

# **NICE Engage Solution Overview Release 6.3**

# Contents

|                                                                                  |           |
|----------------------------------------------------------------------------------|-----------|
| <b>Introduction</b> .....                                                        | <b>5</b>  |
| <b>NICE Engage Platform 6.3</b> .....                                            | <b>6</b>  |
| <b>Advanced Interaction Recorder</b> .....                                       | <b>7</b>  |
| <b>NICE Engage Highlights</b> .....                                              | <b>8</b>  |
| <b>Interaction Recording and Infrastructure</b> .....                            | <b>10</b> |
| <b>Enterprise Grade Recording Solutions</b> .....                                | <b>11</b> |
| <b>NICE Engage Blueprint</b> .....                                               | <b>12</b> |
| <b>Interaction Recording Platform: Advanced Interaction Recorder - AIR</b> ..... | <b>13</b> |
| Voice over IP Recording .....                                                    | 14        |
| Passive VoIP Recording .....                                                     | 14        |
| Active VoIP Recording .....                                                      | 14        |
| SIP Trunk Recording.....                                                         | 14        |
| Screen Recording .....                                                           | 16        |
| Text Recording.....                                                              | 16        |
| TDM Recording.....                                                               | 17        |
| <b>Enterprise Management (Multi-site)</b> .....                                  | <b>18</b> |
| <b>Enterprise Scalability</b> .....                                              | <b>19</b> |
| <b>Business Continuity</b> .....                                                 | <b>20</b> |
| High Availability.....                                                           | 20        |
| Multi Data Centers .....                                                         | 20        |
| Remote Site Survivability .....                                                  | 21        |
| <b>Storage Management</b> .....                                                  | <b>22</b> |
| Storage Rules .....                                                              | 22        |
| <b>Security</b> .....                                                            | <b>24</b> |
| Multi-Tier Architecture.....                                                     | 24        |
| Information Security .....                                                       | 24        |
| Audit Trail.....                                                                 | 24        |
| Updates and Patches.....                                                         | 25        |
| Microsoft Active Directory Integration and Single Sign-on.....                   | 25        |
| Compliance with Payment Card Industry Data Security Standard (PCI-DSS) .....     | 25        |

|                                                              |           |
|--------------------------------------------------------------|-----------|
| <b>Virtualization Support .....</b>                          | <b>26</b> |
| Server-Side Virtualization.....                              | 26        |
| Client-Side Virtualization .....                             | 26        |
| Thin Clients.....                                            | 26        |
| <b>Operating Systems and SQL Server 2012 .....</b>           | <b>27</b> |
| <b>System Usability, Maintenance and Administration.....</b> | <b>28</b> |
| <b>End-User Environment.....</b>                             | <b>30</b> |
| Web-based and .NET.....                                      | 30        |
| Query.....                                                   | 30        |
| Playback .....                                               | 30        |
| <b>Quality Management.....</b>                               | <b>32</b> |
| <b>Quality Optimization.....</b>                             | <b>33</b> |
| Overview.....                                                | 33        |
| Quality Planner .....                                        | 33        |
| Out-of-the-Box KPIs.....                                     | 34        |
| QM Based Guidance.....                                       | 36        |
| <b>Advanced Query .....</b>                                  | <b>37</b> |
| <b>Playback.....</b>                                         | <b>40</b> |
| <b>Agent Evaluation .....</b>                                | <b>41</b> |
| Form Designer .....                                          | 42        |
| Calibration.....                                             | 42        |
| <b>Coaching .....</b>                                        | <b>45</b> |
| Action Packages .....                                        | 46        |
| Bi-Directional Coaching Process.....                         | 46        |
| <b>Unified Portal .....</b>                                  | <b>47</b> |
| <b>Rules Manager .....</b>                                   | <b>49</b> |
| Recording Scheduler.....                                     | 49        |
| Automatic System Scores .....                                | 50        |
| <b>Enterprise Reporting .....</b>                            | <b>51</b> |
| <b>Multi-Tenancy .....</b>                                   | <b>52</b> |
| <b>COPC Support .....</b>                                    | <b>53</b> |
| <b>Interaction Analytics.....</b>                            | <b>54</b> |
| <b>Interactions Analytics Business Applications .....</b>    | <b>55</b> |
| Insight Manager .....                                        | 55        |
| ClearSight.....                                              | 57        |
| Hot Topics.....                                              | 59        |
| Insight Amplifier .....                                      | 62        |

|                                                            |           |
|------------------------------------------------------------|-----------|
| <b>Packaged Business Solutions</b> .....                   | <b>65</b> |
| Handle Time Optimization.....                              | 65        |
| First Call Resolution.....                                 | 66        |
| Customer Satisfaction.....                                 | 67        |
| Sales Effectiveness.....                                   | 68        |
| Collections Effectiveness.....                             | 69        |
| Churn reduction.....                                       | 70        |
| <b>Interaction Analytics Platform</b> .....                | <b>71</b> |
| Speech Analytics.....                                      | 71        |
| Call Flow Analytics.....                                   | 71        |
| Desktop Tagging.....                                       | 71        |
| Text Mining.....                                           | 72        |
| Business Data Analytics.....                               | 72        |
| <b>Real-Time Speech Analytics</b> .....                    | <b>73</b> |
| <b>Real-Time Authentication and Fraud Prevention</b> ..... | <b>74</b> |

## Introduction

The NICE Engage Platform provides comprehensive multi-channel interaction recording to help organizations comply with regulations and gain business insight. It also serves as the foundation of the broad NICE portfolio of offline and real-time applications.

Capturing interactions across communication channels, analyzing them to discover valuable insights, and applying these insights in real time, at the Decisive Moment™ of customer interactions, for maximum business impact. It enables organizations to improve customer experience, enhance operational efficiency, ensure regulatory compliance and drive revenue growth through unified solutions and best-in-class capabilities.

The solution serves leading organizations from a variety of industries, such as financial services, telecommunications, healthcare, outsourcers, retail, service providers and utilities.

## **NICE Engage Platform 6.3**

NICE Engage Platform 6.3, the successor of NICE Interaction Management 4.1, introduces the new Advanced Interaction Recorder for high scale recording and streaming, and Insight Amplifier for faceted search and text analytics on text interactions and transcribed voice calls.

NICE Engage Platform, by moving from TDM to VoIP and SIP-based recording, as well as infrastructure centralization and consolidation to data centers, has enabled handling huge volumes of interactions. This new platform, which meets all multimedia capturing, streaming and archiving needs, offers the following benefits:

- Reduction in number of servers, eliminating the need to deploy many different components
- Low network traffic and minimal dependency on network connectivity between numerous components, such as from the Logger to Storage Center
- Simplified solution deployment, maintenance, and licensing
- Simplified redundancy
- Increased solution robustness

Moreover, NICE Engage Platform now natively supports SQL Server 2012, Windows Server 2012, and Crystal Reports 2013.

## Advanced Interaction Recorder

The NICE Advanced Interaction Recorder is a modern recording platform for real-time VoIP capturing and recording. Its architecture is fully optimized for capturing and recording large volumes of IP streams. The NICE Advanced Interaction Recorder can support thousands of concurrent IP streams: capturing, forwarding streams in real-time, recording and archiving.

The NICE Advanced Interaction Recorder directly stores captured sessions in a file format ready for long-term archiving. It is designed in a way that can fully utilize the hosting server's power: CPU, memory and disk space. With the accelerated evolution of server hardware, the platform can exploit any additional power in future generations of servers to support higher capacity — only bound by the physical underlying hardware.

With its advanced real-time capabilities, the NICE Advanced Interaction Recorder enables the next generation of real-time applications that provide enterprises with real-time impact, including NICE Real-time Speech Analytics and NICE Real-time Authentication.

NICE Engage Platform provides a vastly simplified interface for integrating switches with Advanced Interaction Recorders, containing the following features for flexible management:

- **Licensing Manager:** Allows for management in and across sites, with no Recorder configuration required at start time or during channel capacity expansion
- **System Mapping:** Simple recording configuration with moving, adding and changing configuration on the fly, from a centralized location
- **Maintenance Mode:** Graceful recorder shut down for maintenance or security updates while supporting recording continuity

This overview describes NICE Engage and the benefits organizations can gain from implementing its advanced capabilities.

## NICE Engage Highlights

- **Advanced interaction recording:** All-in-one recording server for voice, screen, archiving and streaming
- **Unprecedented recording scalability:** Up to 5,000 channels per server
- **High-scale real-time streaming** for unlimited applications and processes
- **Next generation business continuity** with high availability and lightning speed disaster recovery
- **High dependability** to satisfy business and regulatory requirements
- A foundation for **100% real-time** solutions, including NICE's Real-Time Authentication, Real-Time Fraud Prevention and Real-Time Speech Analytics
- Advanced **Interaction Analytics**, making analytics insights accessible faster to a wider, and to all relevant stakeholders in the organization

### Interaction Recording

- Multi-channels capturing including audio, desktop screen and text messages
- Low TCO– centralized capabilities, open architecture, support for multi-sites, data centers and branches
- Compliance with latest industry information security standards and regulations (including PCI-DSS 3.0, Dodd-Frank, MiFID, HIPAA and FIPS 140-2) through data protection, retention, scenario reconstruction, compliance adherence and business continuity capabilities
- Support for all types of recording needs– total, selective, QM and on demand recording
- Comprehensive VoIP solution portfolio including Active VoIP and SIP-based recording
- Multi-tier secured architecture with built-in scalability for growing capacity needs
- Support for server and client Virtualization solutions
- Resiliency and redundancy of all main system components
- Support for multi data center consolidation and centralization

### Interaction Analytics

- Integrated cross-channel analysis of voice, web, email, chat and survey interactions
- Automatic view into customers' hot topics to understand what customers talk about
- Real-time speech analytics to identify meaningful events and trigger alerts and guidance while the call is taking place
- Automatic root cause analysis using speech, call flow, customer feedback, screen content, text and data mining analytics
- One-Click insights using Insight Amplifier providing analytical insights to a wider audience, allowing users to easily uncover root cause and drill down for deeper insights

**Performance Management**

- Closed-loop performance management
- Data integration from disparate sources, providing personalized dashboards to every employee
- Incentive management, ensuring employees are compensated based on performance and in alignment with business strategy

**Quality Management**

- Automated, business-driven Quality Optimization solution with pre-defined KPIs
- Advanced query capabilities leveraging NICE's multi-dimensional analytics
- Unified portal for agents, supervisors and manager with scorecards, dashboards and trends
- Centralized Data Mart and reporting
- Automatically distribute relevant interactions to evaluators for easy, efficient evaluations.

**Real-time authentication and fraud detection**

- Real-Time streaming of the interaction with no delays
- Real-Time agent guidance for Authentication and Fraud detection
- Seamless passive enrollment of historical and on-going calls with security layers

## Interaction Recording and Infrastructure

Hundreds of organizations across the globe rely daily on NICE Engage to meet regulatory requirements and support business goals. Whether they need to capture every interaction for compliance or record a random sample for quality improvement, NICE Engage provides a reliable and resilient compliance recording solution enabling contact centers, trading floors and back offices to document multi-channel data, mitigate risk, and analyze information to gain business insight.

Interaction recording is fully unified with the rest of NICE Engage capabilities such as Interaction Analytics, Quality Management and Compliance adherence. This enhances the organization's ability to gain significant value by optimizing operational processes and generating customer insights.

### Key Benefits

- Capture 100% of customer interactions on all media types
- Satisfy regulatory requirements (PCI, HIPAA, Dodd-Frank Act)
- Minimize exposure to costly disputes and claims
- Maintain audit trail of verbal commitments
- Prevent discrepancy and errors
- Detect and prevent fraud

### Interaction Recording Highlights:

- Multi-channel recording including Audio, Video, Screen and text base communications
- Support for SIP, VoIP, TDM and hybrid telephony environments
- Flexible recording and archiving rules
- Scalable architecture for adapting to interaction recording capacity needs
- Branch office and home-based agent options
- Comprehensive redundancy and disaster recovery solutions to ensure high availability
- Transparent access to recordings from any location
- Data security through end-to-end media encryption, authentication and server hardening
- Screen recording options for bandwidth optimization, NAT/PAT, terminal server and home-based agent environments
- Open architecture

## Enterprise Grade Recording Solutions

NICE Engage offers a reliable and resilient interaction recording solution, providing the capability to capture, store and maintain customer interactions occurring in the organization such as telephone conversations and screen activity.

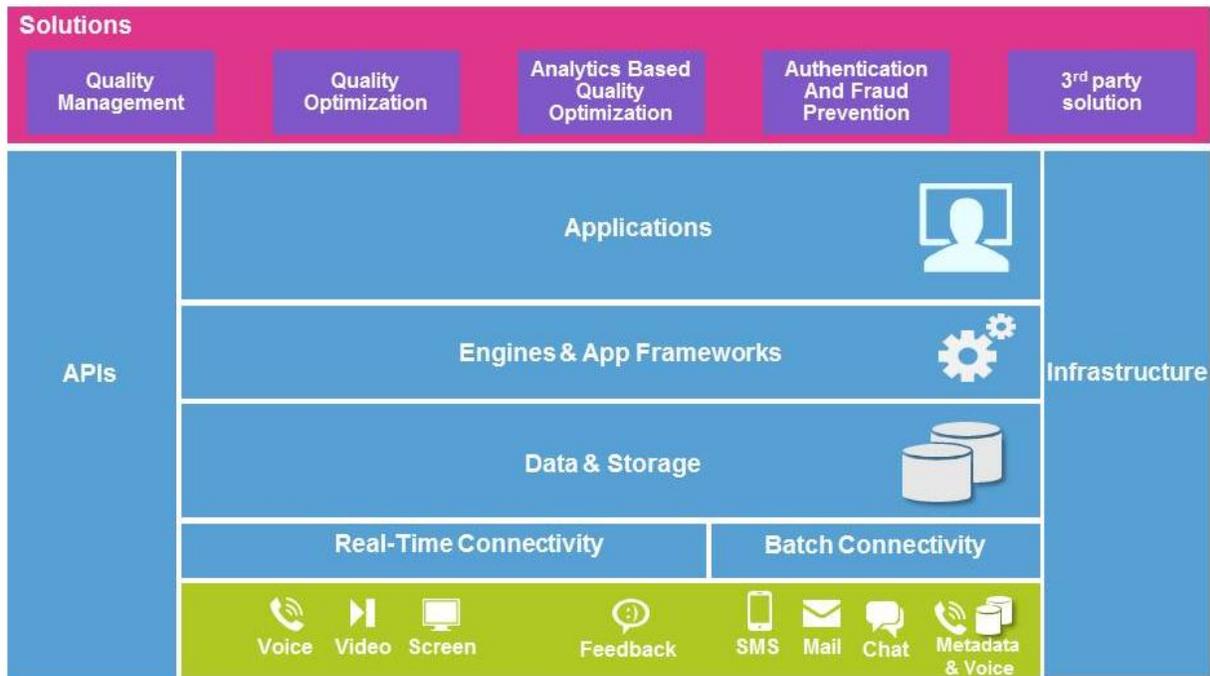
Interaction recording is available for TDM, VoIP, SIP and hybrid environments, and addresses any type of recording need, including:

- Compliance (Total) recording– all calls recording for compliance, risk management and dispute management purposes.
- Selective (Interaction-Based) recording– rule-based recording, using CTI parameters and business data information to selectively determine which interactions will be recorded.
- QM recording– automated random call sampling for quality evaluation purposes.
- Recording on Demand– manually initiated recording by agent or supervisor to address needs such as sales verification or recording of malicious calls.
- Trigger-based recording automatically initiated by agent activity on his desktop.

## NICE Engage Blueprint

The diagram below describes the NICE Engage Platform multi-tier architecture.

- Connectivity tier - Retrieves media, text, metadata and business data from external sources
- Data and Storage tier – Stores the media, metadata and applications data
- Engines and Apps Framework - Implements the business logic, middle tier between the data and the application tiers
- Applications – Implements the interaction with end users
- Infrastructure – Building blocks that are used by all tiers
- API's – Interfaces that connects the platform with external applications and allows extraction of data and media.



## Interaction Recoding Platform: Advanced Interaction Recorder - AIR

We have all come to enjoy the availability and immediacy of digital engagement channels — something that has been easy to get used to. It has raised the bar for customer service levels and centers. While simple issues are easily taken care of online, people want that same speed and efficiency for more complex issues, such as those that require the assistance of a customer service agent. All of this has placed a heavy burden on organizations to keep service levels as high as today's communication channels are fast. With the introduction of advanced real-time technologies, the time has come for organizations to combine the speed of the digital world with the expertise and human touch of its service reps. NOW is the time to turn your contact center into a real-time engagement center. Our new state-of-the-art recording – NICE Advanced Interaction Recorder (AIR), part of the NICE Engage Platform – delivers the industry's first real-time streaming solution. It enables the NOW customer experience with breakthrough high-scale recording and a lower TCO (Total Cost of Ownership).

The main capabilities of the Advanced Interaction Recorder Solution:

- **An all in-one-solution, including:**
  - Recording, archiving and streaming
  - Mixed recording types (VoIP, screen, video)
  - Multiple recording methods
  - Multiple switch integrations
  - Support for the combination of encrypted and non-encrypted media
  - Support for a mix of transcoded and non-transcoded audio recording
  - Support for a mix of summed and unsummed audio recording
- **Aligned with the latest IT standards, supporting true 64-bit operating systems.**
- **Unparalleled scale: Supports up to 5000 recording channels per server instance**
- **Improved business continuity:**
  - Intelligent dual recording: Record every interaction twice, archive once.
  - Recorders race conditions prevention mechanism – Better handling network disruptions
  - N+1 floating spare: failover with no need to failback
  - TCP Keep alive with improved system monitoring support
  - Faster failover with Avaya switch integrations (x20).
  - TRS (call metadata reconstruction during Interactions Center failure) support in a free-seating environment.
- **Real Time applications enabler:**
  - Low latency real-time streaming (less than 1 second delay)
  - Real-time streaming to multiple applications at once
  - High capacity – 100% real-time streaming

- **Flexible management:**
  - **Licensing Manager:** Allows for management in and across sites, with no recorder configuration required at start time or during channel capacity expansion.
  - **Recording Mapping:** Simple recording configuration from a centralized location, including moving, adding and changing existing configurations on the fly,.
  - **Maintenance Mode:** Graceful recorder shut down for maintenance or security updates while supporting recording continuity.

