IP CONTACT CENTERS:
INTRO TO IPCC TECHNOLOGIES,
CONCEPTS, AND TERMINOLOGY
SESSION VVT-1N10

Agenda

• What Is a Contact Center?
• Contact Center Concepts and Terminology
• Call Handling Strategy
• The Future of Contact Centers
What Is a Contact Center?

Contact Centers Are How Your Company Interacts with Your Customers...

- They can be revenue generating such as an outbound telemarketing center or inbound order-taking line
- They can be cost centers such as technical support centers or customer-service lines

In Either Case, They May Be the Only “Face” Your Customers Know

What Is a Contact Center?

Contact Centers Have Evolved from Simple Voice Systems to Multichannel Network-Based Solutions in Less than 30 Years!

1970s
- Single Side, Nodal ACD “Refrigerators”

1980s
- Self-Service Applications with Voice Response Units as Part of the Contact Center

1990s
- Data Collected and Presented to Agents with CTI
- Multisite Routing of Calls with ICM

Beyond
- Multichannel Integration of Web and Email with Voice
- IP Telephony and Advanced Speech Applications
What Is a Contact Center?

Contact Center Evolution...

Before There Were Contact Centers, There Were PBX Switches—which Allowed Customers to Better Manage Their Telephony Infrastructure

Companies Realized They Had Workers Who Did the Same Job Taking the Same Types of Phone Calls All the Time—and Grouped Them Into Teams

The Airline Industry Was the First to Recognize the Significant Savings They Could Achieve with Contact Centers—Continental Airlines Commissioned the First ACD to Be Designed by Rockwell in 1972

Many of the Terms We Know Today Came from That Original Development...

- Agents
- Gates
- Queues

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What Is a Contact Center?

Contact Center Evolution...

In the Early 1980s Interactive Voice Response or VRUs Became Popular to Extend the Workforce to Include “Silicon Agents”

Customers Can Complete Many of Their Transactions in the IVR and Only “Opt Out” to Speak to an Agent When They Have a Specific Question

As Companies Added IVR and Prompting to Their Contact Centers, They Needed to Send that Data to the Agent with the Call—Callers Would Not Need to Be Reinterviewed Again and Again...

CTI Applications Began to Appear at the Agent Desktop in the Early 1990s—Integrated to “Green Screens” with Mainframe Data Connections and by the Mid 1990s with More Sophisticated Third-Party Call Control at the Desktop
What Is a Contact Center?

Contact Center Evolution...

As Companies Leveraged the Contact Center for More and More of Their Business Functions, They Added More Centers—Interconnecting Them with Expensive Tie Lines across Multiple Vendor Switches and ACD Types.

Contact Center Evolution...

Multiple Contact Centers Lead to Duplication of Hardware and Agent Resources—Very Expensive Under Used Resources across the Sites—This Is Where the ICM Came in 1996 with Prerouting, Increasing Agent Occupancy Across the “Virtual Center”
What Is a Contact Center?

Contact Center Evolution...

In the Early 2000s the Contact Center Changed to Include Web and Email Interactions with “Universal Queue”
Interacting with Customers Moved from the Traditional “Call Center” to a Multichannel Contact Center where Agents Handle Multiple Channels

IP Communications Allowed Contact Centers to Use the Power of IP to Locate Their Agents Anywhere and To Bring in New Applications Faster Using Standards-Based Interfaces and Protocols
Calls Queue in the Network and Only Are Sent to Agents When They Are Available
### Types of Contact Centers

**What Is a Contact Center?**

Contact Centers Designs Are Motivated by Their Type or Purpose in the Organization

<table>
<thead>
<tr>
<th></th>
<th>Revenue Generating</th>
<th>Cost Center</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective</strong></td>
<td>Take Orders</td>
<td>Provide Support</td>
</tr>
<tr>
<td><strong>Staffing</strong></td>
<td>More Agents/ Lower Skill</td>
<td>Fewer Agents/ Higher Skilled</td>
</tr>
<tr>
<td><strong>Queue Length</strong></td>
<td>Minimize—Don’t Want to Lose Orders</td>
<td>Balanced—Customers Will Wait for Support</td>
</tr>
<tr>
<td><strong>Self Service</strong></td>
<td>Limited—Customers Want Live Agents and Can Up Sell More</td>
<td>Balanced—Self Service and Web Good Tools to Teach Customers</td>
</tr>
</tbody>
</table>
Agenda

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• The Future of Contact Centers

Contact Center Terminology and Concepts

Concept: Caller Experience

• **Caller experience** is how your customers are treated when they use your contact center; many organizations use this concept to shape their “customer focused” contact center strategy.
Contact Center Terminology and Concepts

Concept: Caller Segmentation

- **Caller segmentation** is the process of identifying callers by type—then providing different treatment by that type; for example, giving higher priority to premium callers.

