网络化智能客户服务中心

CISCO SYSTEMS

Cisco Contact Center Vision

To be the leading provider of Communication-Management software applications that leverage voice and data technologies to create business solutions that facilitate geographic- and media-independent customer interaction

Customer Loyalty

" *Increased customer loyalty is the single most important driver of long-term financial performance.* "

Thomas O. Jones and W. Earl Sasser, Jr.
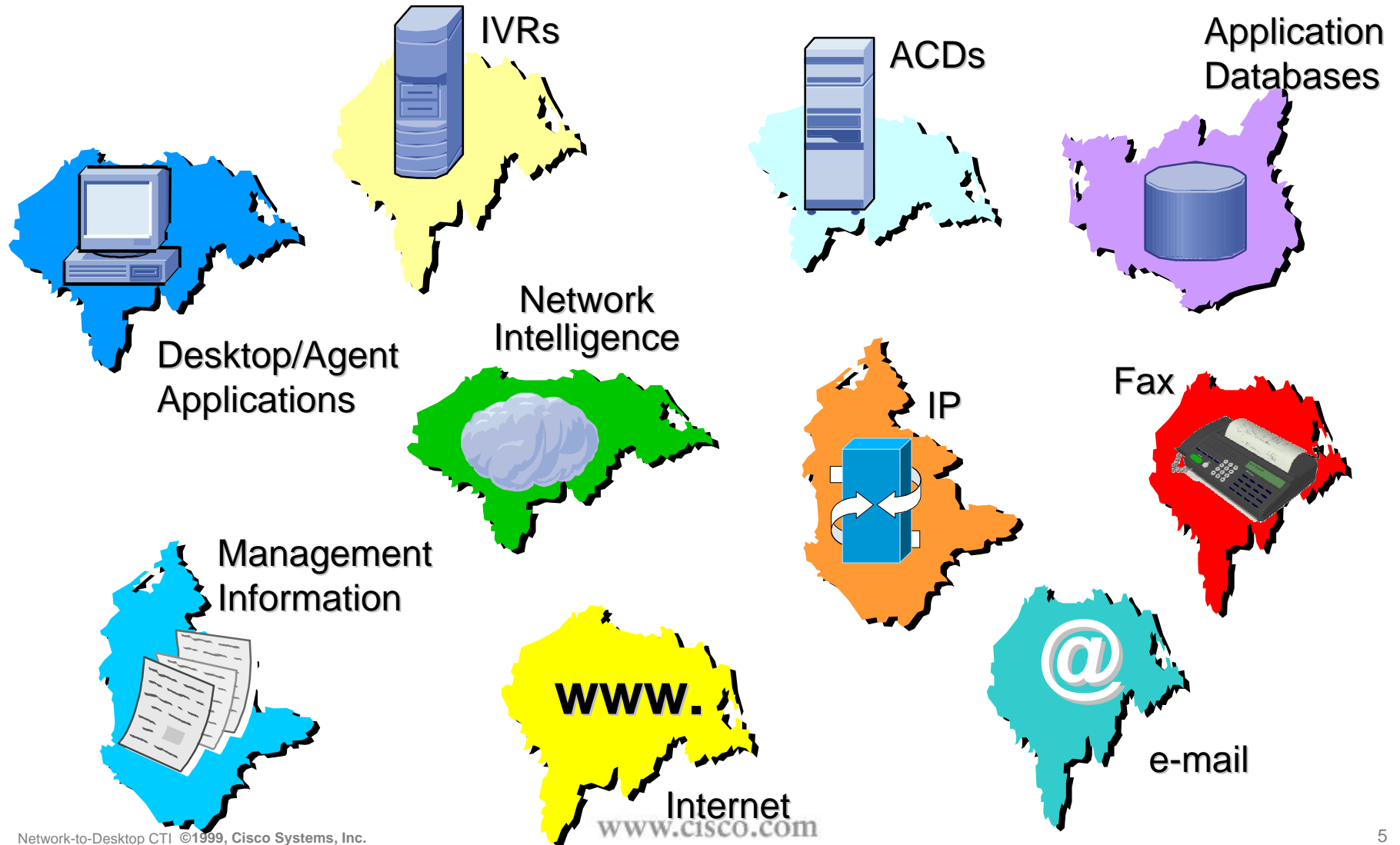
Harvard Business Review

Customer Retention

The Business of Business is getting and keeping customers.