## **Voice over IP Recording**

NICE Engage enables recording in IP-based environments using a wide range of VoIP recording solutions including:

- **Active VoIP recording**– switch-level integration with IP telephony vendors
- **SIP trunk recording**– carrier-level integration in SIP-based environments

## **Passive VoIP Recording**

With Passive VoIP Recording, the Real Time Protocol (RTP) audio streams are passively “sniffed” along the IP path, using mirroring (SPAN) capabilities of the local area network switches.

NICE Engage supports passive VoIP integrations with all major IP telephony vendors including Avaya, Cisco, Genesys, MS Lync and Aspect and many more.

## **Active VoIP Recording**

Active VoIP recording enables centralized recording in distributed environments by sending a replica of captured audio from a gateway, conference bridge or IP-phone to the recording system using standard network routing. The system can reside in the data center and record calls in the organization's branches. Active recording flattens the organization and enables efficient handling of remote employees and home-based agents by eliminating the need for set-up, administration and management at branches or remote sites.

NICE Engage supports active VoIP recording integrations with all major IP telephony vendors including Avaya, Cisco, Genesys, Nortel, MS Lync ,Alcatel and more.

## **SIP Trunk Recording**

SIP (Session Initiation Protocol) is a service offered by many telephony service providers which connects a company's PBX to the existing telephony system infrastructure via Internet using the SIP VoIP standard. Companies adopting SIP can benefit from a low TCO by eliminating expensive PSTN trunks, reducing network infrastructure, simplifying administration, and facilitating future presence-enabled communications across multiple channels.

NICE Engage introduces an advanced solution for recording in SIP-based environments enabling customers to:

- Switch over to a fully SIP environment
- Save on PBX resources and licenses
- Reduce the related maintenance costs and dedicated IT staff

- Create a more flexible virtual environment (e.g.- remote/home-based agents)
- Build a centralized, open recording architecture

### **Session Border Controller (SBC) Integration**

SBC is an appliance device that provides critical control and security functions to deliver trusted, first-class interactive communications – voice, video and multimedia sessions – across IP network borders.

SBC integration provides several benefits to businesses, including:

- Low TCO- reducing the number of devices and interfaces involved in interaction capture and replication
- Decreased administration and maintenance complexity
- Increased scalability and reliability (e.g.- less CPU load and buffer utilization)
- Less dependency on the PBX vendor

NICE Engage enables integration with the leading SBC product offerings including ACME Packet, SONUS and AudioCodes and more.

NICE supports two SIP recording protocols

- NICE Active SIP Recording
- SIPREC – IETF standard

The solution is composed of the following components:

- SBC
  - Supports media forking (replication of the RTP stream for recording)
  - Sends a unique media identifier via the CTI and retrieves the correct metadata
  - With SIPREC: the SBC initiates the recording request to NICE and forks the media to the NICE VoIP logger
  - With NICE Active SIP Recording: the SBC forks the media following an invitation from the NICE VoIP Logger
- NICE Interactions Center and NICE VoIP Logger or the Advanced Interaction Recorder
  - Retrieves from the CTI source the unique identifier and, in some cases, the SBC address as well
  - With SIPREC: finds correlation between the SIP and the CTI based unique identifier
  - With NICE Active SIP Recording: invites the SBC to record and sends the unique identifier in the invitation
- PBX/CTI
  - Sends out the unique media identifier along with the metadata from the CTI

## Screen Recording

NICE Engage provides a comprehensive ability to capture screen data on agents' workstations. NICE Engage screen recording supports all Microsoft operating systems, optimizing the screen capturing capability for any customer environment without compromising on quality. Screen recording offers normal or advanced compression methods thus reducing network bandwidth load and storage capacity. It also supports Microsoft terminal-server environments as well as Citrix solutions.

NICE Engage screen recording solution offers multi-site screen archiving to centrally store and manage all screen captures. It supports a wide range of capturing options including selective recording, live monitoring and recording on demand.

The solution's scalability and modularity allow it to support a virtually unlimited number of workstations concurrently.

## Text Recording

NICE Engage enables recording and analyzing textual interactions with customers for compliance and quality management purposes. The platform supports the capturing and analyzing of textual communication channels such as emails, instant messages and text messages.

Traditional voice, screen, and text interactions are all captured and analyzed using the same platform, and the user is provided with a similar user experience across all communication channels.



The platform provides an infrastructure for recording, archiving, querying, viewing and analyzing text interactions. An open architecture is maintained to enable quick integration with new enterprise messaging servers for example Microsoft Exchange, Microsoft OCS IM, etc.

The solution is robust and supports all existing enterprise grade capabilities of the NICE Engage platform, such as alarming and monitoring, resiliency and business continuity, encryption and easy configuration.

## **TDM Recording**

NICE Engage provides comprehensive interaction recording capabilities in TDM environments and supports integrations with all major telephony vendors. TDM capturing provides the full range of recording options including compliance, interaction-based, QM, trigger base recording and recording-on-demand. Interaction capturing is done either via trunk-side or extension-side recording methods.

NICE Engage TDM recording offers several unique capabilities, including:

- Selective recording capabilities
- Trunk-Observation recording in specific telephony environments
- Trunk density– cost effective solution for selective recording environments, with 48 trunks per capturing unit
- N+1 redundancy for continuous recording

## **Enterprise Management (Multi-site)**

NICE Engage allows central, cost-effective management of multi-site environments. By enabling central user administration, reporting, playback and querying, organizations can better control resources, enforce policies and enhance security.

NICE Engage enterprise management capabilities include:

- Central resource management– all resources can be managed from any location
- Central user administration (including Microsoft Active Directory integration)
- Central Data Mart– a single, unified data source for reporting and data access
- Central rules definition
- Enterprise-level querying and reporting of all data including remote sites
- Playback and evaluation of interactions from any site in the organization

NICE Engage supports different multi-site configurations depending on customer needs and resources. NICE multi-site solutions scale up to a virtually unlimited number of sites. They support hosted or networked sites and mixed PBX environments.

## Enterprise Scalability

Companies with thousands or even tens of thousands of employees located around the world encounter a real challenge when designing their data center and IT architecture. A key consideration is that the infrastructure must serve the entire organization no matter how large, while accommodating future company growth and staffing changes in different sites. As a result, it is essential to use solutions that are highly scalable.

NICE Engage is designed to support organizations of all sizes and at different locations, and suits all types of customer environments including:

- Multi-site environments where multiple large data centers operate independently
- Consolidated organizations with a single data center
- Hub-and-spoke with a single data center supporting different locations such as branches

NICE Engage scales up to support business growth and organizational changes such as:

- More sites– support for virtually unlimited number of sites
- More agents and users– support for over 80,000 agents
- Enhanced recording needs– support for more than 120,000 recording channels
- Extended storage requirements
- Higher call rate needs
- Larger number of simultaneous playbacks

## Business Continuity

Changes in the political and social climate, the increasing threat of natural disasters and the need for 24/7 service delivery lead organizations to formulate a sustainable and cost effective business continuity plan. Businesses must ensure that critical functions are always available as interruptions can cause severe financial or even physical losses.

NICE Engage provides business continuity across the organization for:

- Different telephony redundancy schemes
- Recording platforms
- Databases
- Application servers
- Remote sites and branches

## High Availability

NICE Engage provides capabilities to protect the entire system or individual segments, and to continue operating in case of failure or disaster. It does this by enabling the system to continue recording calls, maintaining querying capabilities and protecting stored information.

NICE Engage enables continuous recording even if a capture unit fails, supporting:

- N+1 server chains to allow for failover and recording continuity in a cost-effective manner
- 1:1 solution for full redundancy and zero audio loss
- Pool of recorders to enable next call recording continuity
- Server clustering
- TRS solution to ensure call metadata is added to the database in case of CTI failure

## Multi Data Centers

With the move to centralized Data Centers, there is an increased need for a solution that will ensure that the newly centralized Data Center supports the business continuity needs of the organization.

NICE Engage solution for Multiple Data Center environments offers the enterprise a low total cost of ownership (TCO) by supporting centralization initiatives and serving the entire enterprise in a single platform. Moreover, the solution supports the business continuity needs of the enterprise.

The Multi Data Centers solution includes:

- **Centralization**  
NICE Engage allows organizations to have their entire system in a central Data Center and to use advanced Active and Passive recording solutions. Moreover, the system enables an unmatched scale, allowing a single system to serve the entire enterprise. This is achieved by using Logger Teaming. Logger Teaming enables centralized Passive Recording in the Active-Active Multiple Data Center environment. In this environment, at any time, calls may be routed to either Data Center. By teaming two Loggers located at different Data Centers into one virtual Logger entity, the physical Loggers in both Data Centers attempt to record the media at all times. Depending on through which gateway the audio passes, the Logger that is receiving the RTP will record the call.

- **Alignment with Third-Party Telephony Vendors**

NICE Engage is aligned with resiliency mechanisms of industry leading telephony vendors such as Cisco and Avaya. In case of a failover in one of these telephony environments, NICE Engage will continue to provide its full capabilities with the redundant telephony infrastructure.

- **No Single Point of Failure**

NICE Engage offers local and inter-site resiliency for all NICE Engage Release 4.1 components. Some of those components can be deployed in a multi-site clustering approach (a.k.a. geo cluster) to support redundancy across Data Centers without the need to duplicate components in a single Data Center.

- **N+1 Across Data Centers**

In the Active-Active Multiple Data Center environment with one switch that is configured for Active Total Recording, N+1 Across Data Centers provides the optimal resiliency solution. In this environment, each Logger installed at Active Data Center #1 has a spare twin installed at Active Data Center #2. On a clear day, the Logger installed at Active Data Center #1 records all of the calls from both Data Centers. If a failure occurs, the Logger configured at Active Data Center #2 takes over and records for both Data Centers.

- **End-to-End Disaster Recovery**

NICE Engage supports end-to-end disaster recovery that is easy to deploy and use. With the NICE High Availability Manager, a standalone application for Multiple Data Center environments, IT professionals can perform the failover of the entire Data Center with a single click.

## **Remote Site Survivability**

NICE Engage offers enhanced capabilities to deal with network failures in branch or remote site environments when both the capture units and Interactions Center servers are located in the branches. The NICE Engage Interactions Center is designed to retain an extended amount of CTI data during WAN failures. Once the remote location regains network connectivity with the data center, the Interactions Center transfers the CTI data to the central database, significantly reducing the risk of losing information.

## Storage Management

NICE Engage offers a comprehensive solution for the varied storage needs of different business environments. The Engage archiving capabilities fully integrates with the company’s environment, uses existing storage resources and protects investments in storage infrastructure. NICE Engage provides organizations a centralized solution for storing recordings on an enterprise infrastructure for long-term archiving. It integrates with a wide range of enterprise storage solutions including:

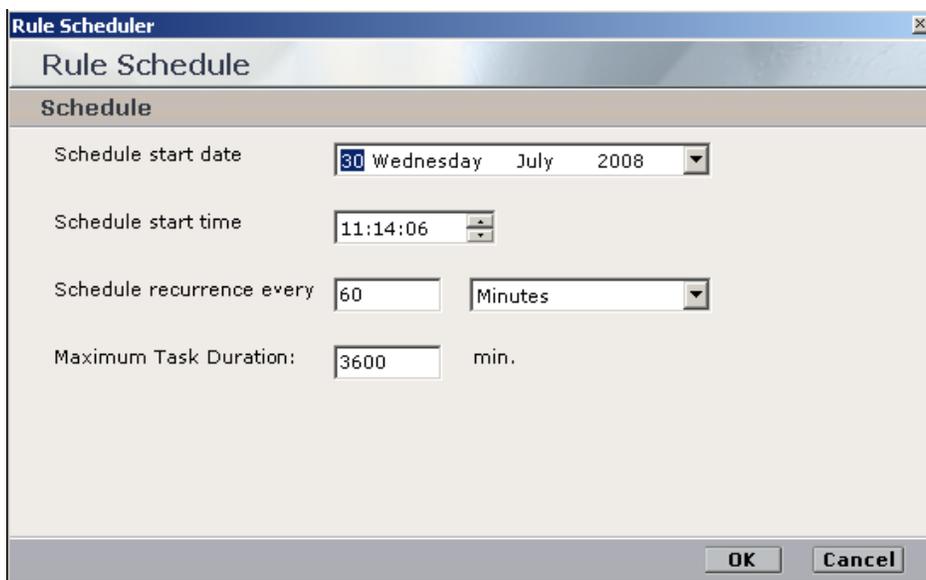
- EMC Centera and Celler
- IBM Tivoli Storage Manager (TSM)
- Hitachi
- NetApp
- NAS/SAN devices supporting CIFS or NFS protocols (virtually all storage devices)

NICE Engage allows central definition of storage rules and enables quick retrieval and playback. Selective archiving and selective retention capabilities enable archiving optimization according to business policy requirements.

### Storage Rules

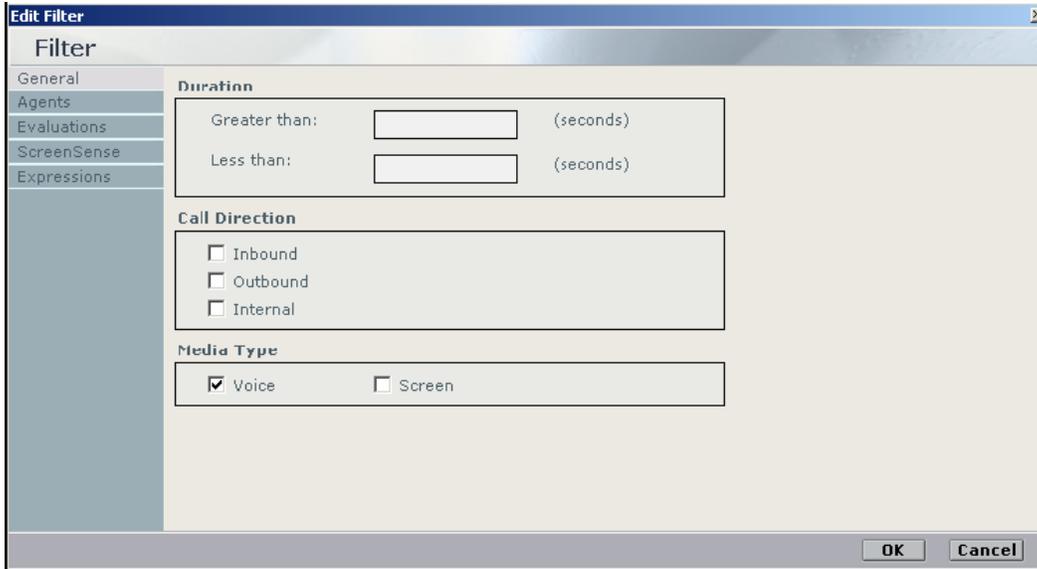
Storage rules allow the system administrator to define exactly when, what, where and how to archive:

- Defining when the archiving will take place and the maximum task duration, to allow control of bandwidth resources.



**Figure 1: Archiving Schedule**

- Defining exactly which interactions should be archived, providing precise interaction selection via smart filters such as call duration, direction, and media type.



**Figure 2: Archiving Filters**

- Defining where the interactions are to be archived, whether it is on a local directory, a NAS/SAN device or an ESM/CAS device.
- Defining how to archive by assigning retention for each interaction, setting the naming conventions, and deciding whether or not to use a third-party archiving.
- In order to reduce manual errors, when a recording match more than one rule then the longest retention rule will be chosen.
- Allowing to extend retention for existing archived recording

## Security

### Multi-Tier Architecture

NICE Engage is designed around three security zones, each containing specific operational elements of the solution. This multi-tier architecture approach allows the segregation of data and functional elements into controlled-access zones.

- Tier 1– Untrusted Zone: Contains the client workstations and communication points outside of the network such as the Internet. Entities in Tier 1 may only communicate with Tier 2.
- Tier 2- Demilitarized Zone (DMZ): Entities in the DMZ include the NICE Engage applications and Web server that provide connectivity for clients located in Tier 1 and any external networks. Tier 2 serves as an intermediary for information and service requests between the clients in Tier 1 and the system resources of Tier 3.
- Tier 3– Trusted Zone: Houses the system’s databases and capture units. Direct access is not allowed between the clients in Tier 1 and the resources in Tier 3 making it extremely difficult to circumvent security access controls.

### Information Security

NICE Engage takes a comprehensive approach to information security, ensuring that sensitive data is protected and unauthorized parties cannot compromise system integrity. Key security features include:

- Data Encryption– NICE Engage provides an end-to-end media encryption approach protecting information during every stage of its lifecycle: capture, use, transmission and storage. It uses 256 bit Advanced Encryption Standard (AES) symmetric encryption, the most efficient and secure algorithm for large amounts of information.
- User Authentication– NICE Engage authenticates user identity with a username and password combination. Passwords are encrypted using an industry-standard 256 bit Secure Hash Algorithm (SHA).
- Passwords are sent over the network only in encrypted format preventing use of network sniffers or monitors to intercept them. An additional level of security is provided through a Challenge Handshake Authorization Protocol (CHAP) during the authorization process.

### Audit Trail

NICE Engage provides a comprehensive, detailed audit trail solution that is designed to meet IT and regulatory needs. Audit Trail enables organizations to verify and demonstrate adherence to security policies and compliance imperatives by providing a complete solution encompassing all data and all applications contained in NICE Engage.

