What is CTI?

This chapter provides a context in which to understand CTI. It includes the following:

- Discussion of what CTI is and why it is useful.
- An example of Cisco’s approach to CTI.

Note

Throughout this document the presentation will be cast in terms of telephones and calls. This is in part because it takes a while for terminology to catch up with reality (sometimes it never does—for example, one still speaks of “dialing a phone number” even when there is no dial). However, keep in mind that telephony represents a medium, and a call is an interaction. The medium might just as well be the Internet. The interaction might just as well be an e-mail message, a faxed document, or a Web entry. The underlying Cisco technology will work the same regardless of the medium or the interaction.

Computer Telephony Integration

CTI stands for Computer Telephony Integration. It involves integrating computer systems with telephony resources to augment the capabilities of a call center.
Why Implement CTI?

CTI gives you the ability to:
- Automate processes
- Centralize control and tracking
- Save money
- Increase customer satisfaction
- Increase productivity
- Make expertise more accessible
- Provide sales opportunities
- Personalize service
- Improve quality

Terminology

As with most specialized areas, CTI has a terminology of its own, mostly consisting of acronyms. What follows is a list of some of the more common terms.

*ACD* (Automatic Call Distributor) – a telephony switch that provides methods for the distribution of calls

*agent* – a person who interacts with the caller

*ANI* (Automatic Number Identification) – the telephone number from which the call originated, that is, the caller’s phone number

*call data* – the collection of ANI, DNIS, CED, and any other call-specific information that is carried along with the call

*CallPath* – a call control model developed by IBM

*CED* (Caller-Entered Digits) – the numerical representation of the *DTMF* tones generated by the caller pressing buttons on the telephone, usually in response to requests from an IVR

*CSR* (Customer Service Representative) – synonym for *agent*

*CSTA* (Computer-Supported Telecommunications Applications) – a CTI standard that defines a publish/subscribe message model
DNIS (Dialed Number Identification Service) – an identifier for the telephone number being called

DTMF (Dual Tone Multi-Frequency) – the tones generated when a button is pressed on a telephone, primarily used in the U.S. and Canada

IVR (Interactive Voice Response unit) – a device that receives information from a caller, usually via a touch-tone phone, and transmits information to the caller via a digitally synthesized voice

JTAPI (Java Telephony API) – a call control model developed by Sun Microsystems

PABX – synonym for PBX

PBX (Private Branch eXchange) – a telephone switch

screen pop(ulation) – the display on the agent’s screen of information (usually the call data) associated with the call/caller

screen sync(hronization) – synonym for screen pop

TAPI (Telephony API) – a call control model developed by Microsoft/Intel

TAPI Service Provider – the element of the TAPI protocol that provides the actual telephony service

TSAPI (Telephony Services API) – a call control model developed by Avaya/Novell

VRU (Voice Response Unit) – synonym for IVR

Additional terms and definitions are provided in the Glossary.

An Example of Cisco CTI at Work

This somewhat artificial example illustrates a number of the aspects of Cisco CTI.

1. A customer, Bob, calls the XYZ Company from home.

2. The Cisco CTI software looks at the ANI, compares it to a database, and determines that the caller is Bob, and that Bob’s native language is French.

3. From the DNIS, the Cisco CTI software discovers that Bob is calling the special “800” number set up for XYZ’s new offer for upgraded services.
4. Bob’s call is routed to a French-speaking IVR, which collects information from Bob and presents the various offers to him. However, Bob has some particular questions that he wants to ask, and presses 0 in order to speak with an agent.

5. Bob is transferred to another call center, where there is a French speaking agent familiar with the product that Bob is interested in. Through a screen pop, the agent receives the information that Bob gave to the IVR.

6. Responding to Bob’s questions, and using the IVR information, the agent efficiently completes Bob’s current transaction.

7. In addition to the IVR-collected information, the screen pop also displays the results of various database lookups. From one of these, involving Bob’s past dealings with the company, the agent recognizes the possibility of Bob’s being interested in another offering that compliments the one he called about. Bob is interested.

8. After completing this second transaction, the agent mentions to Bob that the last time Bob called he was concerned about a mistake in his monthly statement. (This too was displayed in the screen pop as a result of a database lookup.) Was that resolved to his satisfaction? It was. Bob thanks the agent for the prompt and courteous service, and hangs up.

An Example of a Positive Interaction

What was good about the preceding example is that:

- Though Bob requested to be transferred from IVR to agent, the automatic routing both to the IVR, and to the agent at another call center, was correct each time. There was no aimless rerouting and bouncing around from one agent to another. This was made possible, in large part, by the centralized knowledge of the whole system (including multiple call centers) that was available to the Cisco CTI software.

- Bob never had to restate any information that he had already put into the system; the information flowed with his call. All of this led to a decrease in costs for XYZ and an increase in satisfaction for Bob.

- The agent was more productive because the call received required precisely the expertise that the agent had.

- The agent was also made aware of, and used, the opportunity for up-selling.
• Because of the knowledge the agent had of Bob’s previous interactions with XYZ, the agent was able to bring a personal, helpful touch to the current interaction.

• The result: a quality experience for both Bob and XYZ.
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