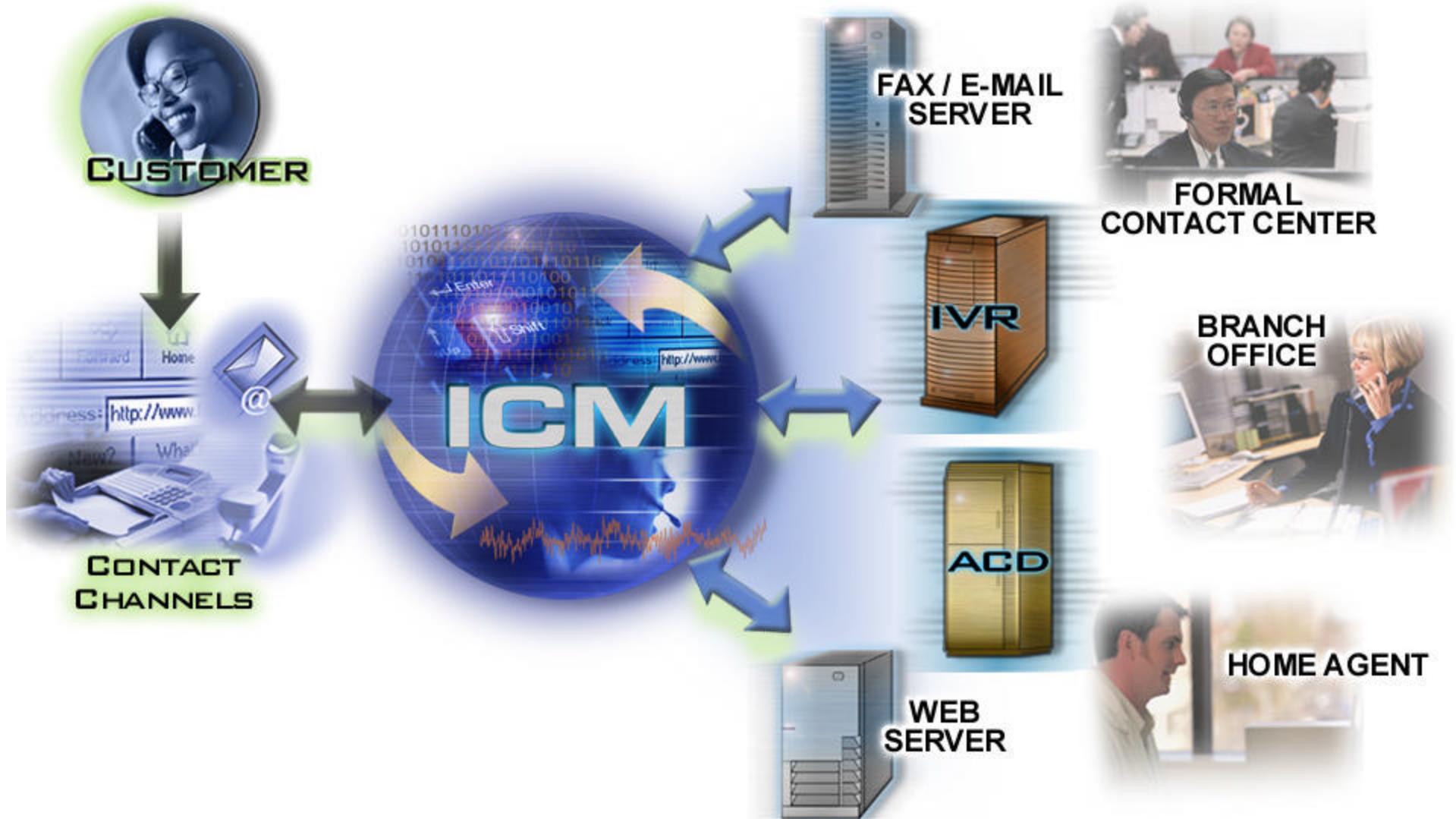P.F. Drucker
Adventures of a Bystander

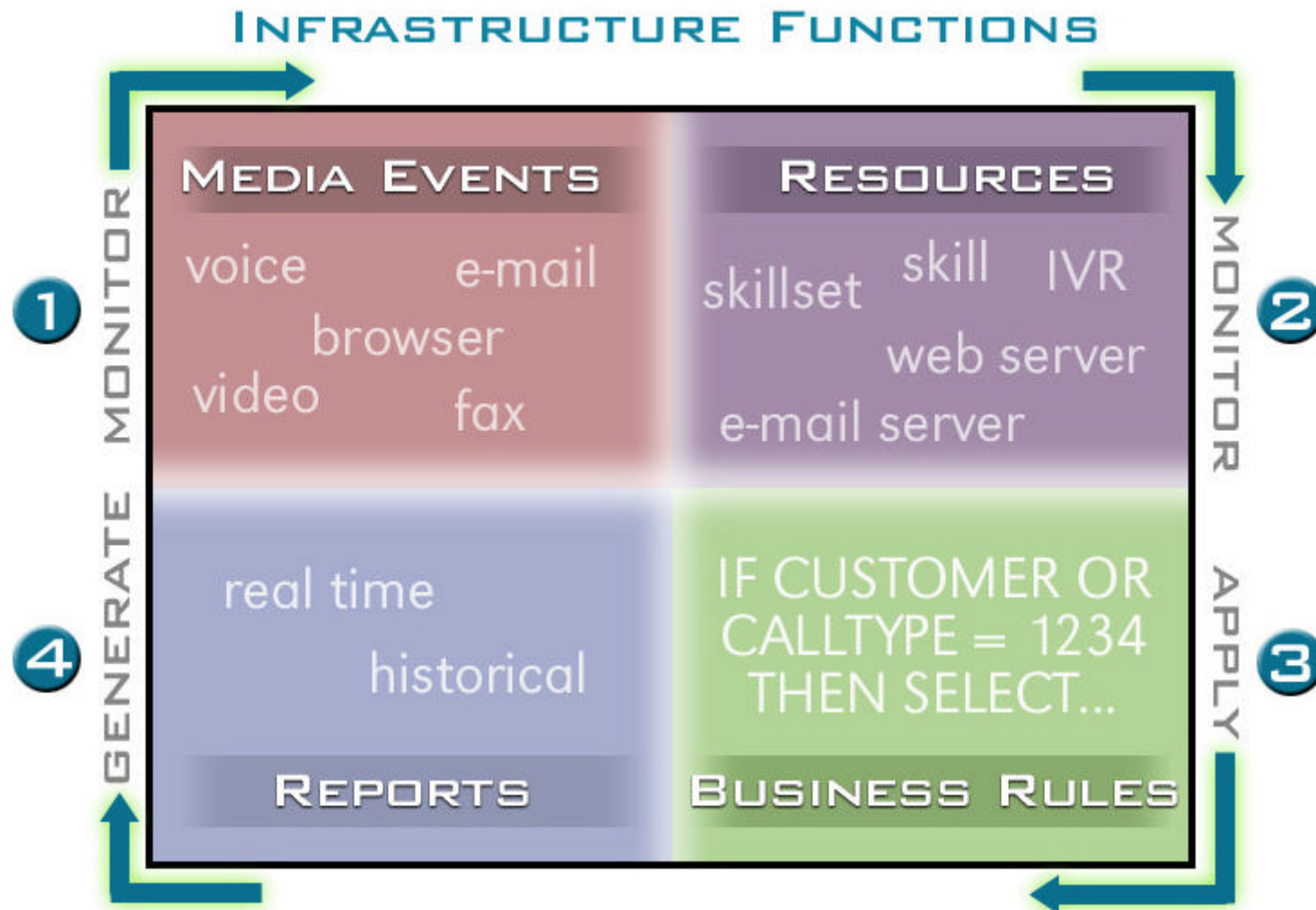# Call Center Applications
Are *Islands of Technology*

IVRs

ACDs

Application Databases

Desktop/Agent Applications

Network Intelligence

IP

Fax

Management Information

www.

Internet

@

e-mail

www.cisco.com

Intelligent Contact Management

Technology Infrastructure

INFRASTRUCTURE FUNCTIONS

MONITOR

1

MEDIA EVENTS

voice   e-mail
    browser
video   fax

MONITOR

2

RESOURCES

skillset   skill   IVR
              web server
e-mail server

GENERATE

4

real time
    historical

REPORTS

APPLY

3

IF CUSTOMER OR
CALLTYPE = 1234
THEN SELECT...