These are some of the main capabilities delivered by the NICE Engage Audit Trail:

- Every function performed by every user is logged and time stamped
- Advanced Query application allows complete analysis of "who did what and when"
- Data is automatically generated and stored in a secured database (not text/log files)
- Data can be filtered by date, user, category, action and more

| Audit Trail                                 |                 |                                                                                                                     |                        |                                               |  |
|---------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------------------|--|
| Query: Last Week                            |                 | <input type="button" value="Help"/> <input type="button" value="Print"/> <input type="button" value="Preferences"/> |                        |                                               |  |
| Group By: <input type="text" value="None"/> |                 | 50 Messages shown <input type="button" value="Refresh"/>                                                            |                        |                                               |  |
| Type                                        | Name            | Audit Message Time ▼                                                                                                | Message Title          | Audit Mes                                     |  |
| <input checked="" type="checkbox"/>         | Wayne Hank      | 06/05/03 09:40:59AM                                                                                                 | User Login             | User Wayne Hank Logged in                     |  |
| <input checked="" type="checkbox"/>         | Jordan Ted      | 06/06/03 09:44:08AM                                                                                                 | Start segment playback | user Jordan Ted starts playback of segment I  |  |
| <input checked="" type="checkbox"/>         | Stanfield Vicki | 06/06/03 10:44:08AM                                                                                                 | User login failed      | User Stanfield Vicki Failed login attempt     |  |
| <input checked="" type="checkbox"/>         | Stanfield Vicki | 06/06/03 11:44:08AM                                                                                                 | User Login             | User Stanfield Vicki Logged in                |  |
| <input checked="" type="checkbox"/>         | Williams Tony   | 06/07/03 01:00:35PM                                                                                                 | Start segment playback | user Williams Tony starts playback of segmer  |  |
| <input checked="" type="checkbox"/>         | Selph Roger     | 06/07/03 01:08:54PM                                                                                                 | Start segment playback | user Selph Rojer starts playback of segment I |  |
| <input checked="" type="checkbox"/>         | Jordan Ted      | 06/07/03 02:04:44PM                                                                                                 | User Logout            | User Jordan Ted Logged out                    |  |
| <input checked="" type="checkbox"/>         | Handerson Gail  | 06/07/03 02:12:42PM                                                                                                 | Start segment playback | user Handerson Gail starts playback of segm   |  |
| <input checked="" type="checkbox"/>         | Harold Deborah  | 06/07/03 03:09:46PM                                                                                                 | New evaluation         | User Harold Deborah created new ag            |  |
| <input checked="" type="checkbox"/>         | Jordan Ted      | 06/07/03 04:26:18PM                                                                                                 | Start segment playback | user Jordan Ted starts playback of segment I  |  |

**Figure 3: Audit Trail**

## Updates and Patches

NICE Engage is certified with the latest security updates, patches and virus definitions:

- Proactive certification of the NICE Engage servers and applications with leading anti-virus vendors including Symantec, McAfee and Trend Micro.
- Expedited certification of Microsoft security updates.
- Server hardening.

## Microsoft Active Directory Integration and Single Sign-on

NICE Engage supports Active Directory, the industry’s most popular user authentication and maintenance standard, as well as single sign-on based on a user’s Windows username and password.

## Compliance with Payment Card Industry Data Security Standard (PCI-DSS)

The PCI-DSS standard sets security measures to help protect credit card holders. The standard includes requirements for security management, policies, procedures, network architecture, software design and other critical protective elements.

Using the above-mentioned security capabilities plus the capability to automatically pause and resume recording using Real-Time triggering to avoid recording of card holder data NICE Engage helps organizations in complying with the requirements of the PCI-DSS standard, including the need to:

- Build and maintain a secure network
- Protect cardholders data
- Maintain a vulnerability management program
- Implement strong access control measures
- Maintain an information security policy

## **Virtualization Support**

Companies increasingly look to reduce TCO and enhance IT flexibility. Virtualization is one option quickly gaining popularity. Companies can optimize their IT infrastructure by deploying virtual machines that operate safely and transparently across shared hardware. It enables organizations to consolidate servers and significantly reduce operating costs by minimizing necessary floor space, hardware power and cooling.

NICE allows organizations to reduce the amount of overall resources consumed by NICE Engage by supporting virtualization solutions from leading industry vendors. The combination of these solutions and NICE Engage minimizes the total number of servers and makes the IT center more environmentally friendly.

### **Server-Side Virtualization**

NICE Engage supports server virtualization solutions from VMware, Microsoft and Citrix. Organizations that capitalize on these solutions are better equipped to affect cost reduction across their organization and improve the overall efficiency and effectiveness of their business.

NICE Engage is fully aligned with the latest versions of all 3 server virtualization vendors.

### **Client-Side Virtualization**

A Virtual Desktop Infrastructure (VDI) supports the hosting of multiple operating systems and applications used in remote locations allowing for physical and geographical independence. Ideal for home-based agents or remote offices, VDI allows a desktop to be centralized while still providing a typical desktop experience. VDI significantly reduces hardware and maintenance costs as the hardware installed at the agent site is significantly cheaper than using a standard PC or installing a server on-site.

NICE Engage supports VMware VDI, an integrated desktop virtualization solution that delivers enterprise-class control and manageability with a familiar user experience. VMware VDI securely connects users to virtual desktops in the data center and provides a simple to use Web-based interface to manage the centralized environment.

### **Thin Clients**

NICE supports Citrix and Terminal Server environments, enabling companies to centrally manage NICE Engage and record interactions in remote contact centers and home-based agents that are located in thin client environments.

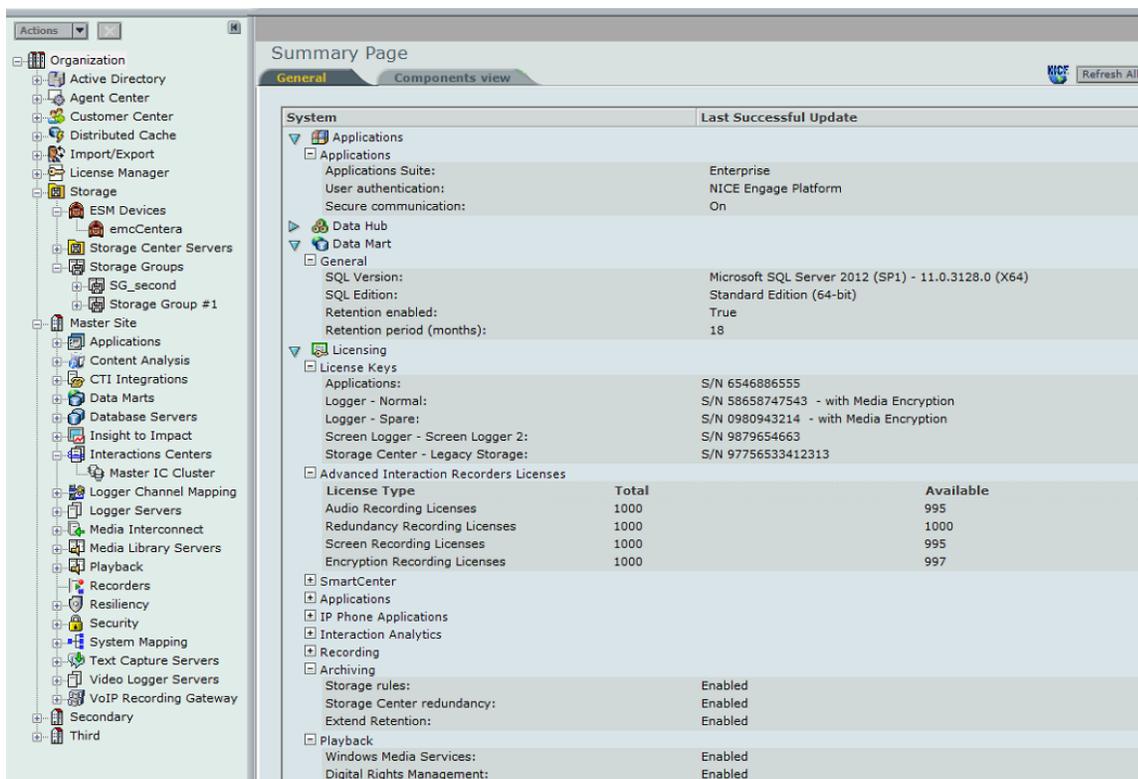
## **Operating Systems and SQL Server 2012**

NICE Engage Platform enables the use of Microsoft Windows Server 2012 and Microsoft SQL Server 2012 across the board making sure to keep pace with the industry standards

## System Usability, Maintenance and Administration

NICE continuously focuses on enhancing customer satisfaction from its products and services. NICE Engage includes various tools that ensure ease of installation and maintenance. For example:

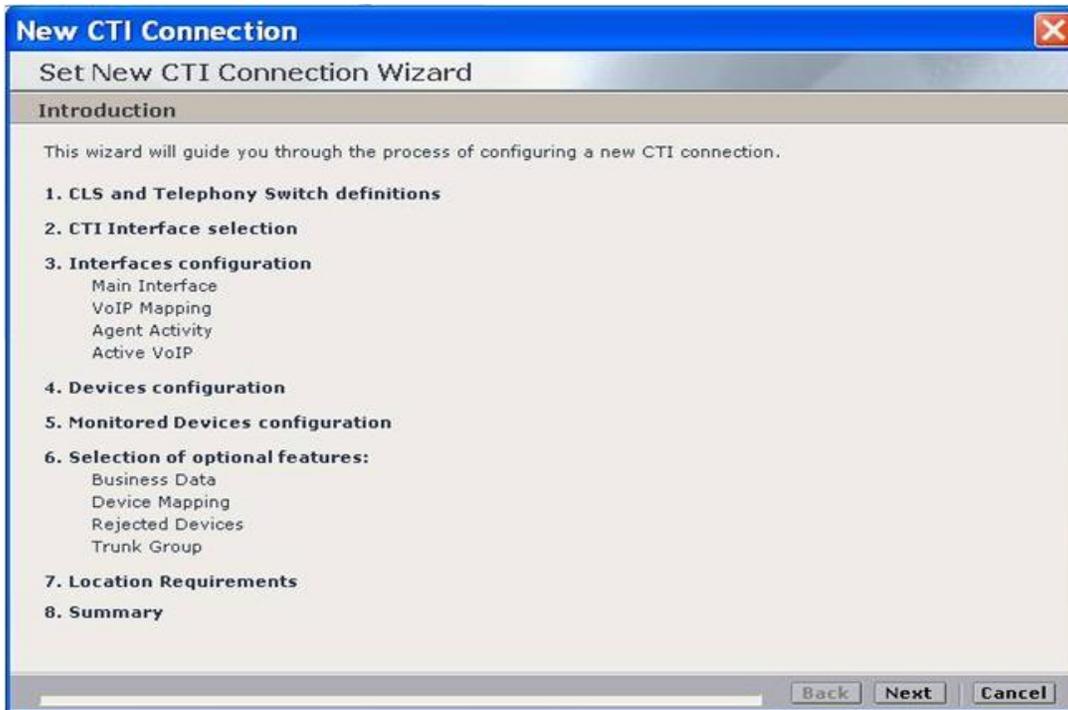
- **Monitoring** – NICE Engage provides a simple, easy-to-use monitoring tool – the Sentinel that collects information from different data sources and provides clear alarms and system’s health view.
- **Site summary page** – presents the system administrator with a complete overview of the installed system and its components and enables easier system management and troubleshooting. It provides information such as components installed per site, version numbers, installed updates and licensing information.



**Figure 4: Site Summary Page**

**Health check reports**– NICE Engage provides a set of useful health check reports to assist IT staff in monitoring if system is functioning properly. NICE Engage scans the system for malfunctions or potential issues and presents the collected data in alarming and in reports view.

**CTI Wizard**– allows convenient and swift configuration of an integration using a consistent and user-friendly flow.



**Figure 5: CTI connection Wizard**

**Setup Readiness Tool**– allows automatic verification of all NICE Engage installation prerequisites and network connectivity requirements. Customer IT can apply this user-friendly tool to servers and client workstations and run it to verify that servers meet the necessary software and hardware specification prior to the installation.

## **End-User Environment**

### **Web-based and .NET**

The NICE Engage solution is fully Web-based, which simplifies administration and eliminates the burden of mass software deployments on personal desktops.

In addition, NICE Engage is built on the Microsoft .Net framework which provides multiple benefits including open interfaces for future integrations, higher performance, enhanced security and a richer user experience.

### **Query**

The NICE Engage query application provides an easy-to-use tool for finding and playing interactions, whether for compliance, sales verification, agent evaluation or any other business case. NICE Engage allows users advanced query capabilities and visualization tools, providing users a wide range of query criteria and enabling them to perform any relevant activity on the search results.

### **Playback**

In line with the rest of its centralization capabilities, NICE Engage supports playback over WAN, which streamlines operations and greatly facilitates the work of remote agents and home-based agents.

Playback of recorded interactions can be done either by using NICE's streaming solution or the Microsoft streaming server.



## Quality Management

The contact center's ability to deliver a consistently satisfying experience depends on effective quality management.

NICE Engage delivers comprehensive capabilities needed for implementing a multi-faceted quality program that works for everyone— agents, supervisors, evaluators and managers.

Business-driven KPIs, powerful query capabilities and flexible recording rules let the organization track performance in real-time and evaluate relevant interactions to develop fair, accurate and empowering insight into agent performance. Automated scoring and graphic visualization highlight interactions that reveal the urgent issues and guide contact centers to the best practices for success.

NICE Patented Quality Planner automatically delivers the right interaction to the right evaluator for a quick point-and-click evaluation process.

### Key Benefits

- Bridge the gap between contact center processes and business initiatives
- Align QM workflows with business goals and KPIs
- Drive desirable behavior at agent, group and enterprise levels
- Provide tailored online coaching
- Improve evaluation team productivity and fairness

### Quality Management Highlights:

- Quality Planner to automatically distribute interactions to the right evaluators
- 24 out-of-the-box KPIs
- Agent coaching for prompt feedback and overall communication
- Integrated calibration tools for consistent evaluation scoring
- Location-free replay and evaluation to handle centralized and decentralized operations
- Automated scoring and visualization
- Wizard-driven form development to easily support all evaluation types
- Unified portal access to recordings, evaluations and coaching packages for agents
- Multi-tenancy support for businesses requiring data segregation (e.g. – outsourcers)

## Quality Optimization

Quality Optimization provides an automated business-driven QM solution that ties pre-defined business KPIs to the QM process enabling contact center management to monitor performance in real-time, review the most relevant interactions and take corrective actions, all from an intuitive dashboard.

### Overview

Quality Optimization automates the QM workflow through:

- **Problem identification**– categorizes calls according to their content and associates them with pre-defined KPIs. Once a KPI target is breached, the system automatically notifies the relevant personnel and escalates the interactions for further investigation.
- **Root cause analysis**– enables users to drill down and understand the issue's root cause. The solution correlates between interaction types and agent performance allowing for quick identification of agents and groups who contributed to the KPI breach.
- **Corrective actions**– enables creation of targeted coaching and action packages.
- **Continuous monitoring**– presents clear metrics and automatic summary reports in order to continuously monitor the QM process.

Quality Optimization is offered in two modes:

#### Language-independent Quality Optimization

Designed for companies who are interested in enhancing their QM processes by pinpointing and solving critical business issues, as well as those that seek to integrate performance management capabilities into their QM and coaching processes.

It includes 24 most relevant contact center KPIs for topics such as coaching, CTI, interactions and customer feedback (see chapter 0); advanced root cause analysis capabilities; My Universe components with gauges, counters, and graphs; and drilldown and drill through capabilities.

#### Analytics-based Quality Optimization

Designed for organizations that look for a complete QM solution that NICE Engage's Interaction Analytics capabilities with advanced call categorization and root-cause analysis. In addition to the capabilities of the language-independent Quality Optimization, it includes an unlimited number of analytics-based KPIs (e.g. customer satisfaction, customer churn) utilizing NICE Interaction Analytics capabilities including speech, text, talk-pattern, emotion and root cause analysis modules.