  Customer Calls Gold Member Line → System Queues Caller at Higher Priority (P=7) → Call Is Routed to a Premium Agent (5 Seconds)

  Customer Calls Customer Service Line → System Queues Caller at Higher Priority (P=2) → Call Is Routed to Any Customer Service Agent (20 Seconds)

Concept: Service Level

- **Service level** is a measure of how quickly calls are answered by the agents over time and expressed as a percent of calls answered within a target window, for example:

  80% of Calls Answered within 20 Seconds

  Customer Calls the Sales Hot Line → No Agents Available, Call Held in Queue → Agent Becomes Available, Gets Call

  Call Duration (2 Min., 30 Sec.) → Call Treatment (10 Seconds) → Agent Talk Time (2 Minutes)

  Service Level Window—20 Seconds → This Call "Broke" the Service Level
Contact Center Terminology and Concepts

Concept: Average Speed of Answer (ASA)

- Average speed of answer is a measure of how quickly calls are answered by the agents over time and shows how efficient the agents are in the call centers.

<table>
<thead>
<tr>
<th>Call #</th>
<th>Queue Time</th>
<th>Talk Time</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10 Seconds</td>
<td>30 Seconds</td>
<td>40 Seconds</td>
</tr>
<tr>
<td>2</td>
<td>45 Seconds</td>
<td>120 Seconds</td>
<td>185 Seconds</td>
</tr>
<tr>
<td>3</td>
<td>20 Seconds</td>
<td>90 Seconds</td>
<td>110 Seconds</td>
</tr>
</tbody>
</table>

ASA: 25 Seconds

Concept: Average Handle Time (AHT)

- Average handle time is a measure of how long agents spend on each contact—it includes both the talk time with the customer and any “wrap up” time after the call is over.

<table>
<thead>
<tr>
<th>Call #</th>
<th>Talk Time</th>
<th>Wrap-Up Time</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30 Seconds</td>
<td>10 Seconds</td>
<td>40 Seconds</td>
</tr>
<tr>
<td>2</td>
<td>120 Seconds</td>
<td>60 Seconds</td>
<td>180 Seconds</td>
</tr>
<tr>
<td>3</td>
<td>90 Seconds</td>
<td>30 Seconds</td>
<td>120 Seconds</td>
</tr>
</tbody>
</table>

AHT: 113 Seconds
Contact Center Terminology and Concepts

Concept: Agent Occupancy

- **Agent occupancy** is a measure of how busy agents are handling contacts; it is usually shown as a percentage of their time used actually handling contacts vs. time logged on.

<table>
<thead>
<tr>
<th>Agent</th>
<th>Login Time</th>
<th>Talk Time</th>
<th>Wrap-Up Time</th>
<th>Break Time</th>
<th>Occupancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4 H, 30 M</td>
<td>3 H, 10 M</td>
<td>0 H, 15 M</td>
<td>0 H, 15 M</td>
<td>75.93%</td>
</tr>
<tr>
<td>2</td>
<td>6 H, 30 M</td>
<td>3 H, 15 M</td>
<td>1 H, 30 M</td>
<td>1 H, 15 M</td>
<td>73.08%</td>
</tr>
<tr>
<td>3</td>
<td>8 H, 00 M</td>
<td>5 H, 30 M</td>
<td>2 H, 10 M</td>
<td>1 H, 30 M</td>
<td>95.83%</td>
</tr>
</tbody>
</table>

Contact Center Terminology and Concepts

Concept: Workforce Management

- **Workforce management** is the staff planning and forecasting that is done to determine the correct number of agents required to meet the projected call load for a call center; it uses historical metrics like agent occupancy, handle time, wrap up as well as projected call volumes to plan for staffing.

These Calculations Can Be Automated with Workforce Management Systems that Use Real-Time Data from the Contact Center
Contact Center Terminology and Concepts

Concept: Inbound vs. Outbound

• **Inbound contact** centers accept calls and contacts from customers—the customer initiates the contact

• **Outbound contact** centers call the customer directly—they initiate the contact with the customer

These Contact Types Can Also Be “Blended” so Agents Can Take Both Inbound and Make Outbound Calls Based upon Activity in the Contact Center

Concept: Outbound Predictive Dialing

• **Outbound predictive dialing** allows contact centers to make multiple outbound calls for each agent because not all outbound calls actually get to a live customer

Available Agent  Predictive Dialer  Busy Signal Call Back Later

Ring to Voice Mail Call Back Later

Rings to Customer Connect to Agent
Contact Center Terminology and Concepts

Concept: Prerouting vs. Post Routing

- **Prerouting** is when call-routing decisions are made in the carrier network before they are sent to a contact center.