BUSINESS RULES

Architecture:
Network-to-Desktop CTI

PSTN

Internet

NIC

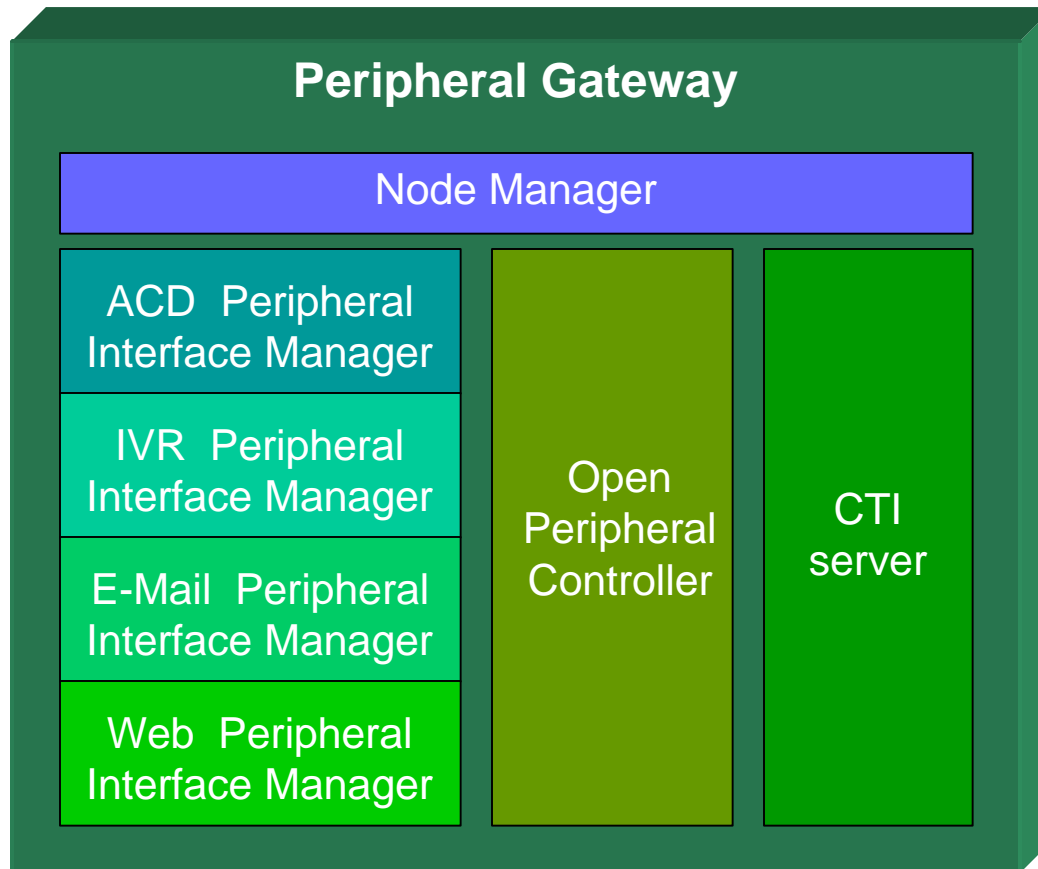**ICM**

PG

Web

Fax/ e-mail

IVR

PG

ACD

Agent

Agent
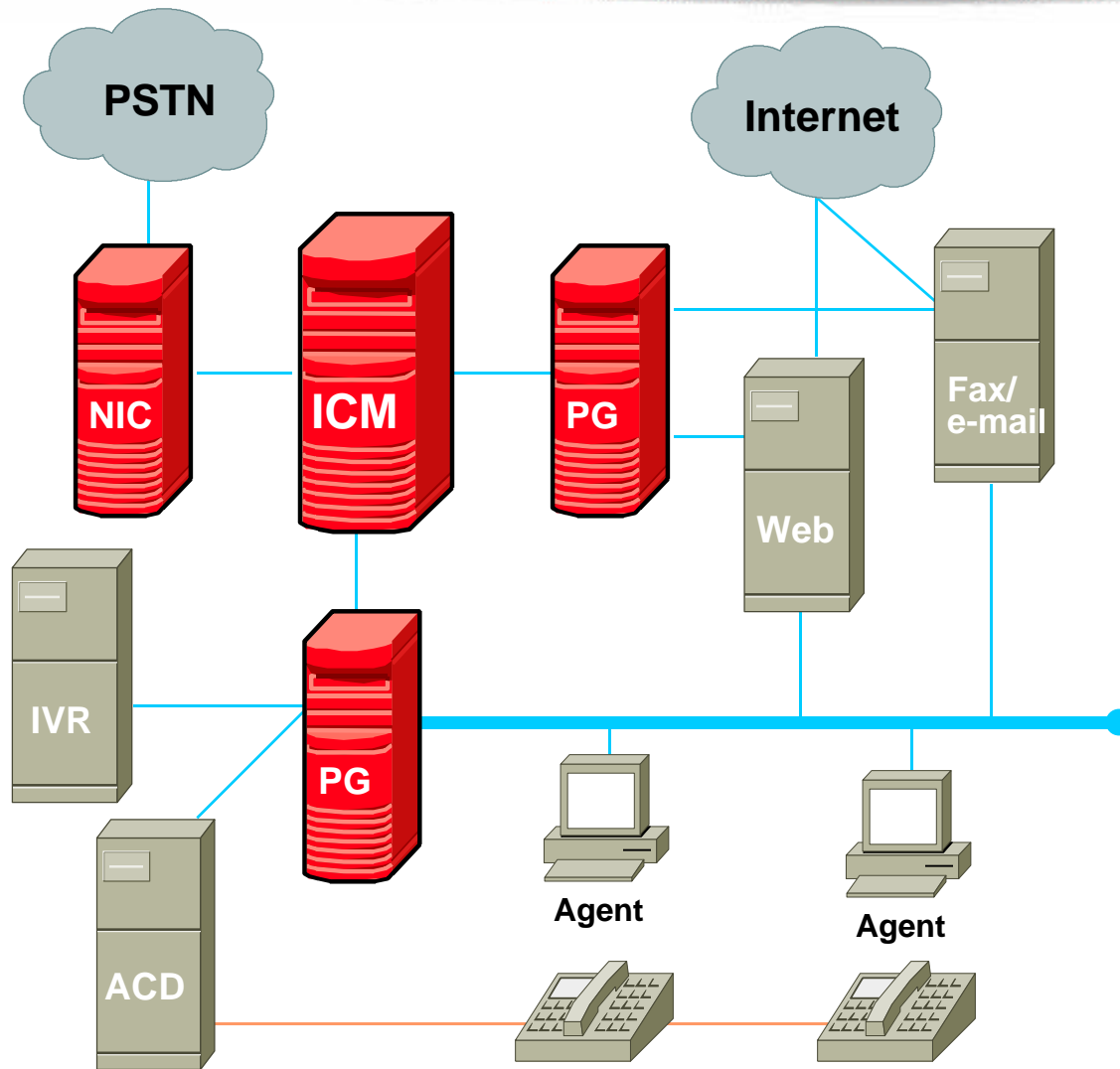
The **ICM/PG architecture creates a Multi-media OS whereby peripherals of any type can be easily added.**

Peripheral Gateways provide a layer of abstraction above peripheral specific interfaces.

Architecture:
Peripheral Gateway

Peripheral Gateway

Node Manager

ACD Peripheral Interface Manager		
IVR Peripheral Interface Manager	Open Peripheral Controller	CTI server
E-Mail Peripheral Interface Manager		
Web Peripheral Interface Manager		

The Peripheral Gateway is a Windows NT Server that runs any of the peripheral-specific interface software.

The Node Manager provides fault tolerance by monitoring each of the software processes running on the PG.