### Quality Planner

Centralized end-to-end management of the QM processes

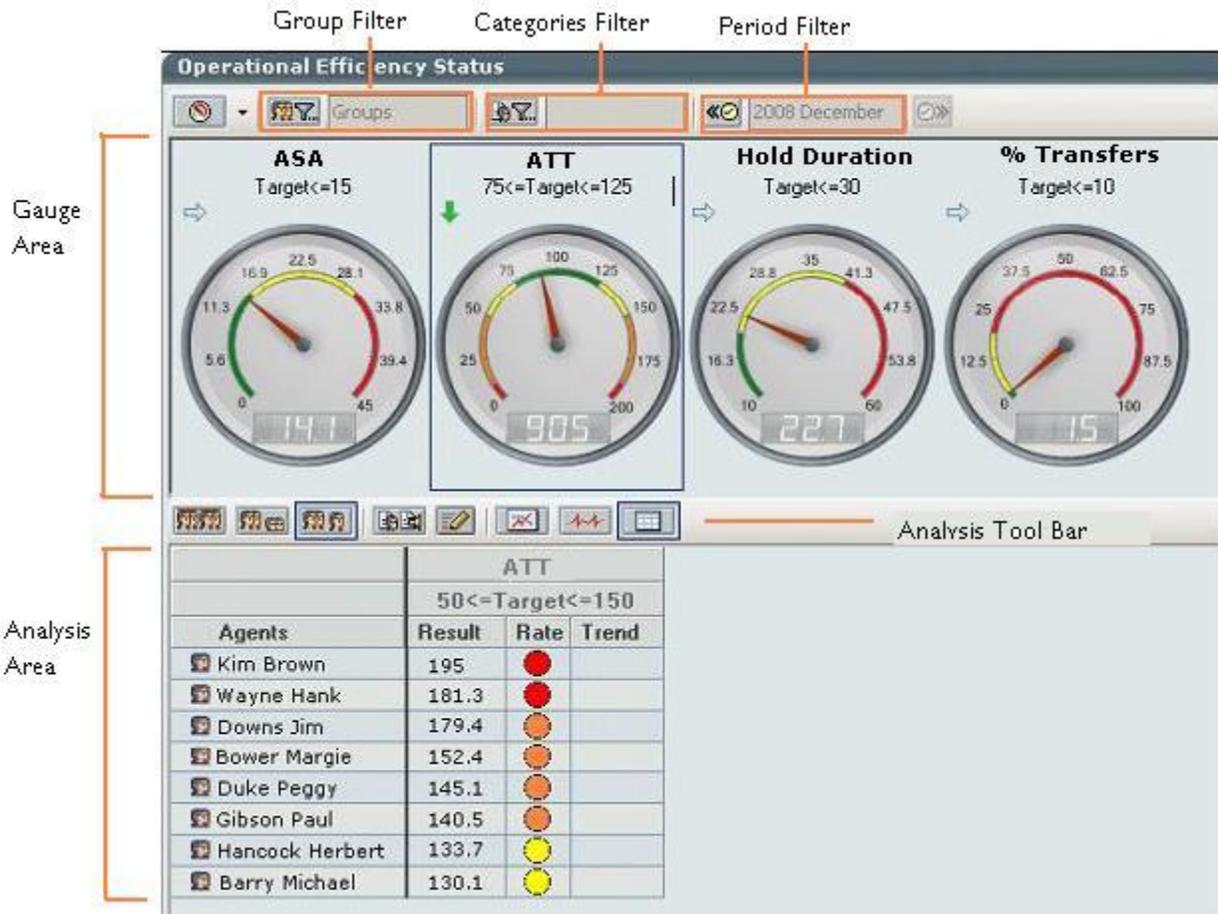
- New application for defining Quality Management Programs
  - Define evaluation quotas, evaluators and agents
  - Support randomized and targeted business driven quality tasks
- Workflow enabled quality plan execution - Push vs. Pull
- Dedicated My Universe components for complete tracking of the QM process in the organization
- Skill-Based plans that route the Agent calls to the best match evaluators based on defined Skills.

## Out-of-the-Box KPIs

KPIs can help organizations define critical, pre-defined success factors and measure the progress towards achieving these goals. Quality Optimization presents 24 out-of-the-box KPIs that enable supervisors, managers and analysts to monitor and track major organizational metrics in the following areas:

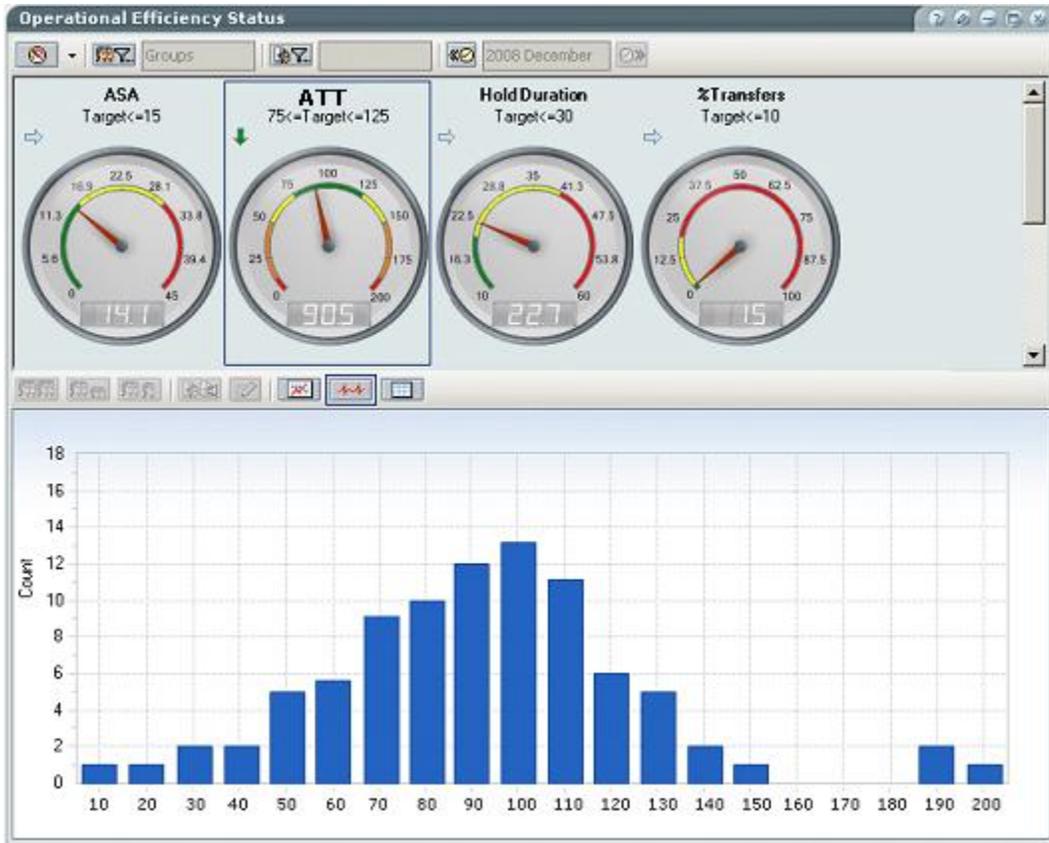
- QM and coaching KPIs such as:
  - Percentage of evaluations on interactions for QM
  - Average agent evaluation score
  - Average difference of scores between calibrations and evaluations
  - Percentage of completed coaching packages
- CTI-related KPIs such as:
  - Percentage of interactions abandoned during queue
  - Average talk time
  - Percentage of interactions that were transferred
  - Average hold time of interactions
- Interaction-related KPIs such as:
  - Number of interactions
  - Number of interactions with screen recording
- Customer feedback KPIs such as:
  - Average of overall customer satisfaction survey score

The screenshot below shows an example by presenting a manager's view of KPIs for average speed of answer (ASA), average talk time (ATT), hold duration and percentage of transfers. It also demonstrates the ability to analyze results per group or agent (ATT in the example below).



**Figure 6: KPI Component – Manager View**

Users can also perform further analysis by using the different analysis display modes such as a histogram (as in the example below), ranking tables and trends.



**Figure 7: KPI Analysis– Histogram View**

**QM Based Guidance**

To allow for a personalized guidance, Real Time Process Optimization offers guidance on the basis of the latest QM evaluation score, and consider that before exposing real time guidance callouts to the agents.

This new feature allows defining rules on the basis of forms, sections, and questions’ score, and allows controlling the content of the guidance presented to the agent in real time. In that fashion it balances the information presented to the agent and make sure that it is always relevant and helpful to guide the agent.

## Advanced Query

The NICE Engage advanced query tool enables users to run searches on all existing system elements and perform any relevant activity on the search results. The multi-dimensional approach and wide range of query criteria and visualization capabilities allow users to analyze the root of business issues quickly and efficiently.

Below are some of the elements that can be used for call searching:

- Speech analysis–
  - Keywords and phrases, including their location in the call and certainty level.
  - Emotion level of each party on the call.
  - Talk analysis– customer/agent bursts, number of bursts, talk-over percentage, silence percentage, agent talk percentage, customer talk percentage, etc.
- Screen events– any type of user operation, such as opening forms or applications or entering new data.
- Advanced call flow events– queue time, hung-up side, ring time, number of holds, number of transfers, actual wrap-up period and abandon from hold.
- Business data– such as user comments or business data inserted by the user.

Below is an example of an advanced query targeted at identifying customers at high risk of churning. By combining elements such as emotion, keywords, call flow events, screen events and customer feedback, managers can identify all calls that indicate a high risk of customer abandonment. The results allow users to further drill down and understand the root cause of the issues.

**Figure 8: Advanced Query Screen**

The following figures demonstrate how query results can be displayed in various manners and include:

- Related data such as evaluation score.
- An automatic score given by the system based on pre-defined rules.
- Relevant parameters such as call duration, start time and end time.

Table View | Graph View

Search for word or phrase:  Within Interactions:  Shown  All

Query: Call not evaluated

Group By:  106 Interactions

| Type | Agent Name      | Duration | Start Time           | End Time             | System Score | Evaluation Score |
|------|-----------------|----------|----------------------|----------------------|--------------|------------------|
|      | Jordan Ted      | 00:03:04 | 07/05/07 07:49:20 AM | 07/05/07 07:52:24 AM | 90           |                  |
|      | Jordan Ted      | 00:01:40 | 07/05/07 08:00:17 AM | 07/05/07 08:01:57 AM | 30           |                  |
|      | Temperley Janet | 00:01:44 | 07/05/07 08:00:38 AM | 07/05/07 08:02:22 AM | 40           | 60               |
|      | Wayne Hank      | 00:01:55 | 07/05/07 08:03:12 AM | 07/05/07 08:05:07 AM | 50           |                  |
|      | Jordan Ted      | 00:01:34 | 07/05/07 08:03:23 AM | 07/05/07 08:04:57 AM | 40           |                  |
|      | Stanfield Vicki | 00:01:11 | 07/05/07 08:04:14 AM | 07/05/07 08:05:25 AM | 20           |                  |
|      | Wave Jerry      | 00:00:59 | 07/05/07 08:04:56 AM | 07/05/07 08:05:55 AM | 90           | 87               |
|      | Williams Tony   | 00:00:51 | 07/05/07 08:05:24 AM | 07/05/07 08:06:15 AM | 90           |                  |
|      | Selph Roger     | 00:00:58 | 07/05/07 08:05:52 AM | 07/05/07 08:06:50 AM | 42           | 78               |

Figure 9: Query Results – Table View

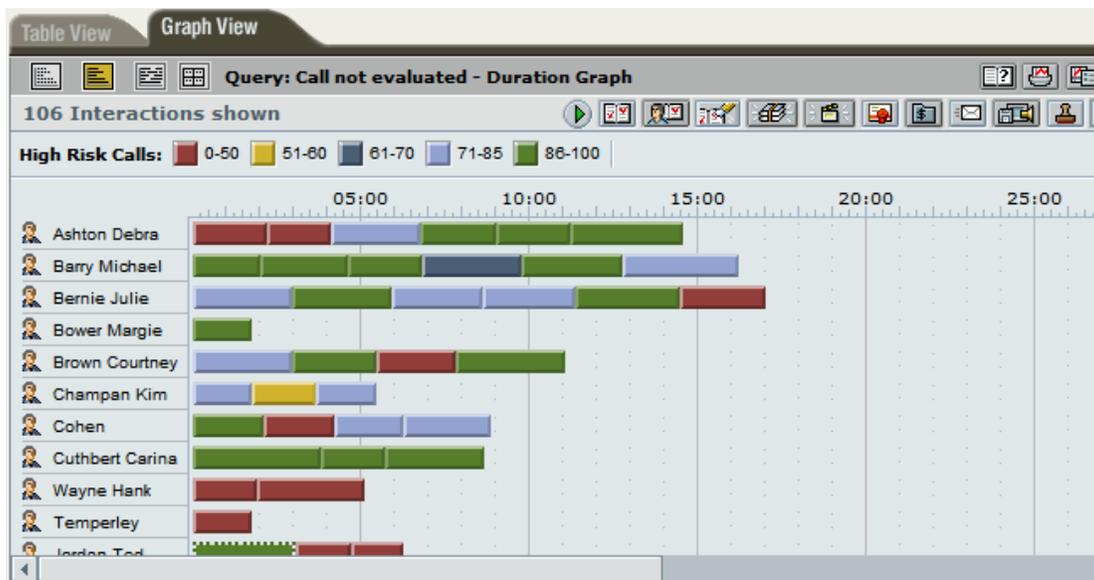
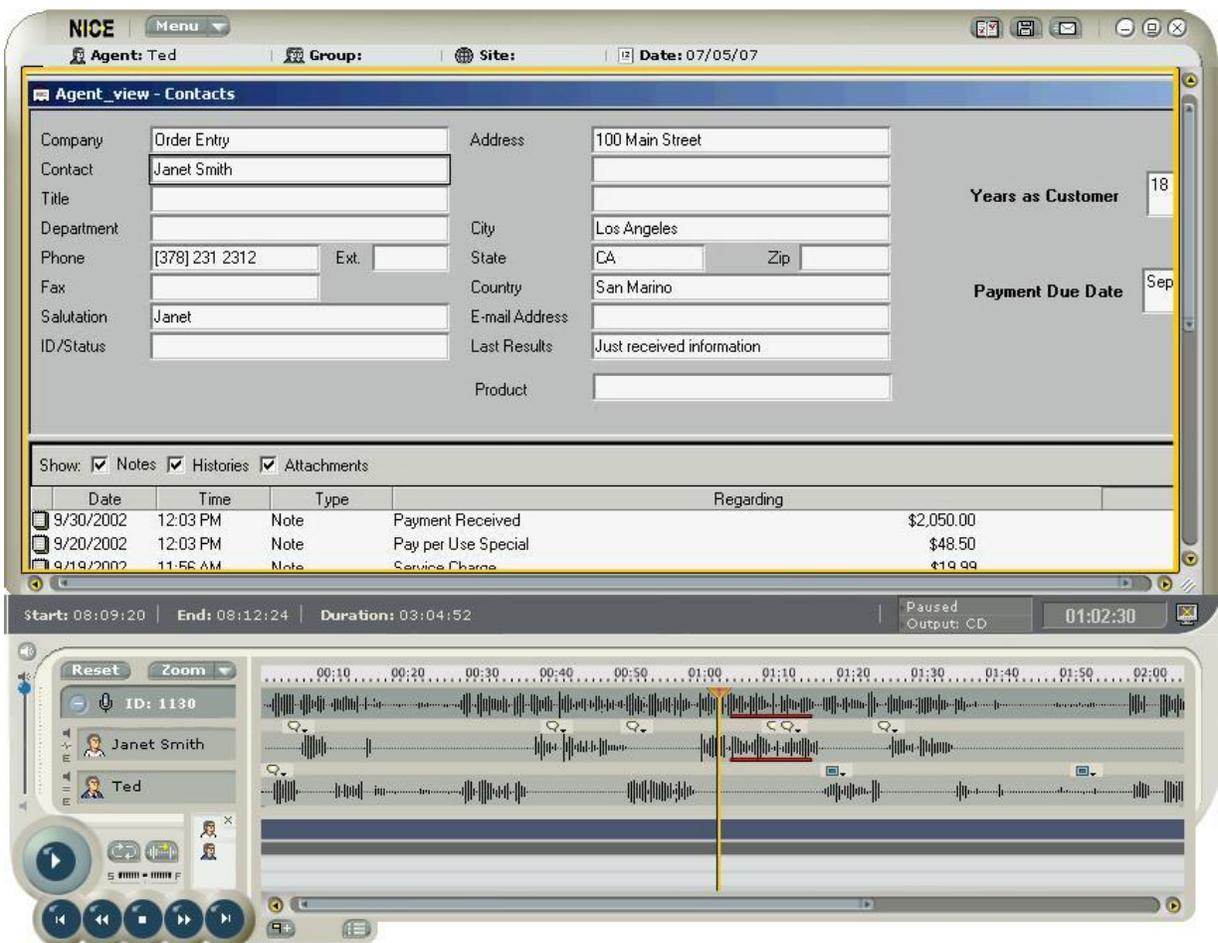


Figure 10: Query Results – Graphic View

## Playback

NICE Engage lets users play voice calls, video calls, text interactions and screen activity to facilitate a quick understanding of the call's highlights. The graphic presentation of the interaction in the playback window enables users to clearly see the main events of the interaction, including:

- Call flow– call split between the customer and agent enabled by NICE Engage's ability to provide speaker separation.
- Speech events– keywords and phrases in the conversation. By simply positioning the cursor over a specific call segment, a screen tip appears with the actual word used.
- Emotion levels- emotion levels of the customer or agent.
- Screen events- screen activity such as a new screen or application opened by the agent.
- Call transfers and holds.



**Figure 11: Interaction Playback**

## Agent Evaluation

Evaluating the 'live' performance of agents by reviewing captured interactions provides valuable insights into their strengths and weaknesses as well as contact center processes. These insights can be used to create employee-specific training plans and highlight strong and weak performance.

NICE Engage's precision monitoring approach enables supervisors and managers to focus on the most meaningful interactions which contain insights that provide the greatest business impact. Using NICE's multi-dimensional capabilities, precision monitoring allows pinpointing specific interactions that help address operational and business concerns such as agent knowledge gaps, process inefficiencies, adherence to script and sales best practices.

Direct access to related recording, coaching clip recording

**Good Health Evaluation form**

• Agent Name: Jordan Ted      • Call Type:

• Evaluator Name: Cohen Elizabeth      • Duration: 00:01:40

• Agent Review Date: \_\_\_\_\_      • Score: 74.3

**1. Greeting** 0

1.a. Said "Thank you for calling Good Health"?  Yes  No

1.b. Provided individual name?  Yes  No

**2. Security / Verification** 0

2.a. Obtained Caller's Name  Yes  No

2.b. Verified if the provider is a participating provider.  Yes  No

\*  Didn't obtain pertinent information (ie, SSN, policy number, etc.)

\*  Didn't verify the caller's relationship to the member.

