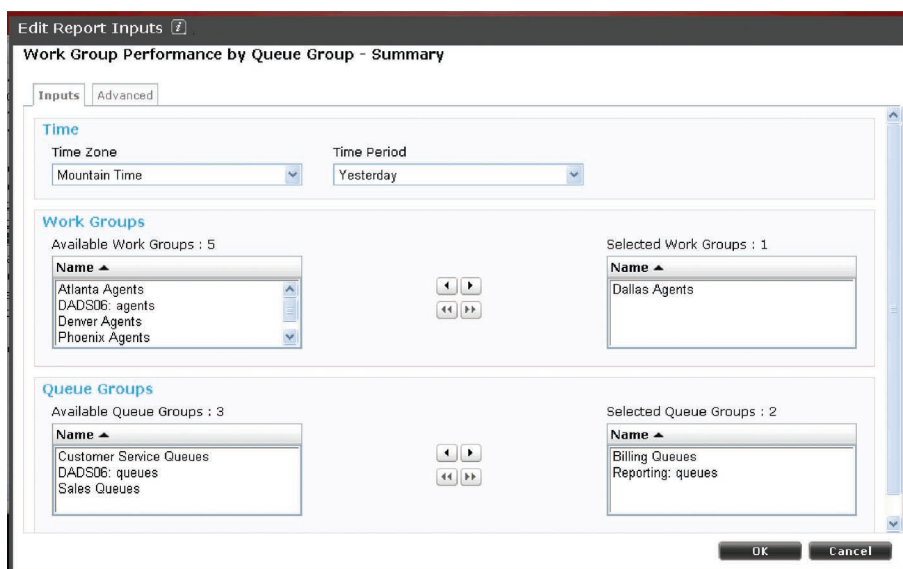
For example, what is the average talk time for a specific customer group across your enterprise? How did the Chicago location perform, in comparison to the Paris location? Did the Paris group have longer talk times, but bring in more revenue? Avaya IQ helps you answer questions like these, as well as other business questions.

These dimensions are reflected in the report titles and folder names, so you can easily find your desired reports. The Agent and Work Group Performance folder is one example. Here, you can select a variety of historical reports, such as the Work Group Performance by Queue Group Summary report.



With Avaya IQ you can view your contact center data from a full range of perspectives to meet your business needs. The perspectives are reflected in the report titles and folder names, so you can easily find your desired reports.

Once you identify a report, you can further refine the content through additional dimensions, such as time and groups. These additional filters are defined via the report input page; they can be saved for repeat executions, or to schedule the report.



Refine your report content through additional dimensions via the report input page, and save them for repeat executions.

### Time and group dimensions

With the time dimension, report users can be located in many different time zones, without the inconvenience of reporting in a single time zone. Avaya IQ allows them to view the data in their preferred time zone.

All reports are available for all time periods, without the need to create separate daily, weekly, and monthly reports. Additionally, all trend reports are available in time patterns, such as the day of the week, or hour of the day. This makes it easy to manage operations in a single site or across many locations.

The value of the group dimension is that it narrows the resources to choose from, when you are dealing with potentially thousands of resources. Avaya IQ provides the means to grant permissions to groups based on each user's scope of responsibility. If a supervisor, for example, can run reports on only her set of agents, then an agent group can be created with just her agents, and then assigned to her for reporting purposes. That supervisor will then be offered only her group of agents to select from.

A report user with a broader scope of responsibility may have access to all agent groups in one location, for example, or all agents that serve a particular business function. Permissions on Avaya IQ groups determine what data each report user can access.

### Conformed dimensions allow detailed comparisons

To support reporting across event sources and tables, with drilling to deeper levels of data, Avaya IQ supports a set of *conformed dimensions*, or dimensions with identical meanings.

For example, all historical tables in Avaya IQ support the same time periods, so you can drill from the group level to the individual level. All routing constructs have a conformed dimension that allows comparison — so a skill and a queue have the same meaning, regardless of event source.