The Open Peripheral Controller provides a layer of abstraction between the ICM system and each of the peripheral types.

The CTI server enables agents to send and receive call events and data.

www.cisco.com

Carrier-class Reliability

- Ensures optimal customer throughput by providing uninterrupted contact processing

- Delivers fully redundant, distributed, carrier-class fault tolerance from network to desktop

- Self-monitoring and self-healing

- Eliminates all single points of failure

- Provides disaster protection

Product Feature:
Distributed Fault Tolerance
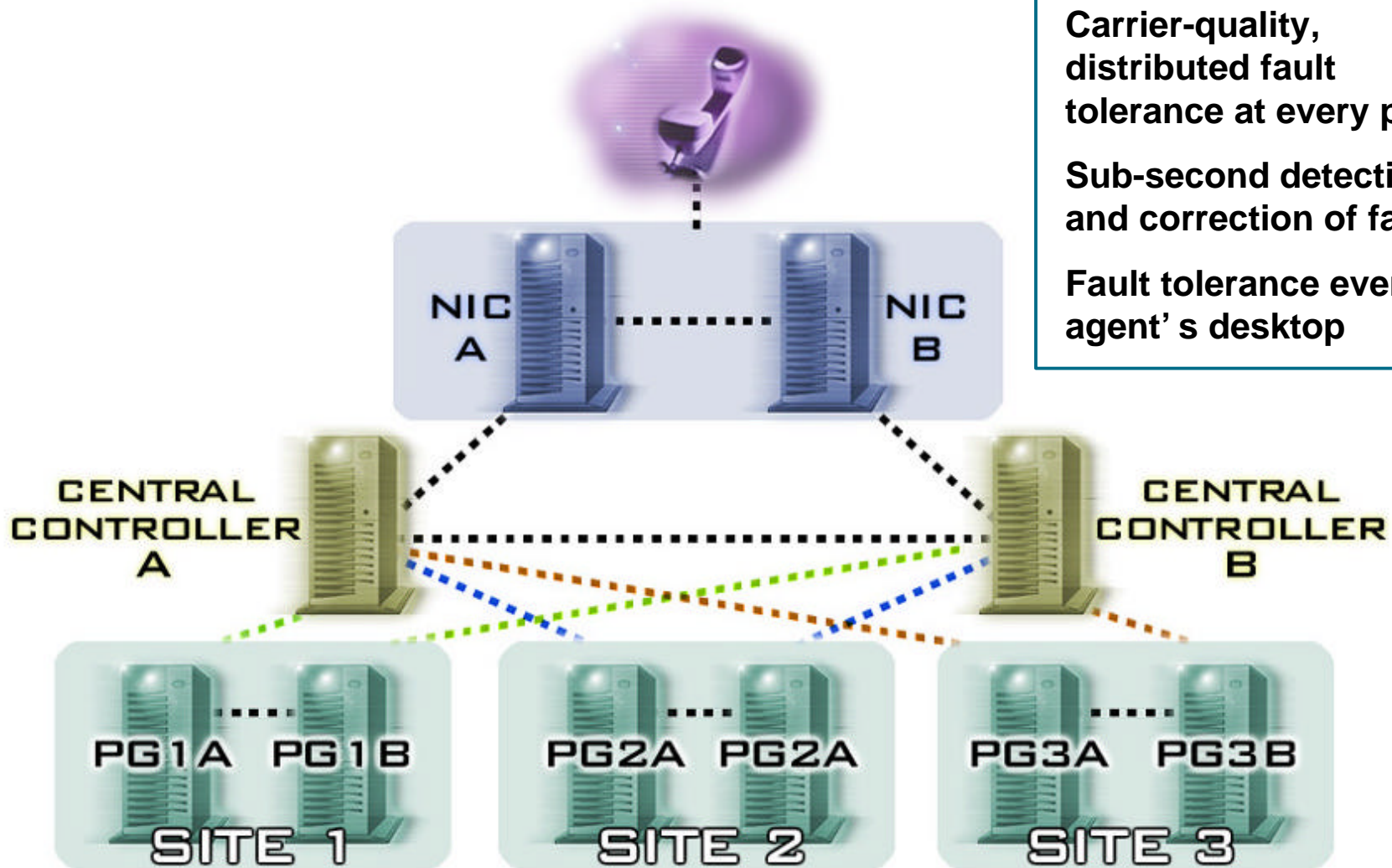
Carrier-quality, distributed fault tolerance at every point

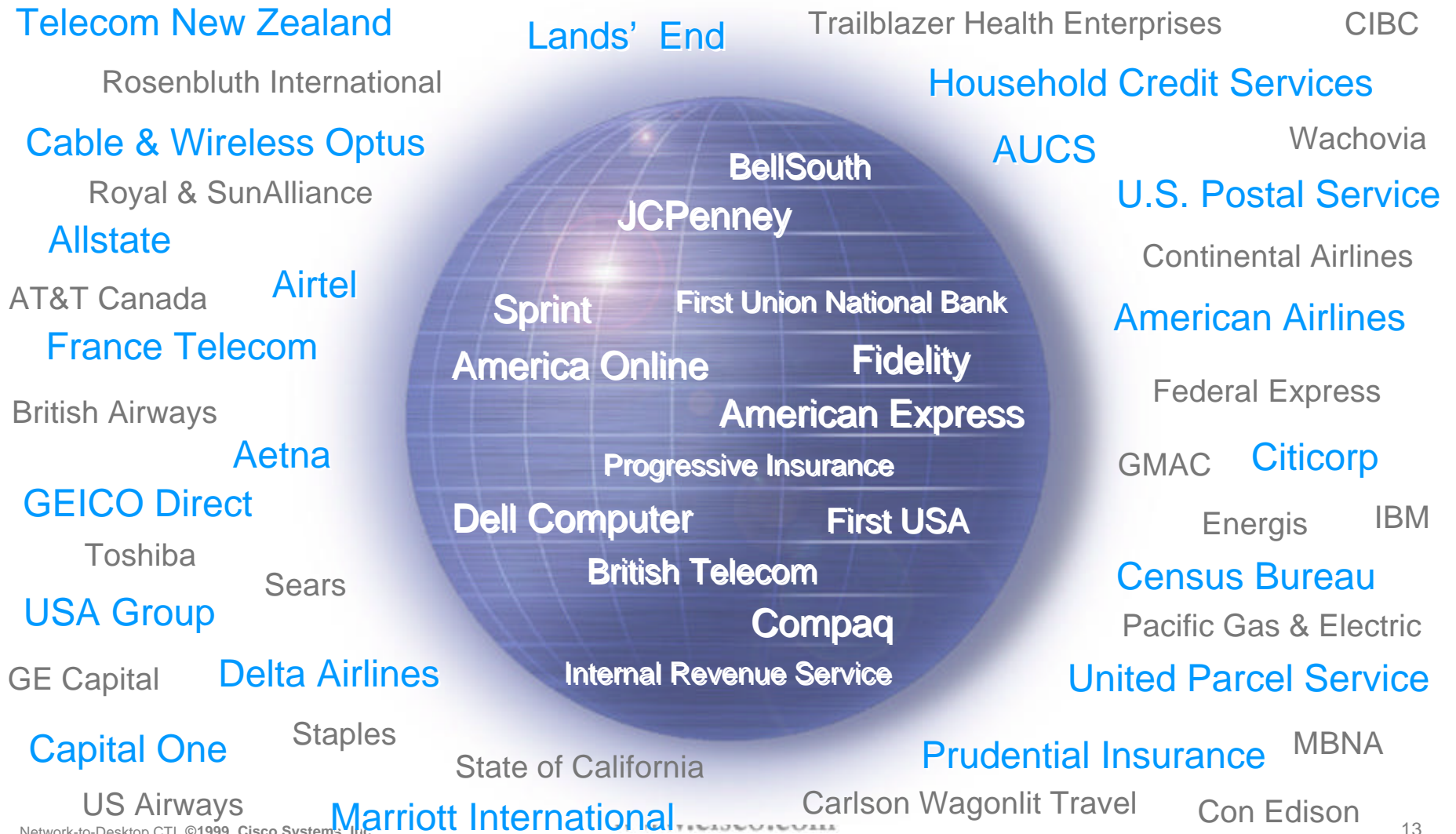**Sub-second detection and correction of faults**