**3. Etiquette** 20

Ratings 1- Poor 2- Minimally Acceptable 3- Average 4- Good 5- Excellent

3.a. Friendly and projected a smile

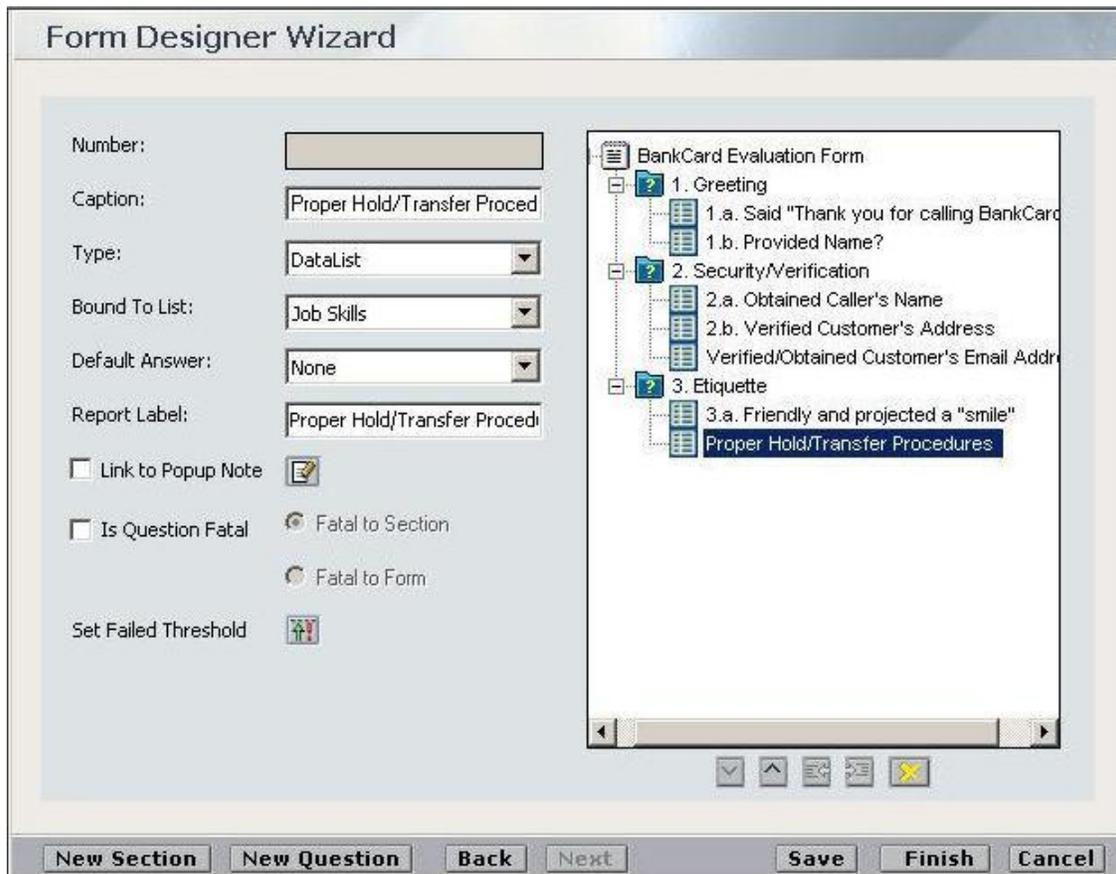
**Figure 12: Agent Evaluation Form**

## Form Designer

The NICE Engage Form Designer enables users to create new forms quickly via a simple wizard and a user-friendly graphical user interface (GUI).

The application includes a layout template that contains all editing definitions so users can create the visual attributes once and then apply them to any form. Once a layout is created, all that is required to create a form is to enter the required questions and build the scoring schema.

Users can add virtually any field including customized fields to a form. This includes information displayed while users evaluate a call (e.g. - DNIS number and hold duration). Forms can be easily changed, corrected or updated after they have been created. They are also dynamic, enabling users to define conditional section parameters so that sub-sections will be activated according to the selected answer to a specific question.



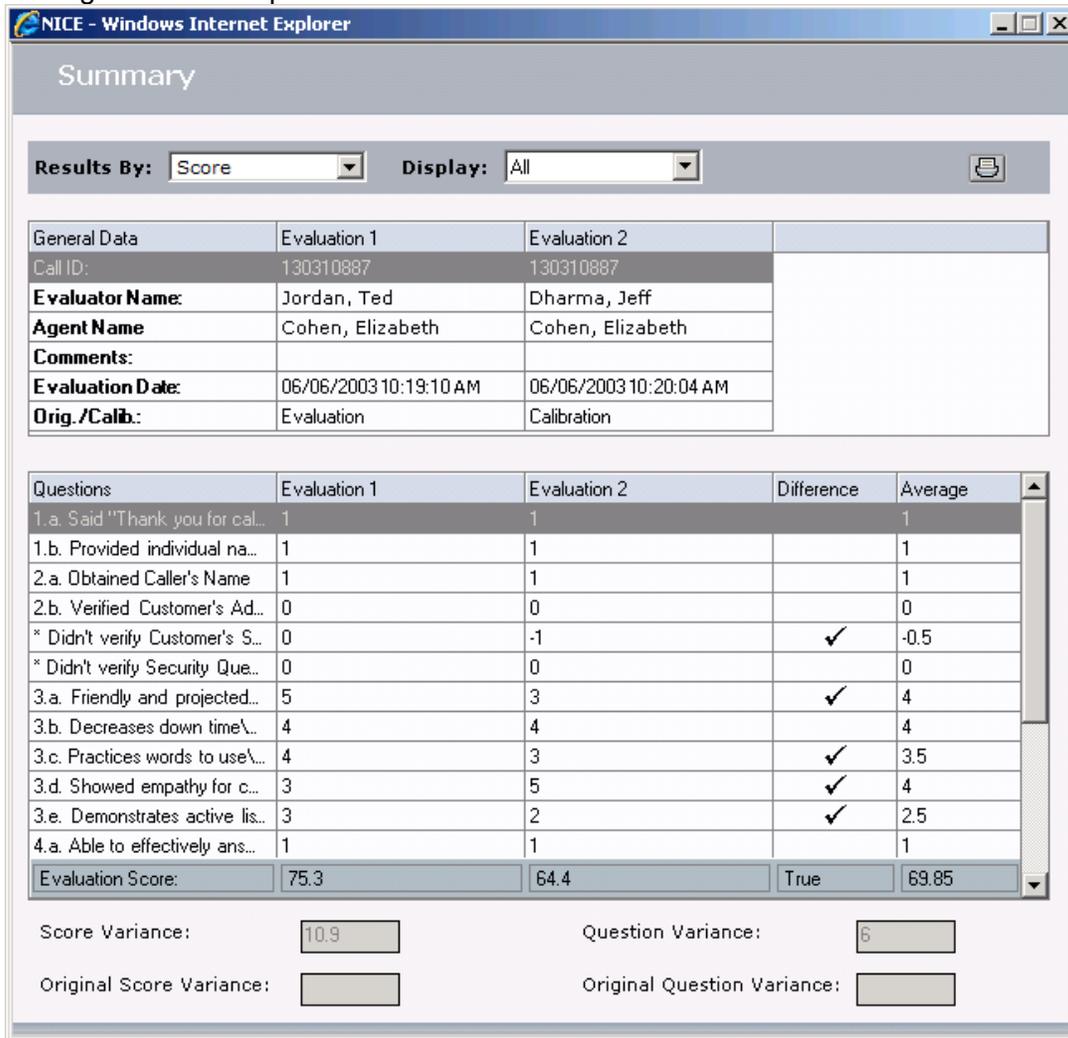
**Figure 13: Form Designer Wizard**

## Calibration

Calibration is used for creating a standard reference for assessment to ensure that evaluations are accurate and objective. When evaluators are calibrated, agents receive fair and accurate indicators of their success based on the organizational quality parameters.

NICE Engage integrates calibration into the quality process and provides easy-to-use tools for each step in the calibration process:

- Selecting the interaction for calibration– based on any of the query criteria (e.g. - interactions scored below or above a certain threshold) or interactions marked for calibration.
- Evaluating the interaction– each evaluator scores the chosen interaction using the evaluation form.
- Calibrating the interaction– once the evaluation phase is completed, evaluators and supervisors can meet to review the differences and align scores based on the organization’s criteria. The auto summary report greatly facilitates this task by providing detailed comparison between the evaluations.



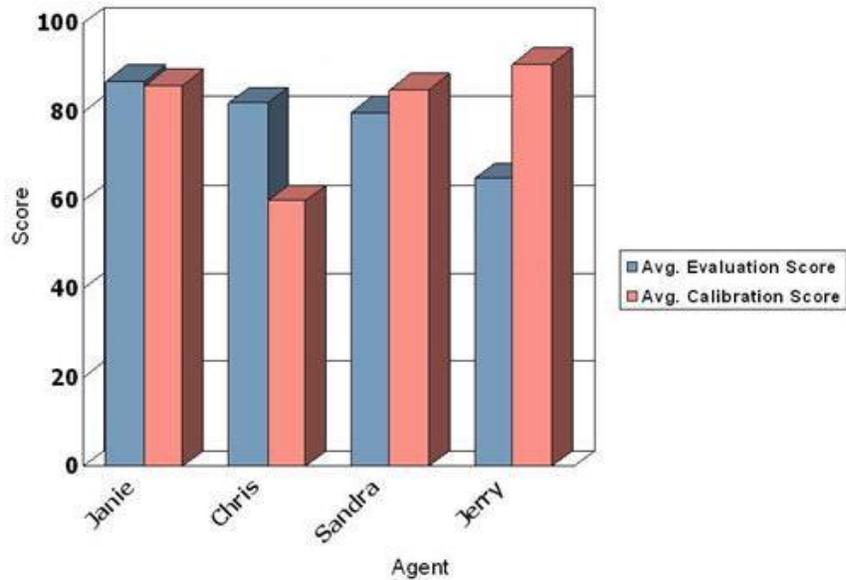
**Figure 14: Calibrating Interactions**

- Coaching the evaluators– managers can create dedicated coaching materials and share evaluation best practices with all evaluators to ensure that there is no disparity in measuring performance quality.
- Maintaining alignment– NICE Engage contains dedicated calibration reports to help managers ensure quality score alignment over time.

## Calibration Results

Report Period: 01/06/2009 - 01/07/2009

### Evaluations Score vs. Calibrations Score



**Figure 15: Calibration Results Report**

On top of the 'traditional' calibration process, NICE Engage empowers agents to self-evaluate their interactions. Agents can use calibration to compare their own score vis-à-vis the score given by supervisors or QA managers. This process helps identify gaps or disparities between the agents and their supervisor's evaluation.

## Coaching

NICE Engage is a valuable tool for QM managers, team leaders and trainers to create a closed-loop coaching process by developing training content and sending it to agents.

The solution allows for a wide scope of actions enabling trainers and managers to focus on key factors such as agent knowledge, customer satisfaction and operational processes. The NICE Engage Coaching solution can be used for actions such as:

- Providing targeted coaching materials to address agent knowledge gaps
- Delivering coaching packages to agents to notify on new policies
- Sharing examples of best practice calls with agents and groups

Coaching is fully integrated with the rest of the NICE Engage solution enabling creation of coaching packages directly from the interaction and linking related data such as the interaction itself, call evaluation, recorded clip, as well as any external file.

Users can be notified by Email when a Coaching Package is received.

The screenshot displays the 'Coaching Package' form in a web browser. The form includes the following elements:

- Attach:** A row of icons for attaching files, with a callout box pointing to them that says 'Insert related materials'.
- To:** A text input field with a 'From List...' button.
- Cc:** A text input field with a 'From List...' button.
- Action:** A dropdown menu set to 'Coaching Package' with a warning icon.
- Subject:** A dropdown menu set to 'Campaign'.
- Due Date:** A date input field with a calendar icon.
- Duration:** A text input field.
- Schedule Via TotalView:** A checkbox.
- Areas of strength:** A large text area for notes.
- Areas of improvement:** A large text area for notes.
- Attachments:** A section with 'Add Related Items' and 'Remove Item' buttons, and a table with columns 'Items' and 'Description'.

**Figure 16: Coaching Package**

**Action Packages**

The NICE Engage Coaching allows a wide scope of actions on top of the traditional agent coaching. Action-oriented packages enable users to focus on agents, customers or processes and thus provide supervisors and quality specialists with more options to act upon meaningful interactions or any other type of important data.

Supervisors and QM Specialists can use action packages for processes such as:

- Send call for evaluation or calibration
- Send best practice calls to the training department to be used as examples
- Send potential high risk calls to the Retention department

**Figure 17: Action Packages**

**Bi-Directional Coaching Process**

NICE Engage empowers agents to be part of the coaching process. Agents can comment on coaching packages and send coaching requests via the system (e.g. - receive a frontal coaching session).

Furthermore, a dedicated component in the My Universe portal allows supervisors to easily track coaching packages status and check whether team members reviewed the materials sent.

| ID                  | To               | Reviewed | Comment                              | Overdue |
|---------------------|------------------|----------|--------------------------------------|---------|
| Name: Service level |                  |          |                                      |         |
| !                   | Brown Kim        | ✓        | I believe this is a very good change |         |
| !                   | Dharma Jeff      | ✓        | Please setup a face to face session  |         |
| !                   | Downs Jim        | ✓        |                                      |         |
| !                   | Farmington Fiona | ✓        |                                      |         |
| !                   | Gandier Peggy    |          |                                      | ✓       |
| !                   | Hancock Herbert  | ✓        |                                      |         |
| !                   | Farhat Kimberly  |          |                                      | ✓       |
| !                   | Taylor's John    | ✓        |                                      |         |

**Figure 18: Coaching Review Status**

## Unified Portal

The My Universe portal is an essential component of the NICE Engage solution. It empowers contact center managers, business users, supervisors and agents to get an at-a-glance view of their most relevant information, manage daily tasks and drill down to specific data.

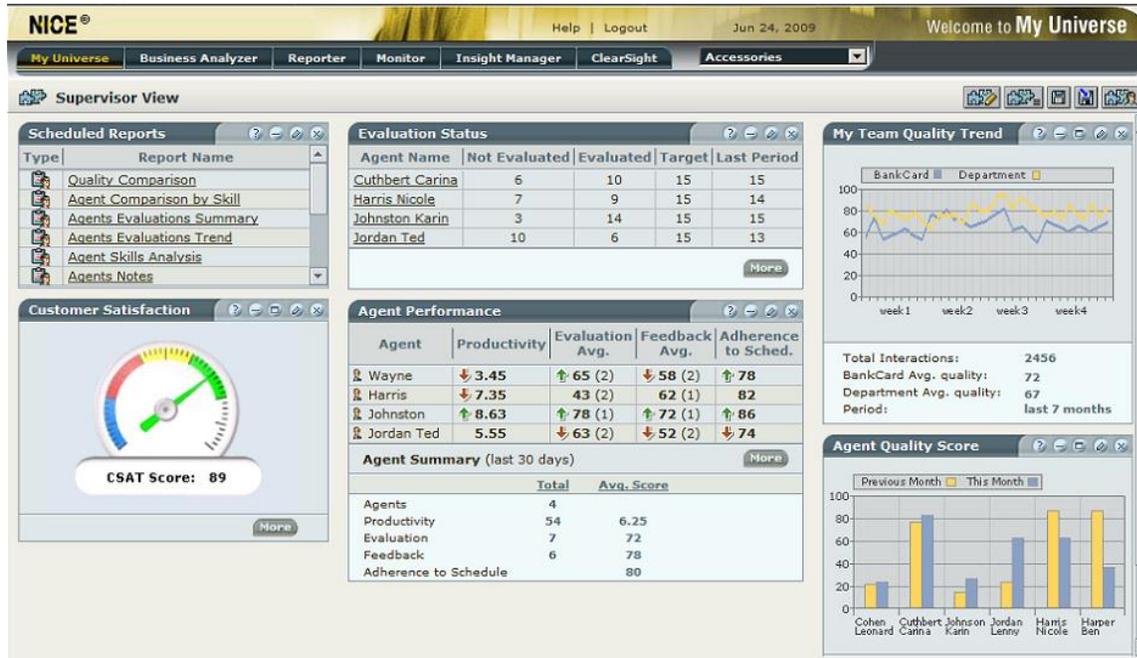


Figure 19: My Universe Portal

My Universe accommodates information from all NICE Engage applications and modules as well as information from the IEX TotalView Workforce Management solution. Based on the data, it provides custom views to each stakeholder in the organization allowing each individual to focus on the information relevant to his/her role.

The portal includes information components such as:

- Agent Performance Scorecard– enabling supervisors to easily compare agent performance based on the most important performance metrics.



**Figure 20: My Universe – Agent Performance**

- Evaluation Status– displays the number of evaluations completed and the number of evaluations left within a specific time period.

| Agent Name      | To Evaluate | Evaluated | Target | Last Period |
|-----------------|-------------|-----------|--------|-------------|
| Cuthbert Carina | 6           | 10        | 15     | 15          |
| Harris Nicole   | 7           | 9         | 15     | 14          |
| Johnston Karin  | 3           | 14        | 15     | 15          |
| Jordan Ted      | 10          | 6         | 15     | 13          |

**Figure 21: My Universe – Evaluation Status**

- Quality Score Trends– score trends and comparisons for agents, teams and sites.
- Productivity Trends– agent productivity scores over time compared with the average productivity of team members.
- Business Highlights– important interactions for management’s attention (e.g.- customers at high risk of churn, interactions of VIP customers, critical customer complaints).
- Scheduled Reports– easy access to subscribed reports.

| Type | Report Name                |
|------|----------------------------|
|      | Evaluator productivity     |
|      | Recording per agents       |
|      | PQ comparison              |
|      | Forms comparison for agent |
|      | Evaluator count            |
|      | Agent trends by section    |

**Figure 22: My Universe – Scheduled Reports**

## Rules Manager

The NICE Engage Rules Manager is a single, centralized application that allows users to define recording and call tagging rules. Furthermore, it enables building scoring formulas as well as defining classification and storage rules. Users can focus on different parts of the organization and define the appropriate rules for each group.