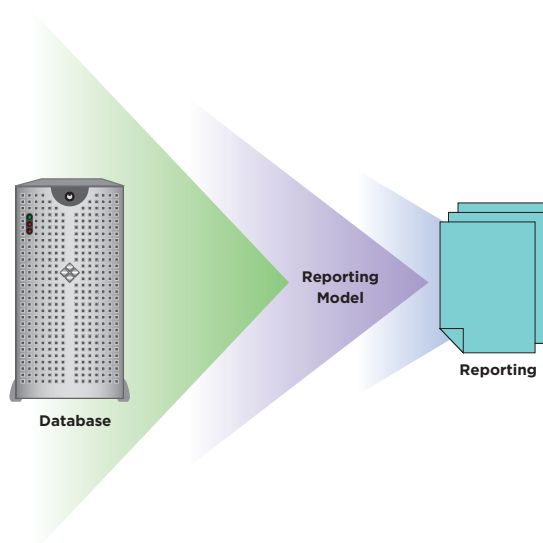
With dimensional data, Avaya IQ achieves a new level of intelligence in contact center reporting. It allows you to quickly go from the big picture to the details, so you can get to the root cause of a problem.

Avaya IQ takes yet another step in adding intelligence by supporting a reporting model.

### Reporting model adds intelligence

The Avaya IQ *reporting model* works as a flexible connection between the data model and the reporting tools. This allows Avaya IQ to perform additional analysis by transforming the counts and durations into useful Key Performance Indicators.

When creating custom reports you will be using data items from the reporting model, not directly referencing the vast data sets in the data model. When the data model changes, it will not negatively affect your existing reports.



The reporting model connects the data model with reporting tools that transform data into useful Key Performance Indicators.

### Attribution points clarify sequences of events

Avaya IQ records events as they happen, for more accurate time-based reports.

Earlier reporting applications supported a single attribution point for a contact, typically when the contact and all its parties completed. For contacts that were long, or transferred between agents, some events were recorded in the interval in which they concluded, which sometimes created confusion.

That is, a transfer at 11:28, and an alert at 11:36, might not be recorded until 12:04 when the contact concluded. All of these events were then reported in the 12:00 hour, not necessarily during the interval that the event occurred.

Avaya IQ solves this problem by attributing the duration when the state ends. For example, queue duration is attributed when the queuing state ends; active and hold durations are attributed when the contact reaches a state when no more active or hold events can occur.

### Real-time sliding window provides relevant metrics

Rather than using a clock-based interval for real-time reports, the Avaya IQ reporting model can report on events occurring in the last 15, 30, or 60 minutes. Real-time metrics do not zero out at the beginning of each interval.

Instead, Avaya IQ implements a *sliding time window*. Each time the report is refreshed, the sliding window is adjusted to show you the accumulated counts during the interval. If you choose a sliding window of 30 minutes, the report always displays counts for the most recent 30 minutes. This means that all metrics are always relevant, as there is no reset to zero at the beginning of an interval.

### Multilingual capabilities spell convenience, in any language

Another added value of the Avaya IQ reporting model is the ability to provide display names of Avaya IQ defined resources, such as auxiliary states, in the language of the report user.

The reporting tools identify the report user's locale, and relay that to the reporting model. Avaya IQ then presents reports to the user in the appropriate language.

For example, when an agent goes to lunch, the agent state can be labeled "déjeuner" for a supervisor in Paris, while it is labeled "lunch" for a supervisor in London. Avaya IQ provides the infrastructure to extend multiple language support to other resources as the product evolves.

### Next-Generation Capabilities

Avaya IQ delivers on next generation contact center reporting today. Some of these key next generation abilities include:

- Hiding data source differences from the rest of the system and report users using the input translators, which makes it easier to add new data sources in the future.
- Creating a single event stream allowing contacts that cross sources to be tracked and viewed from end to end as a single contact.
- Collecting detailed data for all agents and contacts all the time, and providing access to this data through trace reports.
- Providing an efficient means of accessing data by separating fact and dimension information.
- Using row-based storing methods, rather than column based, to support unconstrained capacities.

## Learn More

For more information on how Avaya can provide the right data, at the right time, and from the perspective you need for making business decisions, contact your Avaya Client Executive or Authorized Avaya BusinessPartner, or visit us at [www.avaya.com](http://www.avaya.com).

### About Avaya

Avaya delivers Intelligent Communications solutions that help companies transform their businesses to achieve market-place advantage. More than 1 million businesses worldwide, including more than 90 percent of the FORTUNE 500®, use Avaya solutions for IP Telephony,

Unified Communications, Contact Centers and Communications Enabled Business Processes. Avaya Global Services provides comprehensive service and support for companies, small to large. For more information visit the Avaya Web site: <http://www.avaya.com>.



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