Fault tolerance even at agent' s desktop

NIC A   NIC B

CENTRAL CONTROLLER A   CENTRAL CONTROLLER B

PG1A PG1B   PG2A PG2A   PG3A PG3B

SITE 1   SITE 2   SITE 3

Technology Alliances

Carriers	IVR	CRM	ACD	Call Blending	WFM
AT&T	Argos	Chordiant	Alcatel	Davox	Pipkins
AT&T Canada	AT&T Infoworx	Clarify	Aspect	Melita	TCS
AUCS	Brite	Davox/ Answersoft	Ericsson	EIS	
Bell South	Edify	HP CCM	Lucent		
BT	Conversant	IMA	NEC		
Cable & Wireless	IBM DirecTalk	Octane	Nortel		
Concert	InterVoice	Pegasystems	Rockwell		
Energis	Microlog	Remedy	Siemens		
France Telecom	Periphonics	Siebel	Open CSTA		
MCI	Virtual Hold	Vantive			
Optus	Voicetek				
Sprint	Open API				
Stentor					
Telecom New Zealand					

Representative Customers

Telecom New Zealand

Rosenbluth International

Cable & Wireless Optus

Royal & SunAlliance

Allstate

AT&T Canada

Airtel

France Telecom

British Airways

Aetna

GEICO Direct

Toshiba

Sears

USA Group

GE Capital

Delta Airlines

Capital One

Staples

US Airways

Marriott International

Lands' End

BellSouth

JCPenney

Sprint

First Union National Bank

America Online

Fidelity

American Express

Progressive Insurance

Dell Computer

First USA

British Telecom

Compaq

Internal Revenue Service

State of California

Trailblazer Health Enterprises

CIBC

Household Credit Services

Wachovia

AUCS

U.S. Postal Service

Continental Airlines

American Airlines

Federal Express

GMAC

Citicorp

Energis

IBM

Census Bureau

Pacific Gas & Electric

United Parcel Service

Prudential Insurance

MBNA

Carlson Wagonlit Travel

Con Edison

Business Results

Improvements in Customer Service

ASA decreased from 28 to 8 seconds

Calls in queue reduced by 40%

Handle time decreased from 190 to 160 seconds

Calls handled by IVR increased by 10%

Service levels increased by 7%

Service quality increased by 37%

Contact Center Cost Savings

15% increase in agent productivity

20% reduction in carrier costs

50% reduction in T-1 utilization

22% savings in manpower resources

30% increase in once & done calls

41% faster ROI than anticipated

$900,000 revenue opportunity via 50% reduction of abandoned calls

CTI Benefits

- 12 to 25 seconds saved via screen pop per agent responding to the contact
- 25 to 60 seconds saved via screen pop for each subsequent agent

Case Study – Financial Services Co.
Application: Post-Routing, CTI

Cisco ICM Software BENEFIT — Productivity $\uparrow$ 12%, service level $\uparrow$ 4%, ASA $\downarrow$ by several seconds, balanced metrics across skill groups, E-CTI provided extra 5% savings.

Carrier AT&T	
ACDs Aspect	
IVRs IBM DirectTalk	
CTI Yes	
Sites 12	
Agents 1,200	
Calls 400,000/day	

SITUATION

- ACDs interface with 800 network IVRs – ICM software routes calls that default out of the IVRs – 20% of total calls

ROUTING STRATEGY

- All calls initially sent to network IVRs, callers enter account#
- Load balanced on port availability, host status & skill of port
- Enterprise CTI, translation routing sends data with call to best available agent – saves 30-40 sec./contact & improves security (PIN is validated)
- Third-party application provides screen pop using account#
- Script Monitor feature allowed company to spot flaws in call segmentation schemes – company reworked language to be clearer to callers

Case Study – Financial Services Co.
Application: Multi-Carrier/Multi-Vendor, CTI

Cisco ICM Software BENEFIT

Two merged companies keep their legacy systems, improve customer service and build productive, long-term relationships with customers.

Carriers
AT&T, MCI

ACDs
Lucent, Nortel

IVRs
In network & Intervoice

CTI
Yes

Sites
7

Agents
2,400

SITUATION

- Caller segmentation strategy designed to optimize customer service and contact center efficiency

ROUTING STRATEGY

- As call is received, the ICM system collects CLID – performs DB lookup

- IVR in network prompts caller to enter SS#/account#

- Another DB lookup gathers more detail & determines routing

- Information (as screen pop) and call are delivered to agent

- Based on type of caller, calls are routed to agent skill groups

- System tracks specific skill group customers are routed to each time they call – they' re routed to that group on subsequent calls. As a result, customers are often connected to the same agent every time

Case Study – Household Credit Services
Goal: Improved Customer Service & Cost Savings

Cisco ICM Software BENEFIT — Able to handle more calls with less staff, achieved goal of 80% calls answered within 25 sec., call handle time ↓ from 190 sec. to 160 sec.

Carrier
MCI

ACDs
Nortel

IVRs
IBM
DirectTalk

Sites
4

Agents
900

Calls
30,000/day

SITUATION

All calls were going to one site, then were manually routed – based on fixed percent allocation – to other centers. Result was backed up queues, calls bounced from center to center, wasting time and incurring transfer charges.