  
  
  - PSTN
  - ICM Call Router
  - Agent at Site #1: State: Not Ready
  - Agent at Site #2: State: Ready

- **Post routing** is when call-routing decisions are made after a call has been terminated in an IVR or at an agent to redirect the call.

  
  
  - Press 1 for Sales
  - ICM Call Router
  - Agent at Site #1: State: Not Ready
  - Agent at Site #2: State: Ready


Contact Center Terminology and Concepts

Concept: Voice Self Service (IVR)

- **Voice self service** provides service to your customers with an Interactive Voice Response (IVR) system rather than offering them a live agent to assist them.

  
  
  - Enter your 16-Digit Account Number and Press #
  - Your Balance Is $542.12 as of Today, June 17th…
  - QRY*BAL*1234553299323233
  - BAL*1234553299323233*542.12
  - ^PMT23.50:DUE081504
Contact Center Terminology and Concepts

Concept: Speech-Enabled Self Service

- **Speech-enabled self service** provides a higher level of interaction with the caller using an IVR with Automatic Speech Recognition (ASR) and Text to Speech (TTS)

   ![Diagram of speech-enabled self service interaction]

- Thank You for Calling Helpful Airlines, How Can I Help You Today?
- Ok, Your Flight 928 from Chicago O'Hare isDelayed until 8:30 PM. I have an Earlier Flight at 4:55 PM, Would You Like to Try That?
- Is My Flight Number 928 to London on Time Today?
- Let Me Check
- QRY*XX928*STA
- QRY*ORD*LHR
- QRY*XX928*STA
- QRY*ORD*LHR

Contact Center Terminology and Concepts

Concept: CTI: Screen Pop

- **CTI: screen pop** is computer telephony integration with data about the caller being presented to the agent with the call; this data saves time with the caller, plus can be used to shorten the wrap-up time

   ![Diagram of CTI: screen pop interaction]

- Enter Your 16-Digit Account Number and Press #
- Hello Mrs. Jones, Can I Help You Make Your Payment of $23.50?
- QRY*BAL*1234553299323233
- BAL*1234553299323233^542.12
  *PMT23.50:DUE081504:
  JONES,DONNA<MRS>
Contact Center Terminology and Concepts

Concept: CTI: Third-Party Call Control

- **CTI**: third-party call control is computer telephony integration that allows the agent to use their computer screen to perform common phone functions, like conference and transfer without touching the phone; saves time for the agent and allows them to keep their focus on the computer screen, not the phone.

  ![Diagram](image1)

  - Can I Talk to a Mortgage Officer?
  - Agent #1
  - Agent #2
  - Mrs. Jones, How Can I Help You?
  - Of Course, Let Me Transfer You Now…

Contact Center Terminology and Concepts

Concept: Email Management

- **Email management** is the contact routing solution for emails from your customers; email can have an “auto reply” to set customer expectation (service level) and tracked to ensure agents reply to customer requests.

  ![Diagram](image2)

  - To: sales@cisco.com
  - Auto Reply
  - Email Manager
  - Agent #1
  - Agent #2
  - Agent #3
Concept: Web Contacts: Chat

- Chat allows the agent and customer to carry on a text conversation using their web browser, agents can use "standard responses" and even have multiple chat sessions at once with multiple customers to be more productive.

Concept: Web Contacts: Web Call Back

- Web call back is a function you can add to your web site to offer "live assistance" to users of your web site—allowing them to talk to somebody to help them complete an order or find information on your web site.
Concept: Web Contacts: Cobrowsing

- **Cobrowsing** allows the agent and customer to both share the same web page on your web site, allowing the agent to push pages to the customer and help them find items on the web site and place their order directly.

Concept: Universal Queue

- **Universal queue** is the blending of multiple contact channels to a group of agents, based upon their ability and skill profile; having one “routing engine” to apply business rules to the contacts for the organization.
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• Call Handling Strategy
• The Future of Contact Centers

Call Handling Strategy

• Call handling strategy is the business rules by which your organization manages your customer contacts; it is driven by several key factors:
  Type of contact center—revenue vs. cost

• A revenue generating contact center might not send callers to an IVR for self service first before offering the call to an agent—the longer a caller has to wait before being able to place an order, the more chance they have to abandon the call

- Customer Calls
  Orders Line

- System Only Prompts for More Information when there Are No Agents
Call Handling Strategy

Type of Contact Center—Revenue vs. Cost

- A **cost center** contact center might have the caller perform their own caller identification in an IVR—prompting for a contract number and case number before sending the call to an agent—saving the agent time with CTI screen pop data.