### Recording Scheduler

The Rules Manager Scheduler initiates interaction recording according to defined criteria. Authorized users can set the system to record interactions according to criteria such as:

- Negative, selective and QM recording plans
- Record specific agents or groups
- Record according to different sampling methods
- Record according to call direction (inbound, outbound, internal, more)
- Record according to the media type (voice, screen, both)
- Record calls from specific dialed numbers

Recording can be scheduled on a daily, weekly or monthly basis.

**New Scheduler Rule**

**General**

Rule Name:

Rule Type:

Description:

Modifier:

Created:

Modified:

Status:  Active  Inactive

Rule Lifetime: Start:  End:  Never

**Recurrence**

**Weekly Recurrence**

**Sampling**

**Filter**

**Figure 23: NICE Engage Rules Manager – Recording Scheduler**

**Automatic System Scores**

NICE Engage provides contact centers auto-scoring capabilities to help users focus their QM efforts where they are most needed. Authorized users can define interaction scoring formulas and an unlimited number of rules according to their needs.

For example, customer satisfaction score can be calculated by creating a formula that combines call flow data, audio analysis, CTI events and emotional expressions.

**Edit Scoring Rule**

**General**

Rule Name:

Description:

Modifier: Gordon, James

Created:

Modified: 04/05/07

Status:  Active  Inactive

**Filter**

**Defined Scoring List** New Edit Delete Display Options

| Card Name                    | Total Weight | Actual Weight | Card Preview: |       |       |
|------------------------------|--------------|---------------|---------------|-------|-------|
| Number of holds              | 25           | 33            | Operation     | Value | Score |
| Counts of words from grou... | 25           | 33            | =             | 0     | 100   |
| Customer emotion level       | 25           | 33            | =             | 1     | 80    |

**Figure 24: NICE Engage Rules Manager – Automatic System Score**

## **Enterprise Reporting**

The NICE Engage Reporter is a comprehensive platform to design, generate and distribute analysis reports. It enables organizations to convert large amounts of data into crucial business insights and provides enterprise-level querying and reporting for the entire business.

The NICE Engage Reporter uses a centralized Data Mart to enable seamless access to information across multiple sites as well as central definition of authorizations. This architectural approach provides unmatched reporting flexibility and performance while maintaining data integrity, optimizing network bandwidth, and providing access to information.

## Multi-Tenancy

Multi-tenancy is used to describe the support of several separate entities under one platform where a tenant represents a customer, department or a business unit who uses the service.

NICE Engage provides multi-tenancy capabilities to address the challenges of organizations in managing the security, resource and permission requirements needed when serving multiple entities/customers on the same recording and applications infrastructure. This solution is designed to address service providers and outsourcers' need for segregating the applications and information they deliver to customers. It is also suitable for mid to large-sized contact centers that need to maintain separation between different departments.

Support for multi-tenancy environments is reflected across the various NICE Engage components including:

- Access to data (e.g.- recorded interactions, agent evaluations)
- Access to queries
- Access to reports
- Access and use of different evaluation forms
- Access to views in the My Universe portal

## **COPC Support**

Customer Operations Performance Center (COPC) is a leading contact center standard. It is a set of management practices, key metrics, measurements and training for customer-centric service operations. COPC focuses on the various aspects of contact center operations including quality management, customer satisfaction, staff attrition and process efficiency.

NICE supports the COPS standard by enabling customers to design evaluation forms in a COPC-compliant manner, for example by defining critical questions and flexible scoring mechanism, and to create COPC-related reports such as question accuracy and FCR tracking reports.

# Interaction Analytics

NICE Interaction Analytics generates business and operational efficiency insight from customer interactions in an automated way, using advanced speech and text analytics capabilities.

Organizations got terabytes of customer interaction data – the challenge is how to turn that raw data into actionable insight about their customers, employees and business processes.

NICE Interaction Analytics allows different stakeholders within the organization to analyze masses of customer interactions across all channels identify hot topics and root causes quickly and produce actionable insight that can be used to improve processes, increase sales, optimize marketing campaigns and reduce operational costs.

Analyzing contact center interaction data empowers organizations to meet short-term objectives such as improving First Call Resolution and reducing Average Handle Time, as well as strategic goals such as predicting customer churn, increasing customer loyalty and satisfaction, and increasing marketing campaign effectiveness.

### Key Benefits

- Automatically analyze every captured interaction
- Base business decisions on quantifiable, accurate information
- Identify customers at risk in real-time
- Expose root cause for customer dissatisfaction
- Reducing call volume
- Increasing first contact resolution
- Improving customer satisfaction
- Improving agent compliance adherence
- Increasing sales
- Improving agent performance
- Reduce Average Handle Time

### Interaction Analytics Highlights:

- 100% captured interaction analysis
- Automatic categorization of calls based on out-of-the-box libraries and lexicons
- Automated discovery of root causes and hot topics
- Ongoing trend tracking and real time alerts
- Operationalization of analytics insights by integrating with quality management and performance management
- Search and investigation of massive amounts of customer interactions across multiple channels
- Intuitive easy-to-use user interface, making analytics accessible to all relevant stakeholders (services, marketing, etc.)
- Out-of-the-box business solutions with pre-defined categories, lexicons, reports and dashboard views
- Speaker separation for “who said what”
-

## Interactions Analytics Business Applications

### Insight Manager

The Insight Manager application automatically classifies customer interactions into definable categories based on speech and screen analytics, CTI events, customer feedback, advanced filters and business rules. The application improves business performance by providing managers with insights that range from the operational to the strategic, for example:

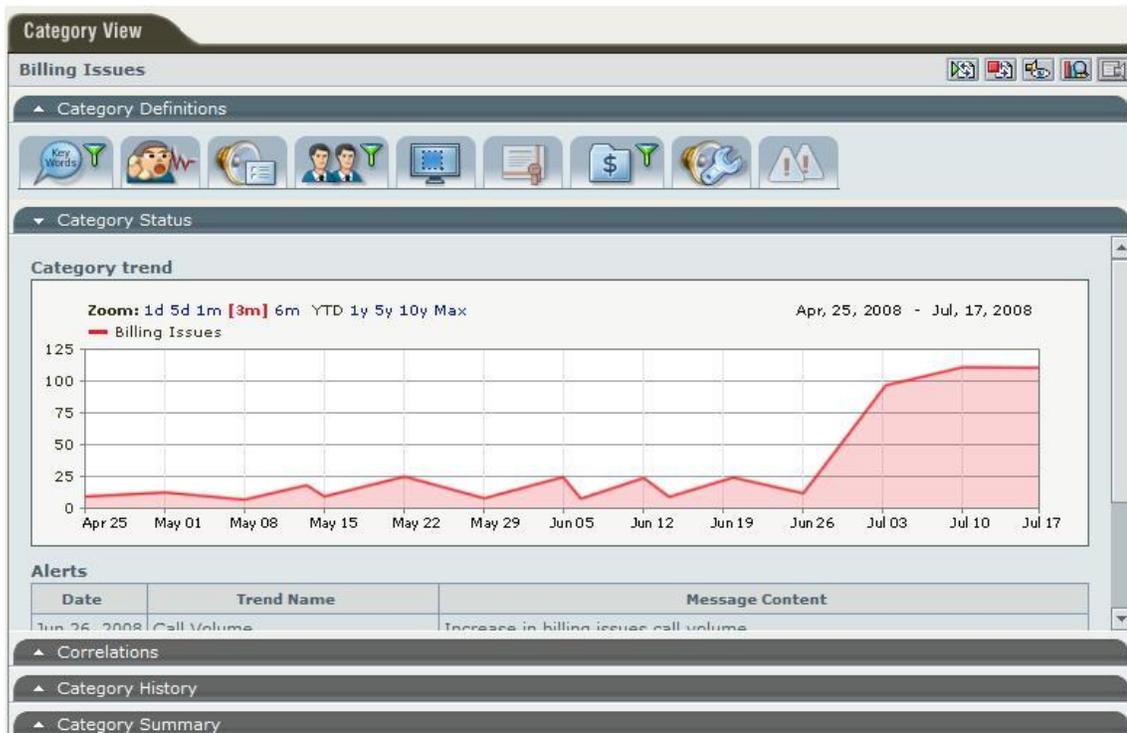
- The reasons for customer calls (e.g. - product inquiries, billing issues, cancellation)
- Top service issues (e.g. - lost delivery, damaged products, missing items)
- Identify cross-sell/up-sell attempts made by agents
- Identify calls in which a certain competitor name was mentioned by the customer

| Category View                    |       |             |           |         |
|----------------------------------|-------|-------------|-----------|---------|
| All Categories                   |       |             |           |         |
| [-] Operational Efficiency       |       |             |           |         |
| Name                             | Alert | Status      | Completed | Results |
| <b>Repeating Calls</b>           |       |             |           |         |
|                                  |       | ✓ Completed | 100%      | 575     |
| Billing Issues                   | !     | ✓ Completed | 100%      | 311     |
| Product Issues                   | !     | ✓ Completed | 100%      | 647     |
| Self Service Issues              |       | ▶ Running   | 100%      | 577     |
| <b>Agent knowledge gaps</b>      |       |             |           |         |
|                                  |       | ✓ Completed | 100%      | 647     |
| [-] Customer loyalty & retention |       |             |           |         |
| Name                             | Alert | Status      | Completed | Results |
| <b>Dissatisfied customers</b>    |       |             |           |         |
|                                  |       | ▶ Running   | 87%       | 1,282   |
| Call escalation                  |       | ▶ Running   | 100%      | 577     |
| E-mail Service Issues            | !     | ✓ Completed | 100%      | 935     |
| Calls Service Issues             |       | ▶ Running   | 54%       | 1,003   |
| Product issues                   | !     | ✓ Completed | 100%      | 935     |
| Policy issues                    |       | ▶ Running   | 54%       | 1,003   |
| <b>Customers at risk</b>         |       |             |           |         |
|                                  |       | ✓ Completed | 100%      | 935     |

**Figure 25: Insight Manager Application**

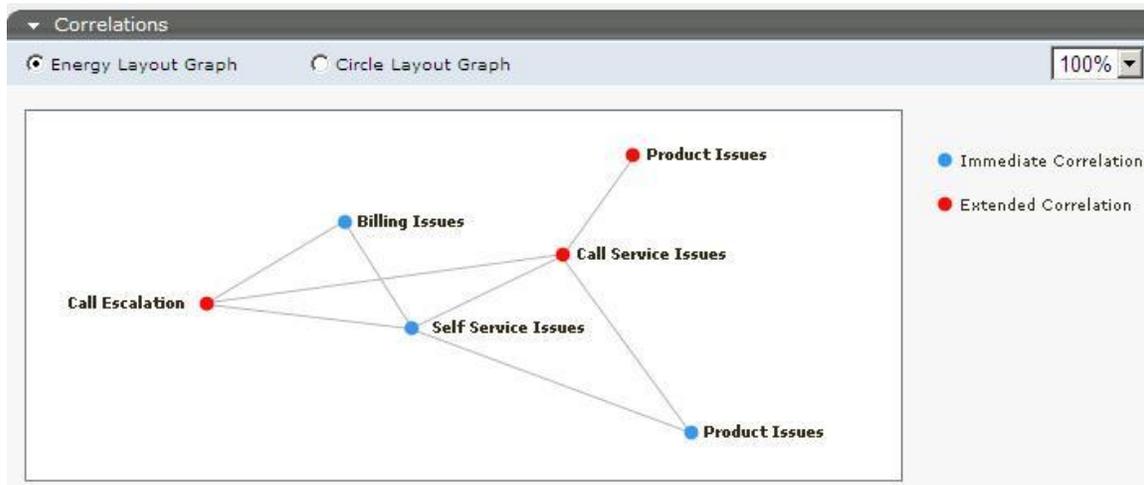
Call categories drives multiple business insights and targeted actions:

- Call volume trends – displays call volume deviation of each category over time.



**Figure 26: Call Volume Trend per Category**

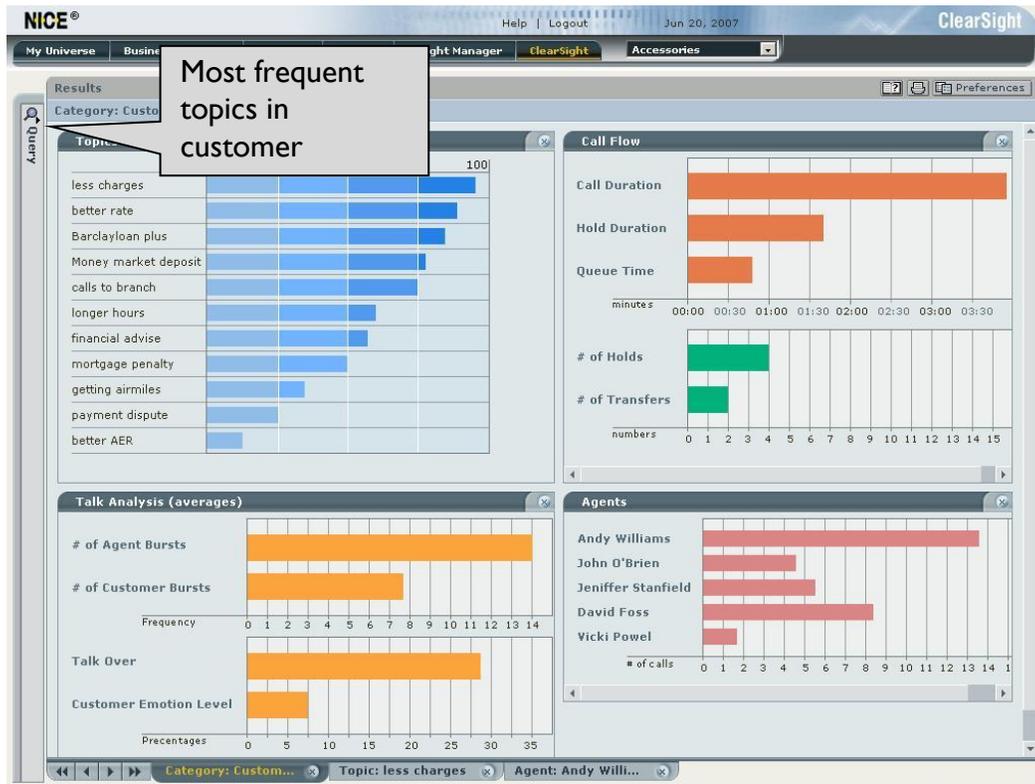
- Define alerts on call volume deviation – users can define that once the system detects a deviation from the normal call volume, an immediate alert will be sent to selected groups or people in the organization, allowing them to address the issue proactively and gain valuable time.
- Alert on events – users can define alerts on specific category events such as detected phrases (e.g. - “close the account”) or new category results added (e.g. - alert on new results added to the ‘Customers at Risk’ category).
- Categories correlation – The Insight Manager Correlations module presents the links between different categories, allowing users to better understand the commonalities between different issues (e.g. - how billing issues correlate with dissatisfied customers).



**Figure 27: Categories Correlation**

### ClearSight

The ClearSight application uses advanced data mining, algorithms and OLAP tools to find patterns, correlations and in-depth understanding of underlying issues. It provides a graphically intuitive presentation of root cause analysis, enabling business users to implement fact-based decisions. With ClearSight, organizations can formulate and evolve the analysis as needed to obtain the best results and discover new insights more quickly and easily.



**Figure 28: ClearSight Root Cause Analysis Screen**

ClearSight provides advanced root cause analysis through:

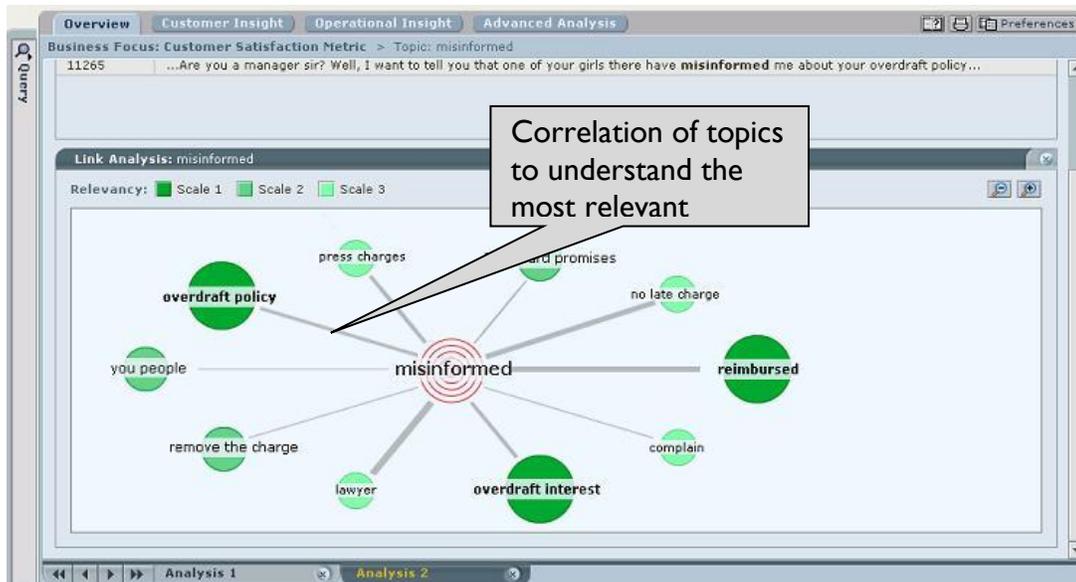
- Topics trends analysis– provides users with the trend of the root causes (topics) compared to the trend of the overall call volume of the category, thus enabling users to understand and focus on specific topics that are correlated to high/low call volume trends.

In the example below, the trend of the 'Customer Satisfaction' category is compared to the trend of the related topics that the system automatically identified. The user can learn that the topics 'misinformed' and 'overdraft interest' explain the increase in dissatisfaction calls, and can then act upon this insight.