ROUTING STRATEGY

- Calls come from network into IVR (50% of calls terminate in IVR) then routed to best available agent

- Reorganized queues and cross trained agents – enabled occupancy rates to increase from 70% to 85-90%

- Cross training ability & virtual contact center enabled acquisitions to be transitioned smoothly – call/data delivery was streamlined, and using a common AR system, "super agents" who can handle any call were created

First Union National Bank
Goal: Improved Customer Service, Cost Savings

Cisco ICM Software BENEFIT

Able to keep legacy systems, enable effective disaster recovery, ↓ wait times, support marketing strategies, ↑ customer service levels, ↓ costs.

Carrier
Dual - AT&T, MCI

ACDs
Aspect, Lucent

IVRs
InterVoice

Sites
21

Agents
5,000

Calls
500,000/day

SITUATION

Had segment-based marketing approach – didn't work well with old switch-based, inter-call-center routing paradigm.

ROUTING STRATEGY

- Calls come in from network – call & caller data collected from IVR prompts and/or CLID-based database lookup – calls routed to best available resource

- Call segmentation strategy ensures that contact center personnel are better prepared to answer calls, and overall customer experience is improved

- Routing parameters can be set to take advantage of intrastate v. interstate toll-free tariff differences

- Can leverage virtual contact center model to enhance product/ service offerings based on customer needs

Centralized Management & Control

- **Implement business rules**

- **Maintain consistent service levels**

- **Generate normalized, consolidated reports**
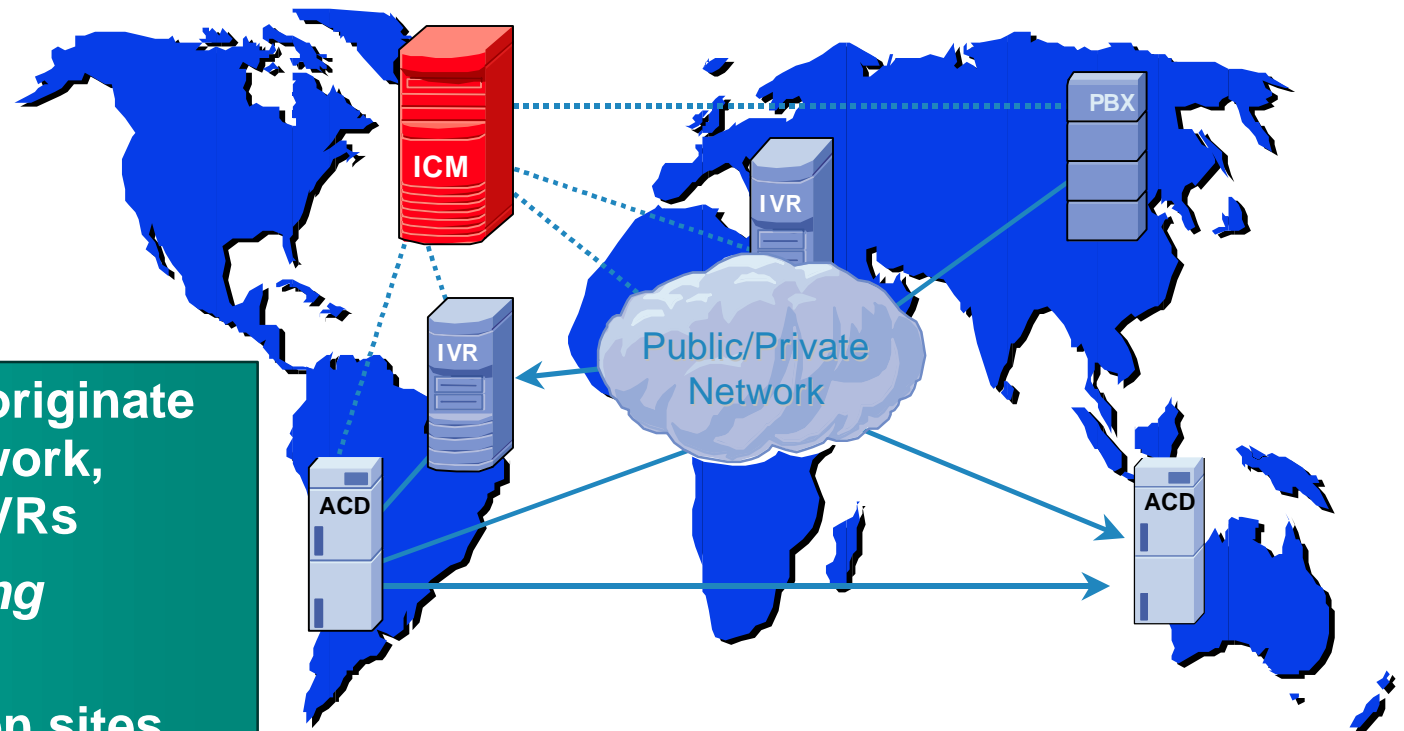
Enterprise-wide Pre-*Routing*
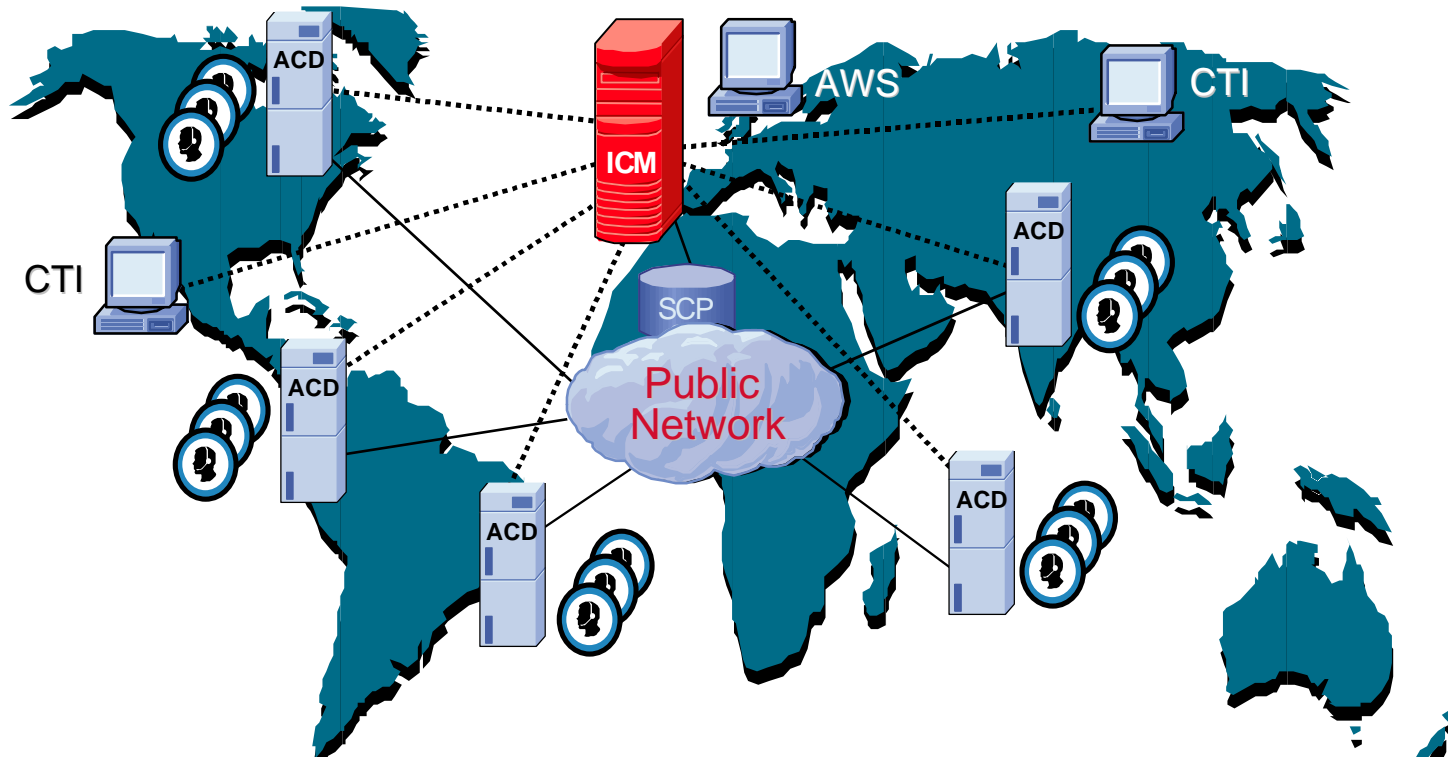
- **Enterprise-wide contact control & routing**
- **Enterprise-wide monitoring & reporting**
- **Enterprise-wide CTI data**
- **Multi-vendor connectivity**
- **Distributed "Large Team" agent groups**