<table>
<thead>
<tr>
<th>Customer Calls Tech Support</th>
<th>System Prompts for Contract/Case ID and Provides FAQ Help in Queue for Self Service</th>
<th>Agent Gets CTI Data with Call</th>
</tr>
</thead>
</table>

Call Handling Strategy

Type of Contact—Email, Voice, or Web

- **Web and voice** contacts need immediate assistance, email can be queued and responded to later when agents are free.

<table>
<thead>
<tr>
<th>Web Chat, Call Back, Browsing</th>
<th>Voice Call</th>
<th>Agent Pool</th>
</tr>
</thead>
</table>
| To: sales@cisco.com | P1 = Voice  
P2 = Web  
P3 = Email | Multichannel Routing  
Universal Queue |
Call Handling Strategy

Type of Contact—Voice vs. Web

- Customers on your web site might be in a better “place” to be helped than a voice caller who can’t get to your FAQ and online documentation links.

Type of Contact—Toll-Free or Toll-Based

- Calls to your company on toll-free numbers cost your business money, even when they sit in queue; these can be routed to agents faster than toll or local numbers.
Call Handling Strategy

Type of Contact—Voice with Caller Segmentation

- Calls from your best customers should be given priority treatment, either by giving them their own number to dial or by prompting for an ID number to give them priority.

Customer Calls Gold Member Line → System Queues Caller at Higher Priority (P=7) → Call Is Routed to a Premium Agent (5 Seconds)

Customer Calls Customer Service Line → System Queues Caller at Higher Priority (P=2) → Call Is Routed to Any Customer Service Agent (20 Seconds)

Most Contact Centers Employ a Mix of These Strategies Across Their Contact Centers, with the Key Objectives:

- **Maximize agent occupancy**
  65% of the costs of a contact center are the agents
  Goal: cost savings

- **Reduce customer wait times**
  Majority of calls abandon within the first 31.2 seconds
  Goal: customer satisfaction

- **Reduce operating costs**
  Telephony charges account for 25% of costs
  Goal: cost savings
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Future of Contact Centers

“IP-enabled technology is the future of contact centers.”

Drew Kraus
Principal Analyst
Gartner
Future of Contact Centers

• In less than three decades, contact centers have moved from simple nodal voice systems to tightly integrated multichannel voice, web, email contact management solutions
• What’s next?
  • IP communications—IP allows for full location independence, agents are no longer bound by the “call center” but can be anywhere on the IP network; IP also makes it easier to integrate business applications and databases to put information at your agents fingertips and make them more productive

Future of Contact Centers

What’s Next?

• More personalized contact—understanding your customer’s needs and not only answering his contact but getting him to the right person—in the contact center or any knowledge worker anywhere in the organization...
• In today’s world, contacts are handled first by a generalist in a call center, then escalated to a specialist—what if we could use what we know about the customer to get them in contact with the specialist on the first contact?
• Knowing who your customers interact with can make it easier to make these connections
Future of Contact Centers

What’s Next?

• **Smarter contact devices**—It’s not just about phones—it’s about “presence” and “context”; the network can see your knowledge workers as they use their PDA, mobile phone, and wireless networks, where they can be reached for contact in the context they have available...

Future of Contact Centers

What’s Next?

• **Enhanced self service**—beyond today’s speech-enabled applications, using more advanced speech recognition systems to better understand the customer’s natural language and allow them to drive the interaction and perform transactions easily without pressing the “#” key

• **Multimodal communications**—today’s multichannel contact centers allow for blending of web, email, and voice—but being able to move between the channels in the same contact, while maintaining full call context and reporting across all the applications will greatly improve customer satisfaction and efficiency within the organization
Associated Sessions

For Additional Information Please Attend the Following Sessions:

- **VVT-2011**—Internet Service Node for IP Contact Centers
- **VVT-2012**—Troubleshooting IP Contact Centers
- **VVT-2013**—Designing IP Contact Centers: Resources, Servers, and Bandwidth Provisioning
- **VVT-2014**—Centralized and Distributed Deployment Models for IP Contact Centers
- **VVT-2015**—IP Contact Centers: Clustering over the WAN (High Availability and Resiliency)
- **VVT-1T01**—Designing an Enterprise IP Telephony Network