**Figure 29: Topics Trends Analysis**

- Visual Context Explorer– enables the user to further explore the specific root causes and insights that were surfaced in the topic analysis. For each topic in the list, the user can perform context analysis in order to get the statistically significant keywords that relate to this topic. In the example below, the user can understand that the topic ‘misinformed’ is highly related to the issues of ‘reimbursement’, ‘overdraft policy’ and ‘overdraft interest’.



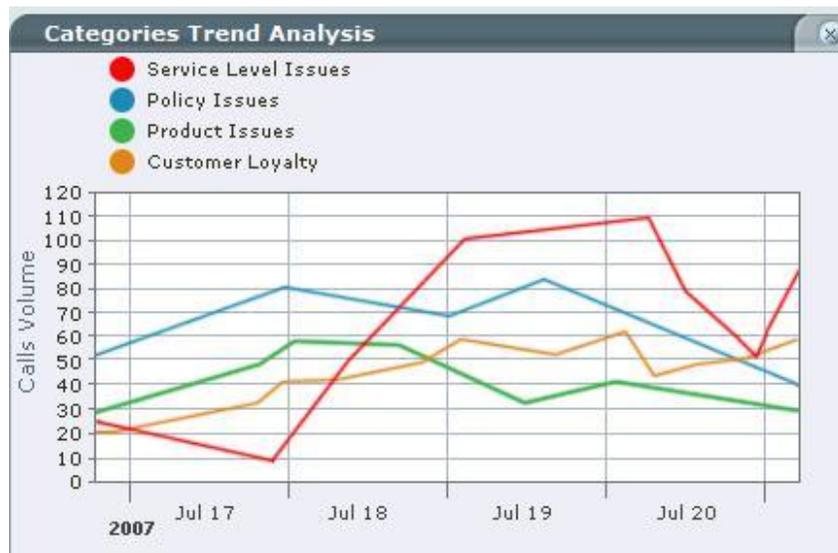
**Figure 30: Context Analysis**

- Customer analysis– analyzes information concerning customers, helping the user to get insights on specific customer characteristics and behavior in each category. For example, the user can get the distribution of customer dissatisfaction calls according to customer type (e.g. Platinum, Gold, Silver), customer seniority and age, or geographic location.



**Figure 31: Customer Analysis**

- Trends analysis– displays the trends of each category over time and allows zooming in on specific periods.



**Figure 32: Categories Trend Analysis**

## Hot Topics

The Hot Topics component gives an ‘out-of-the box’, birds-eye view, of the Contact Center’s most mentioned topics. There is no need to define any lexicon or categories. By examining interactions per period, greater value and understanding of the main issues can be reached automatically.

The Hot Topics component provides the Contact Center Manager, Business Analyst, and additional decision makers, as well as Junior Managers, an ad hoc snapshot of the most mentioned topics as expressed by customers during a given time period. For example, if the customer constantly mentions in their interactions such topics as online payment issues or long queue times, the Hot Topics component will show that these are prominent topics that should be further investigated and assessed.

Lob 1: Wednesday 03/10/2012 - Thursday 04/10/2012

|                                     | Hot Topic Name                                       | Rank | Previous Rank | Trend | Trend Change |
|-------------------------------------|------------------------------------------------------|------|---------------|-------|--------------|
| <input checked="" type="checkbox"/> | technic support / try to get / tum                   | 1    | 2             | —     | 0.00%        |
| <input checked="" type="checkbox"/> | debit card / expiration date / payment               | 2    | 3             | ↑     | 7.00%        |
| <input checked="" type="checkbox"/> | cancel the account / cancellation / customer service | 3    | 1             | ↓     | -15.00%      |
| <input checked="" type="checkbox"/> | local access / internet / purchase                   | 4    | 5             | ↑     | 6.00%        |

Show Selected    Export Selected

Select analysis period: Last Week

Select # of Hot Topics to display: 7

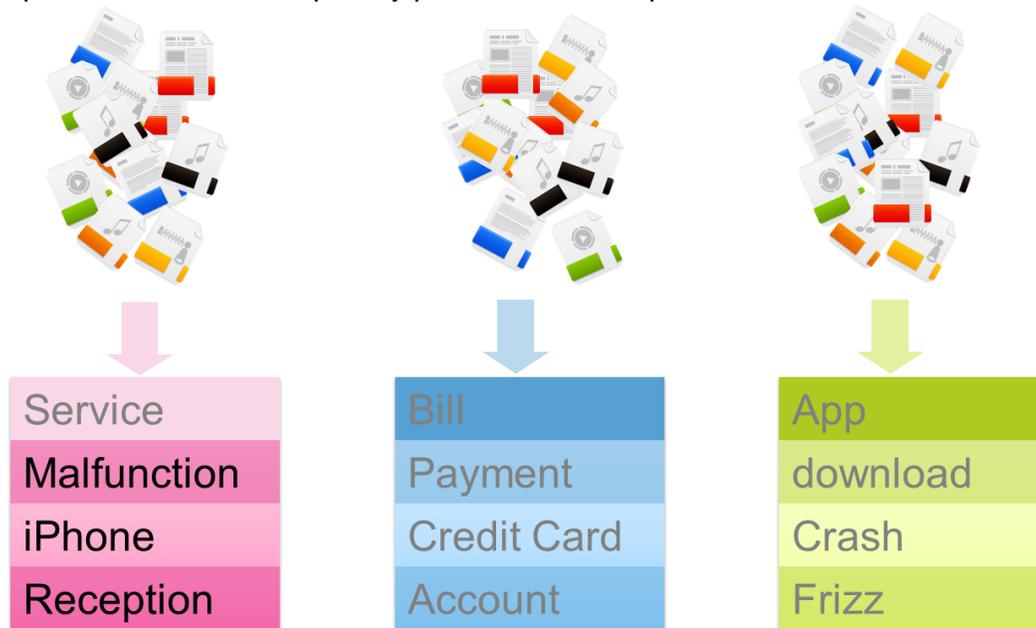
*Hot Topics View*

The Hot Topics component:

- Shows a snapshot of top number of hot topics that were mentioned in the interactions.
- Shows Hot Topics as well as specific key phrases per topic.
- Compares the current period to a previous period, showing the trend per topic.

A topic represents a group of interactions that have a common theme. It contains key phrases, either single words or phrases, where each key phrase has a significant score within the topic (rank) which implies how much this key phrase represents the topic (theme). The key phrase is displayed as a bubble in the Hot Topic cloud and its significance (the rank) is shown with its size and location within the cloud. This visual format allows for quick perception of the most significant key phrases mentioned in the interactions.

Below are examples of Hot Topics and the key phrases included in the Hot Topic. Each cluster represents a topic and each topic is combined of unique key phrases for that topic:



In the Hot Topics component, a table displays the following information:

- Hot Topic Name – Displays the top 3 key phrases in the Hot Topic.
- Rank – Represents the volume of the selected Hot Topic compared to the other Hot Topics during the current time period. The range is between 1 and 7 where 1 represents the highest volume.
- Previous Rank – Displays the Hot Topic rank from the previous time period.
- Changes from last period – Displays a comparison of the current time period and the previous time period.

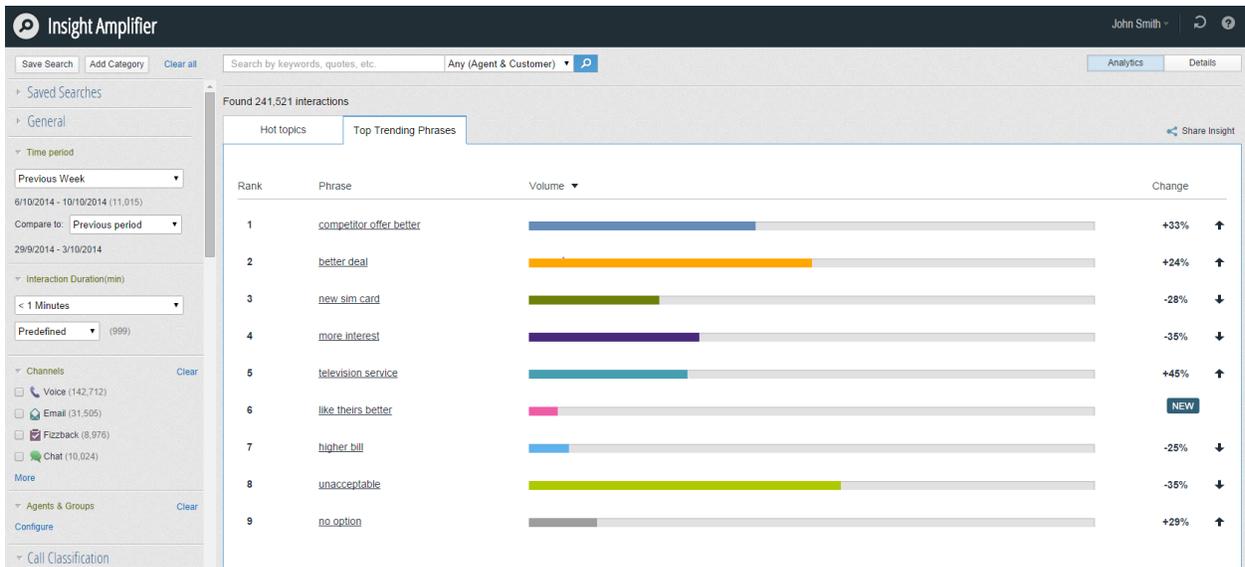


No longer a multi-step process, you can now get insight in one click. Select your facet values or run a free-text search and get an aggregated analytical view with customizable widgets. You can further refine your insights by including more facet values or text and drill down deeper for more insight.

**Take an action:** from Insight Amplifier you can easily: play back the interaction itself to get the context of the call, send interactions for evaluation or a coaching package and share insights via email.

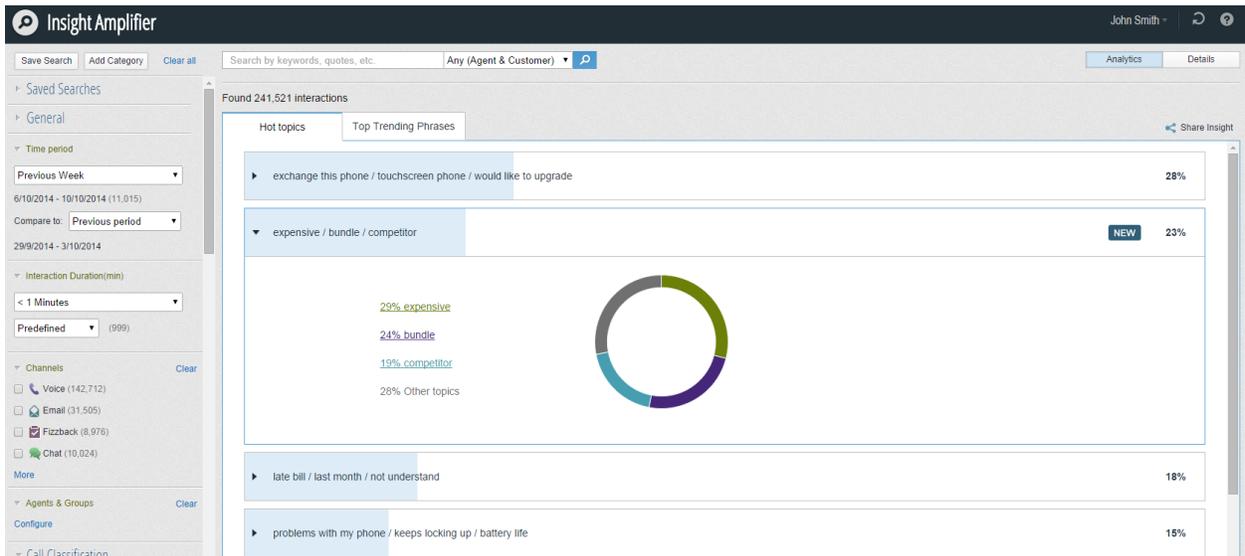
**Top Trending Phrases** shows the most common and prominent key-phrases within the interactions that the user selected (via facets or free text search). It also shows the phrases volume, rank and trend compared to a previous period.

The user can select one of the phrases and drill down and focus only on calls with this phrase - a new list of top trending phrases will appear.



**Hot Topics** shows the Contact Center’s most mentioned topics based on the interactions that the user selected (via facets or free text search). It also shows the topics volume, main phrases that represents the topic and if the topic is new or not, compared to a previous period.

The user can select one of the topics phrases and focus only on calls with this phrase - a new list of hot topics will appear.



With Insight Amplifier you get an improved root cause analysis (Top Trending Phrases and Hot Topics).

- Algorithm perspective: Improved relevancy of the interactions' sample that is analyzed as well as using a larger sample. This result in a more representing and accurate root cause analysis.
- Functionality perspective: the user gets the root cause insights within a click (performance improvements) and can drill down to further focus his investigation.

## Packaged Business Solutions

NICE Engage features out-of-the-box packaged business solutions for Handle Time Optimization, First Call Resolution, Customer Satisfaction, Sales Effectiveness, Collections Effectiveness, and Churn Reduction..

These Business Solutions are based on the experience gained from hundreds of successful deployments and include pre-defined Categories, Lexicons, Alerts, Reports and Dashboard views that enable customers gaining quick ROI.

### Handle Time Optimization

NICE Engage HandleTime Optimization Business Solution provides organizations with an innovative approach and quick turnaround for measuring, analyzing and improving interactions handle time.

The solution offers valuable integration with the organization’s existing business processes, enabling organizations to automatically analyze customer interactions and perform root cause analysis in order to identify potential calls’ length-related problems. After identifying issues and the potential areas for improvement, organizations can immediately act upon these insights and drive better performance.

The solution constitutes an end-to-end solution, including comprehensive reports, dashboards, and workflows that enable rapid deployment and provide an accelerated return on investment.



**Figure 33: Handle Time Optimization – Dashboard**

**Call Part Analysis** is an innovative technology that leverages natural language processing to separate transcribed calls into unique parts. For example, a typical interaction may flow from customer identification to problem description and resolution to up-sell and wrap-up. By identifying these discrete parts within calls and calculating the handle time for each, the system can identify, for example, which agents are not well-trained in customer verification procedures, or which agents are not spending enough time on upsell attempts. NICE Speech Analytics displays call part analysis graphically (see Figure 4) so supervisors can easily understand what’s driving handle time and whether agents are spending call time efficiently. This functionality is provided as part of the NICE Handle Time Optimization Business Solution.



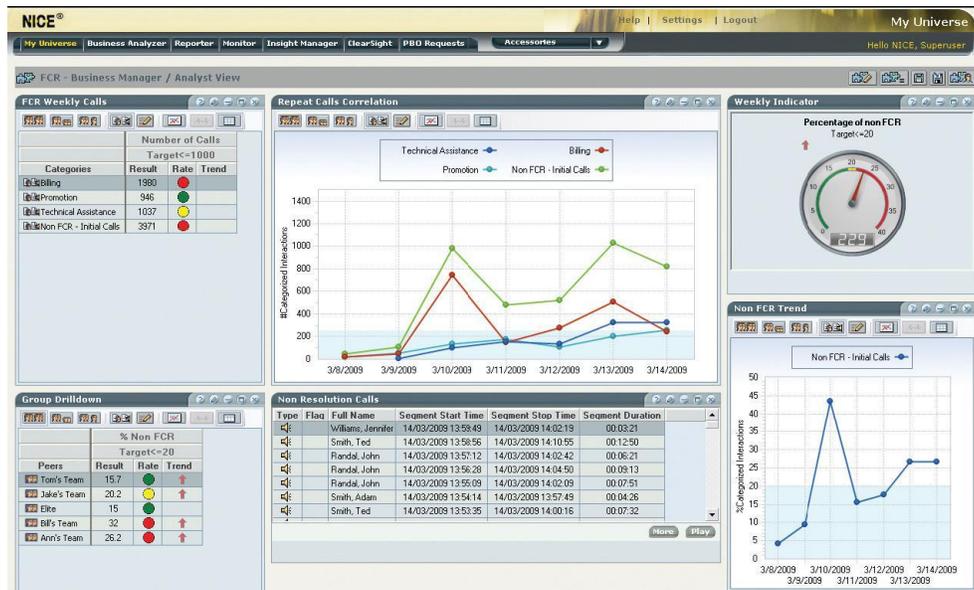
**Figure 34: Call Part Analysis Automatically Identifies Discrete Parts of the Call**

## First Call Resolution

No measure has an impact on contact center performance as First Call Resolution (FCR) – an essential indicator that is at the core of a contact center’s operational efficiency. FCR is directly correlated with key contact center metrics and has significant impact on customer satisfaction, operational costs and employee satisfaction.

NICE Engage First Call Resolution Business Solution provides an automated, accurate and cost-effective means to measure, analyze, and improve FCR rates:

- **Repeat call identification and categorization (Interaction Chaining)** – automatically detects non-FCR calls by correlating keywords and phrases in the captured call (e.g. - “this is second time I am calling”), customer feedback data (“is this the first time you are calling regarding this issue?”) and business data from the CRM (e.g.- cancellation policy reviewed by agent). The calls are then categorized according to the specific call types correlated with FCR issues. This feature also enables the connection, or “chaining” of multi-channel interactions with the same customer. It identifies each interaction that forms a link in the chain.
- **Automated root cause analysis** – automatically tracks the initial call to understand why it was not resolved. The solution performs automated root cause analysis and provides reports revealing the top reasons behind repeat calls, frequent topics that were raised, and the percentage of interactions not resolved during the first call. Users can drill down from the report to playback the actual call.



**Figure 35: FCR – Dashboard**

## Customer Satisfaction

Companies constantly aim to increase customer satisfaction by optimizing customer service, adapting their offerings and focusing retention efforts in the right place.

NICE Engage Customer Satisfaction Business Solution provides a highly accurate, cost effective, interactions-based method to predict which of the customers calling to the contact center is likely to leave and why. By incorporating the voice of the customer into the analysis companies can create targeted retention efforts based on the actual customer issues, significantly increasing customer satisfaction.