- **Skills-based "Targeted" customer contact routing**
- **Forecasting & scheduling compliance interfaces**
- **Based on industry/open standards**
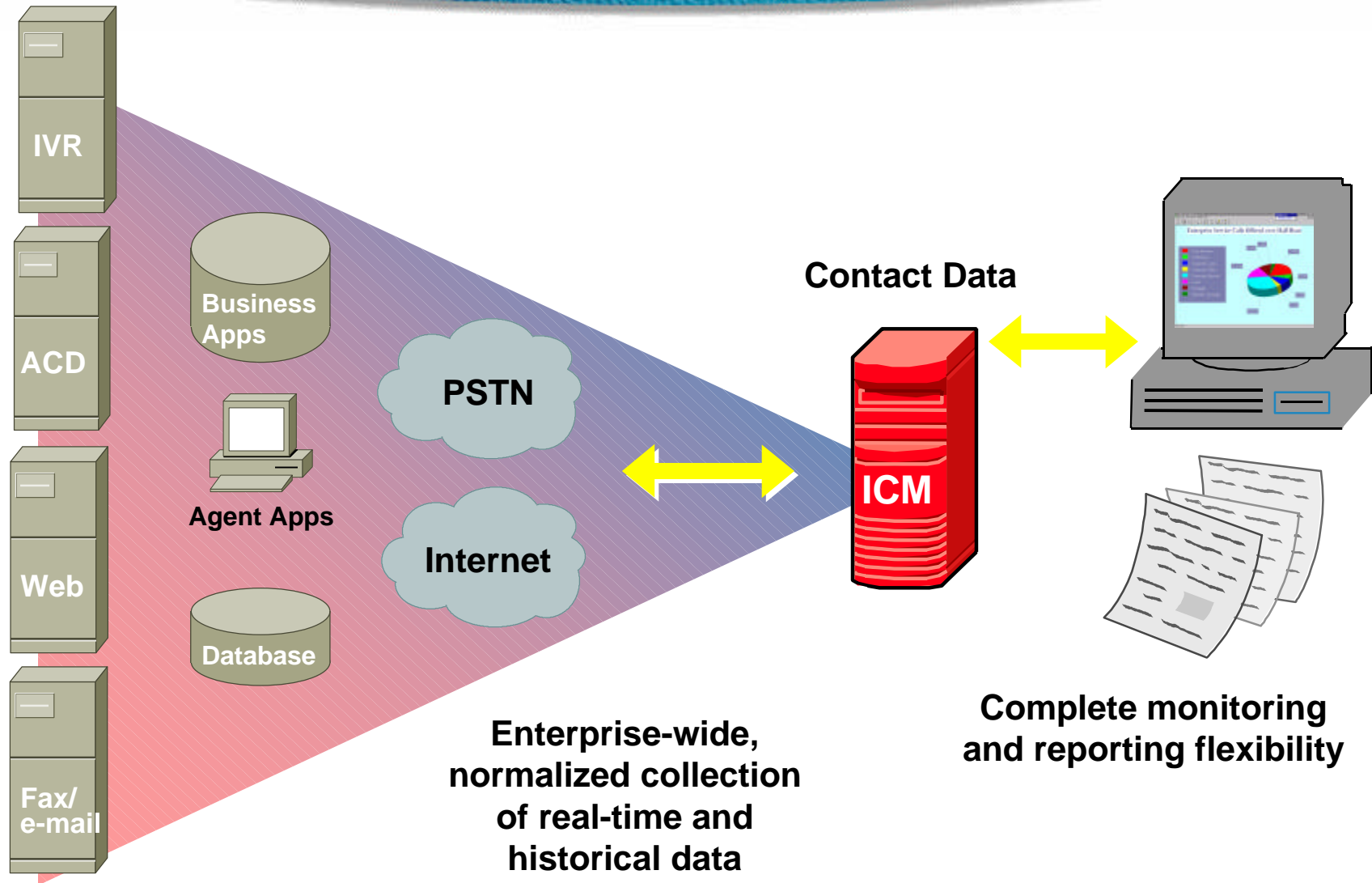
Routing Script Editor
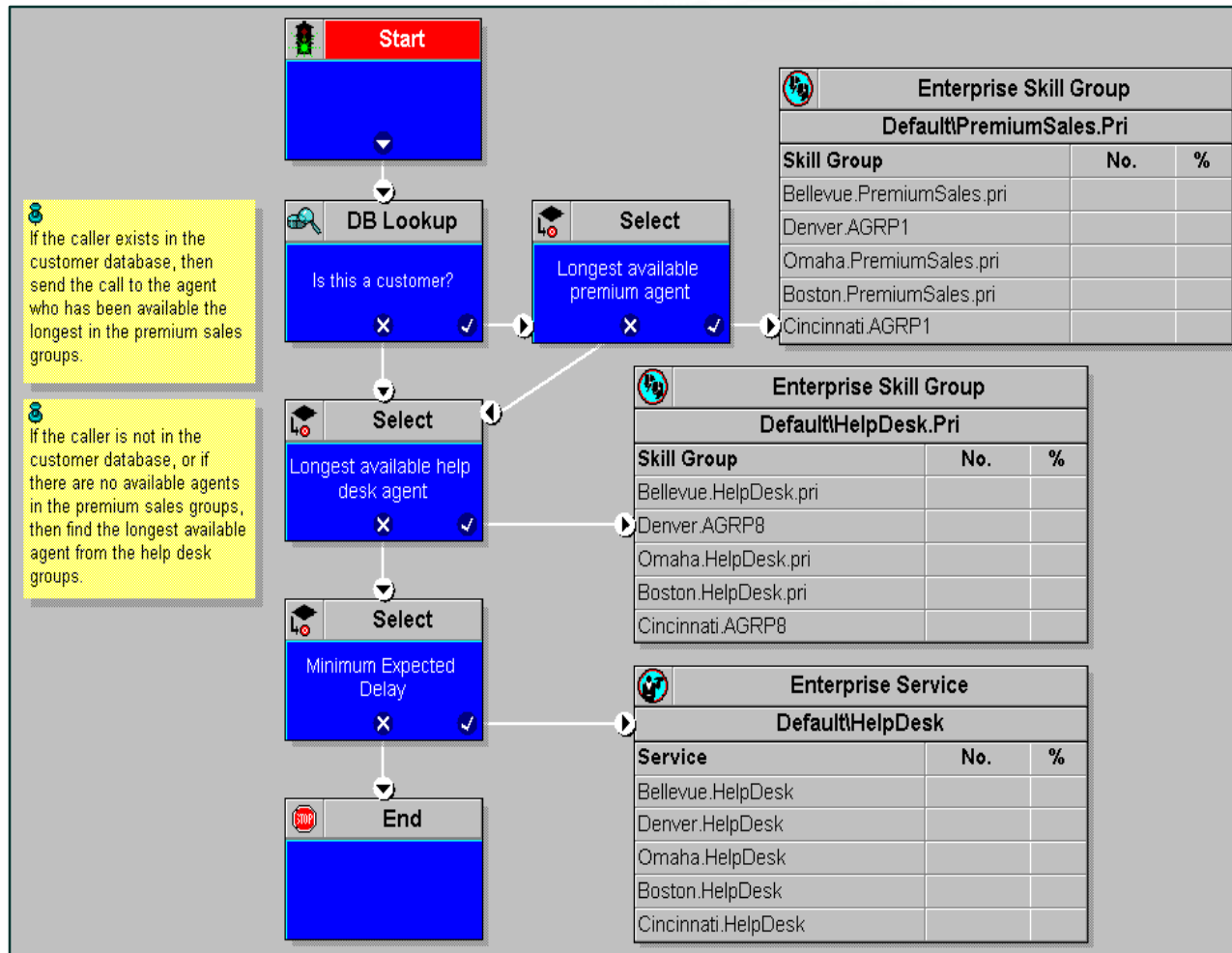