- **Identify customers at risk** – identifies and categorizes calls which may indicate future churn. The solution analyzes interactions using content analysis by keywords and phrases, call flow analysis, talk pattern analysis and emotion detection. Potential indicators may be specific words or phrases used by the customer, mentioning of a competitor's name, or emotion level that is heightened by frustration.
- **Improve accuracy and take proactive measures** – seamlessly integrates with transactional churn models to create a holistic, more accurate predictive model. By integrating voice-based intelligence with CRM and BI transaction data, NICE is able to increase churn prediction accuracy and identify high risk callers that would not be detected by a transaction model alone.
- **Targeted Action** – performs automatic root cause analysis in order to understand the underlying issues leading to dissatisfaction. A combination of speech, text and business data analysis provides detailed, actionable results which can be used by various departments such as the Quality, Retention and Marketing teams.



**Figure 36: Customer Satisfaction – Dashboard**

### Sales Effectiveness

NICE Sales Effectiveness employs NICE Cross-Channel Interaction Analytics — powerful technology for analyzing speech, emails, chats, and other interaction channels, as well as agent desktop activity — to automatically analyze the content of interactions and categorize them according to various questions, such as:

- What was the interaction about?
- Did a sales opportunity arise?
- Did the agent attempt to seize the sales opportunity? Was the sales attempt successful?
- Did the agent promote the right offer to the customer?
- What were the customer’s reactions to the sales attempt? Was the agent successful in addressing them?

NICE Sales Effectiveness compiles this data and presents it in a comprehensive dashboard as clear key performance indicators (KPIs) for up-sell and cross-sell attempts, successes and missed opportunities. The solution’s drilldown and reporting capabilities enable contact center managers to view performance by product offering, call type, group and individual agent, revealing previously unavailable metrics such as the ratio of attempts to success. Furthermore, the solution automatically issues alerts when any KPI threshold is breached, prompting contact center and marketing management to take immediate corrective action.



**Figure 37: Sales Effectiveness – Dashboard**

**Collections Effectiveness**

NICE Collections Effectiveness employs NICE Cross-Channel Interaction Analytics — powerful technology for analyzing speech, emails, chats, and other interaction channels, as well as agent desktop activity — to automatically parse the content of collections interactions and categorize them according to various questions, such as:

- What were the customer’s reactions to attempts to collect the debt? Was the agent successful in addressing objections?
- Did the customer promise to pay?
- Did the agent encourage immediate payment, e.g., via money transfer?

NICE Collections Effectiveness leverages advanced analytics to analyze collections calls and calculate important metrics, such as right-party contact rate and promise-to-pay rate by individual agents, agent groups or the entire contact center.



**Figure 38: Collections Effectiveness – Dashboard**

**Churn reduction**

The NICE Churn Reduction is a comprehensive closed-loop solution designed to help organizations effectively retain customers. It analyzes unstructured data captured from customer interactions across all contact channels, and accurately identifies which customers are at high churn risk and why. A real-time decisioning engine applies these churn insights, along with inputs from predictive next-best-offer models and real-time call context as inbound calls unfold, and cues agents to take mitigation actions and present the right offers likely to retain customers.

The solution consists of the following steps:

- Automatically predicts – in real time and offline – customers at risk of churning
- Exposes root causes of customer dissatisfaction
- Integrates with transactional churn models to significantly improve their accuracy
- Automatically generates customer service (CRM) tickets for proactive outbound follow-up
- Calculates and selects the best offer for the current customer during the interaction



**Figure 39: Customer Experience – Dashboard**

## Interaction Analytics Platform

NICE Interaction Analytics utilizes a comprehensive multi-dimensional approach, including the broadest set of analytics engines. Integrated into a unified solution, this unique combination enables to extract the maximum business insights from customer interactions in a rapid, cost-efficient manner.

NICE Engage's analytics engines include:

### Speech Analytics

NICE Engage's speech analytics leverages advanced engines working in synergy with one another, thus providing maximum accuracy, throughput and flexibility.

- Phonetics Indexing– transforms the immense quantity of customer calls into a searchable voice database, enabling ad-hoc queries to retrieve calls that contain any given word or phrase.
- Keyword Spotting– identifies pre-defined words or phrases within interactions, and generates information concerning the position of words in the interactions.
- Speech-to-Text– transcribes calls, creating a text file with the full utterances identified. The transcribed call is then fully searchable for retrieval and analysis.
- Emotion Detection– flags heightened emotional levels of either the customer or the agent during the call. Uses physical voice parameters such as pitch, pacing and volume, to gauge the level and presence of emotion in a conversation.
- Talk Analysis– pinpoints periods of silence and overlaps between the agent's voice and the customer's voice, as well as the percentage of the call dominated by either side of the interaction.
- Speaker separation– the ability to separate both sides of a conversation into different audio tracks. Essential capability to understand which side (customer or agent) said what.
- Voice print - the ability to have a unique signature per person voice to be used for comparing if different calls/ audio segments were made by the same person.

### Call Flow Analytics

NICE Engage advanced CTI engine processes and analyzes CTI information, providing the basis for advanced business analysis and actionable business performance data. Based on predefined parameters and rules, the CTI engine performs an advanced CTI analysis, which is then combined and correlated with the rest of NICE's multi-dimensional analytics.

### Desktop Tagging

NICE Perform Desktop Tagging allows extracting any type of information in order to tag any type of interaction based on the agent's screen activity or information appearing on the screen (e.g. - customer name, segmentation and monthly bill).

Desktop Tagging detects activity on the agent's screen, extracts valuable information, and correlates it with the interaction. Multi-dimensional analysis of screen events as well as extracted data and other data already in the system helps improve business performance.

With Desktop Tagging extracting existing customer information from CRM applications and correlating it with recorded interactions becomes an easy task. Using customer information to search for and replay interactions can save a significant amount of time and reduce costs.

**Text Mining**

NICE Engage text mining capabilities include analysis of e-mail, chat and web correspondence, generating valuable insights from text-based interactions and correlating them with the related voice-based interactions.

**Business Data Analytics**

NICE Engage's solution architecture facilitates integration of data from other enterprise systems such as CRM and ERP. It integrates relevant customer data such as transactional information, preferences, restrictions and statistics into the analysis process, thus providing a comprehensive, consolidated view of the customer experience.

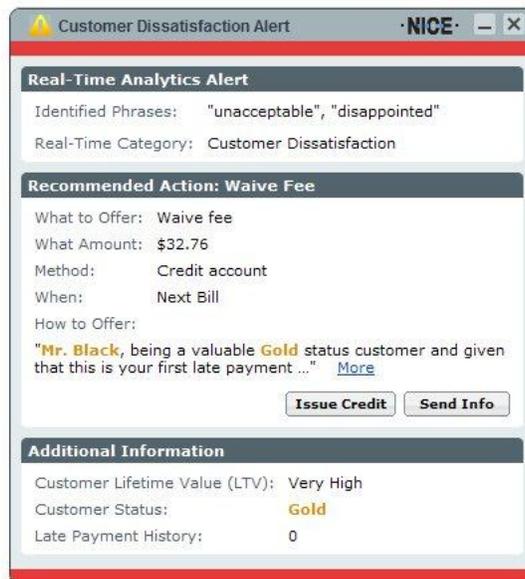
## Real-Time Speech Analytics

Real-Time Speech Analytics is a new technology that enables enterprises to analyze calls in real time, to identify important events or situations, and at the moment of truth, to take immediate action while the customer is on the phone.

NICE Engage supports Real-Time Speech Analytics as an optional capability of NICE Interaction Analytics. Fully integrated with NICE Real-Time Process Optimization, this new capability can categorize calls while they take place, identifying situations such as dissatisfied high-value customers, cross-sell opportunities, etc. It can also identify known customer issues that could be extending the call handling time unnecessarily.

Once such an event is identified, the system will take immediate action, such as:

- Providing agent guidance to optimize handle time and allow for quick and efficient service.
- Alerting agent of sales opportunity and providing all relevant information to the agent's desktop to increase the likelihood of closing the sale, such as sales scripts, offer description, objection handling, etc.
- Email supervisors when a customer at risk is identified
- With one NICE Advanced Interaction Recorder server, more of your agents will be empowered with real-time guidance.



**Figure 40: Real-Time Speech Analytics**

# Real-Time Authentication and Fraud Prevention

Clients and consumers engage organizations every day through various channels. There are multiple communication channels that support this on-going engagement.

Every engagement results in some sort of service inquiry or transaction. Organizations must verify the identity claim of the individual who is currently engaging them before they can proceed with service or approval of transaction. The motivation behind authentication is purely security & compliance driven. The lack of authentication may lead in turn to few negative outcomes such as: fraud attacks, account takeover, identity theft, unapproved transactions and information leakage. Those in turn will cause to a cascade of undesired repercussions such as: fraud losses, regulatory fines, customer churn, brand equity losses, negative security perception, and lack of trust from clients who become conservative and prioritize traditional channels perceived as more secured such as branches and retail centers, thus leading to increase of operational costs around those channels. Hence authentication is forced on organizations in their combat to minimize the risk for every interaction prior to providing services.

NICE offers a unique solution to authenticate callers to the contact center in a secured yet efficient and user friendly way that will not overburden the clients when they engage the organization – The Real Time Authentication.

## Key Benefits

- Securely authenticate customers in real time with no customer effort
- Expedite time-to-service for legitimate customers
- Passively enroll the vast majority of customers seamlessly
- Securing the authentication process while using a real time match to a watch list
- Generate real-time alerts for high risk interactions and guide agents in real time to take the next best action
- Increasing customer experience
- Reducing direct and indirect fraud losses

## Real-Time Authentication and Fraud Prevention Highlights:

- Real-Time streaming of the interaction with no delays
- Real-Time agent guidance for Authentication and Fraud detection
- Seamless passive enrollment of historical and on-going calls with security layers
- Addressing customer consent indicators for creating or deleting a voiceprint
- Dedicated RTS template to expedite delivery
- Executive dashboards
- Full control on creating watch lists, setting enrollment filters and setting authentication thresholds using Authentication Center application

NICE Real Time Authentication solution is a base on some of NICE core technologies and assets. Recorded interactions serve as the substrate to automatically and systematically create clients' voiceprints, RTI is used to automate processes and guide agents to the right course of action in real time. These core technologies are intertwined together with Voice Biometrics to comprise a robust yet seamless and passive RT authentication method during the natural course of the call.

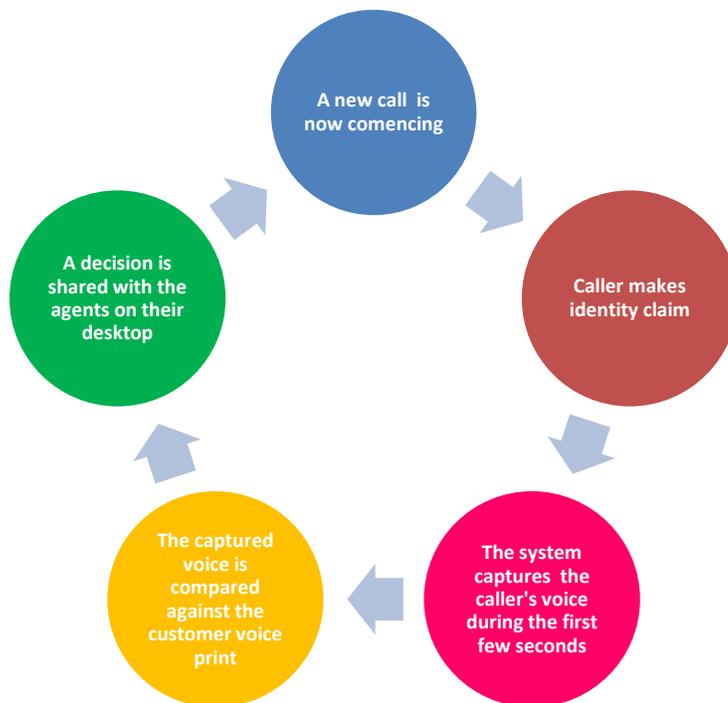
The phone channel is gradually becoming the favorite habitat for fraudsters. This trend is starting to precipitate in the minds of decision makers, hence organizations are investing in order to secure the phone channel while eliminating operational costs by trimming the average handle time associated with the identification and verification stage.

NICE solution enables optimizing the identification and verification process in the following ways:

- **Operations & IT: Cost Reduction** – Reducing average handling time as high as 25% of a given call duration is a serious money saver Trimming just 20 seconds of the average identification and verification handle time can lead to direct savings.
- **Business and Customer Relations: CSAT Improvement** – Utilizing less intrusive and time consuming identification and verification methods than the current challenge questions.
- **Fraud and security Departments: Improved Fraud Prevention solution** – Using a robust solution that provides a less permeable security blanket.

### Solution Details:

Below is a basic diagram that depicts the basic workflow of Real Time authentication during active call. The main principal is to allow customers utter their request immediately at the beginning of the call and utilizing natural course of events to simultaneously verify the caller's claimed identity in order to proceed with service without having to ask challenge questions.



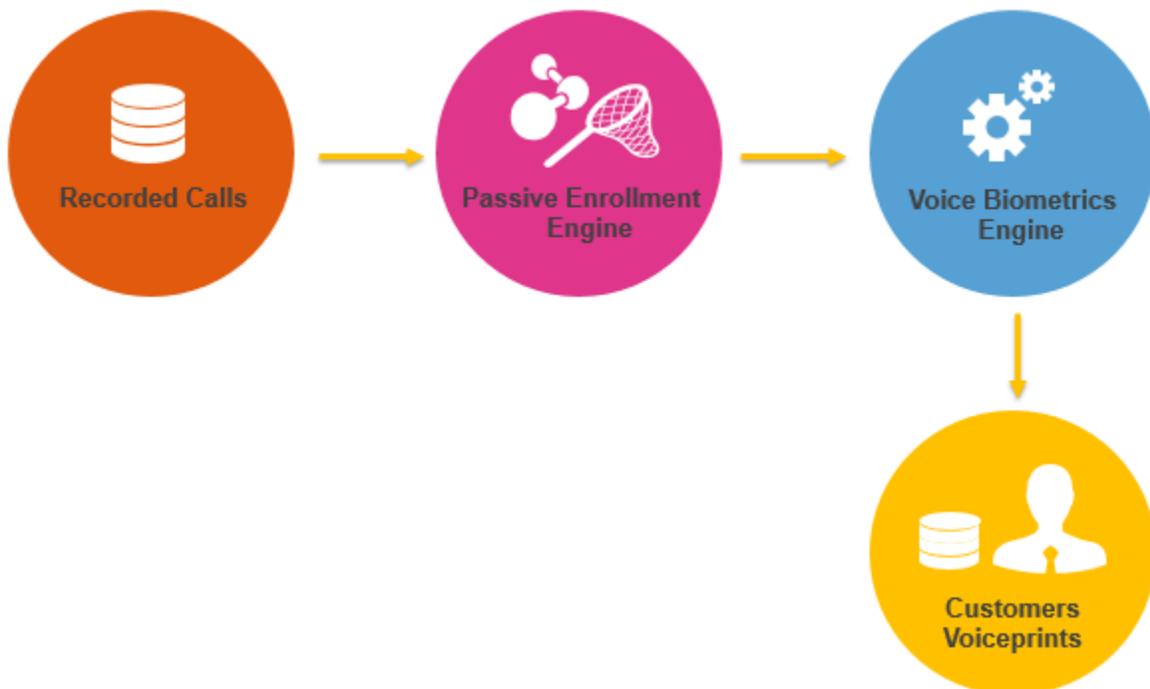
**Figure 41: Real-Time Authentication – Solution Flow**

The solution can be broken down into two main workflows: Enrollment and Authentication. While the authentication process occurs in real time, the enrollment process is an on-going procedure that happens at the

back end to gradually increase the voice prints data base. For securing the authentication process, the system can detect whether the caller is a known fraudster by matching the real time stream to a list of known fraudster.



**Figure 42: Real-Time Authentication and Fraud Prevention – Workflow**



**Figure 43: Passive Enrolment**

The solution can be broken down to several main components:

- NICE Advanced Interaction Recorders – those will serve both for the real time audio streaming. In Expansion mode, Passive Enrollment will utilize recorded calls on the source system (NIM 4.1)
- Voice biometrics engines – The engine will use for the enrollment and authentication actions
- RTS Solution – RTS serves as the liaison between the evolving situation and the required analysis and provides situational awareness through agent's desktop, prioritization, rule based decision layer and real time guidance and process automation as requested

## CONTACTS

**Global International HQ, Israel,**  
T +972 9 775 3777, F +972 9 743 4282  
**Americas, North America,**  
T +1 201 964 2600, F +1 201 964 2610

**EMEA, Europe & Middle East,**  
T +44 0 1489 771 200, F +44 0 1489 771 665  
**Asia Pacific, Singapore Office**  
T + 65 6222 5123, F +65 6222 5459

The full list of NICE marks are the trademarks or registered trademarks of Nice Systems Ltd. For the full list of NICE trademarks, visit [www.nice.com/trademarks](http://www.nice.com/trademarks). All other marks used are the property of their respective proprietors.

CONTENTS OF THIS DOCUMENT ARE COPYRIGHT © 2011-2012.

## ABOUT NICE SYSTEMS INC.

**NICE Systems Ltd. (NASDAQ: NICE)** is the worldwide leader of software solutions that deliver strategic insights by capturing and analyzing mass quantities of structured and unstructured data in real time from multiple sources, including, phone calls, mobile apps, emails, chat, social media, and video. NICE solutions enable organizations to take the Next-Best-Action to improve customer experience and business results, ensure compliance, fight financial crime, and safeguard people and assets. NICE solutions are used by over 25,000 organizations in more than 150 countries, including over 80 of the Fortune 100 companies. [www.nice.com](http://www.nice.com)