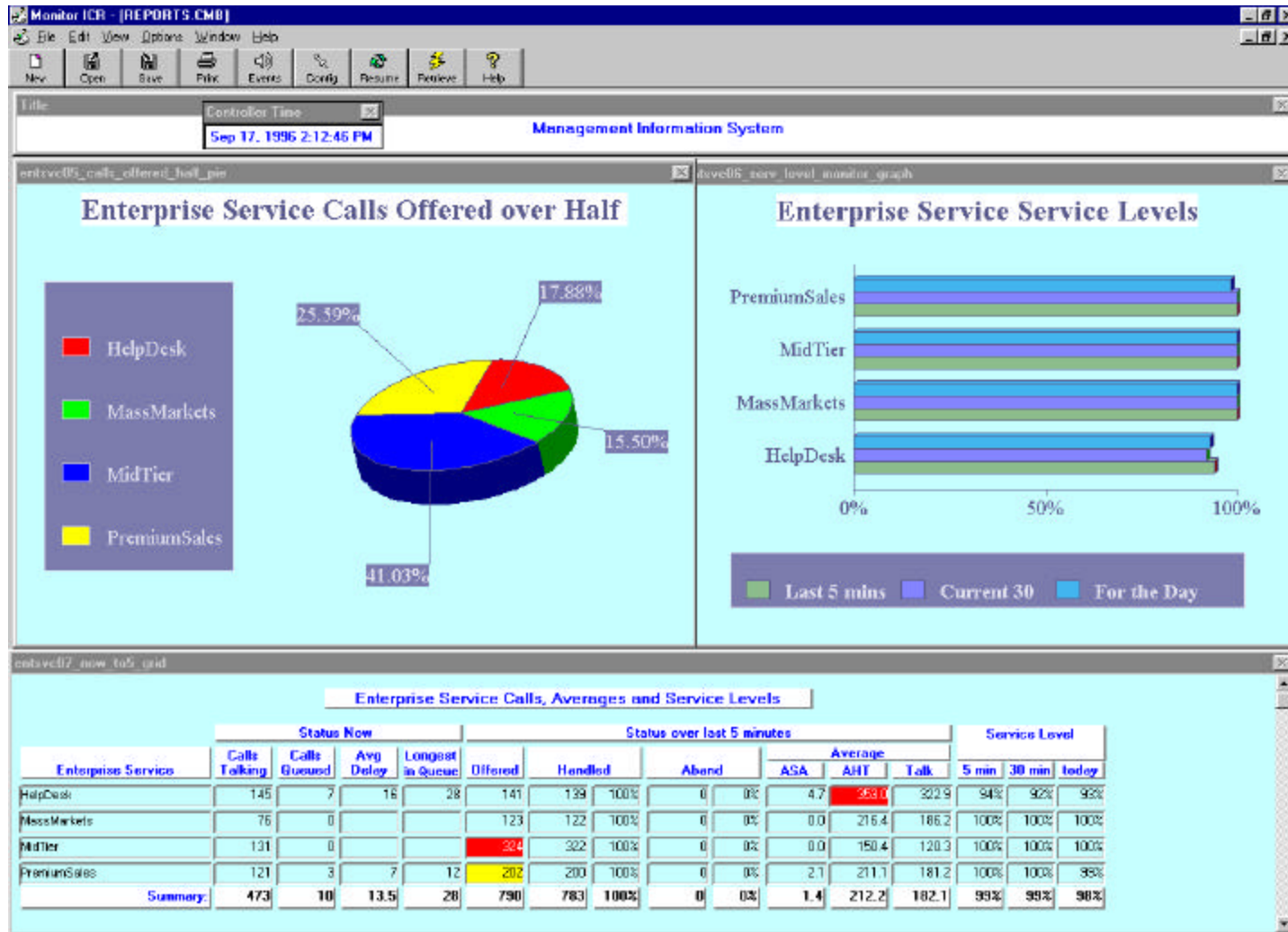# Enterprise-wide Post-*Routing*

- **Route calls that originate from private network, ACDs, PBXs or IVRs**

- **Utilize Pre-*Routing* intelligence**

- **Inter-flow between sites**

- **Transfer between agents**

- **Transfer to or from IVR**
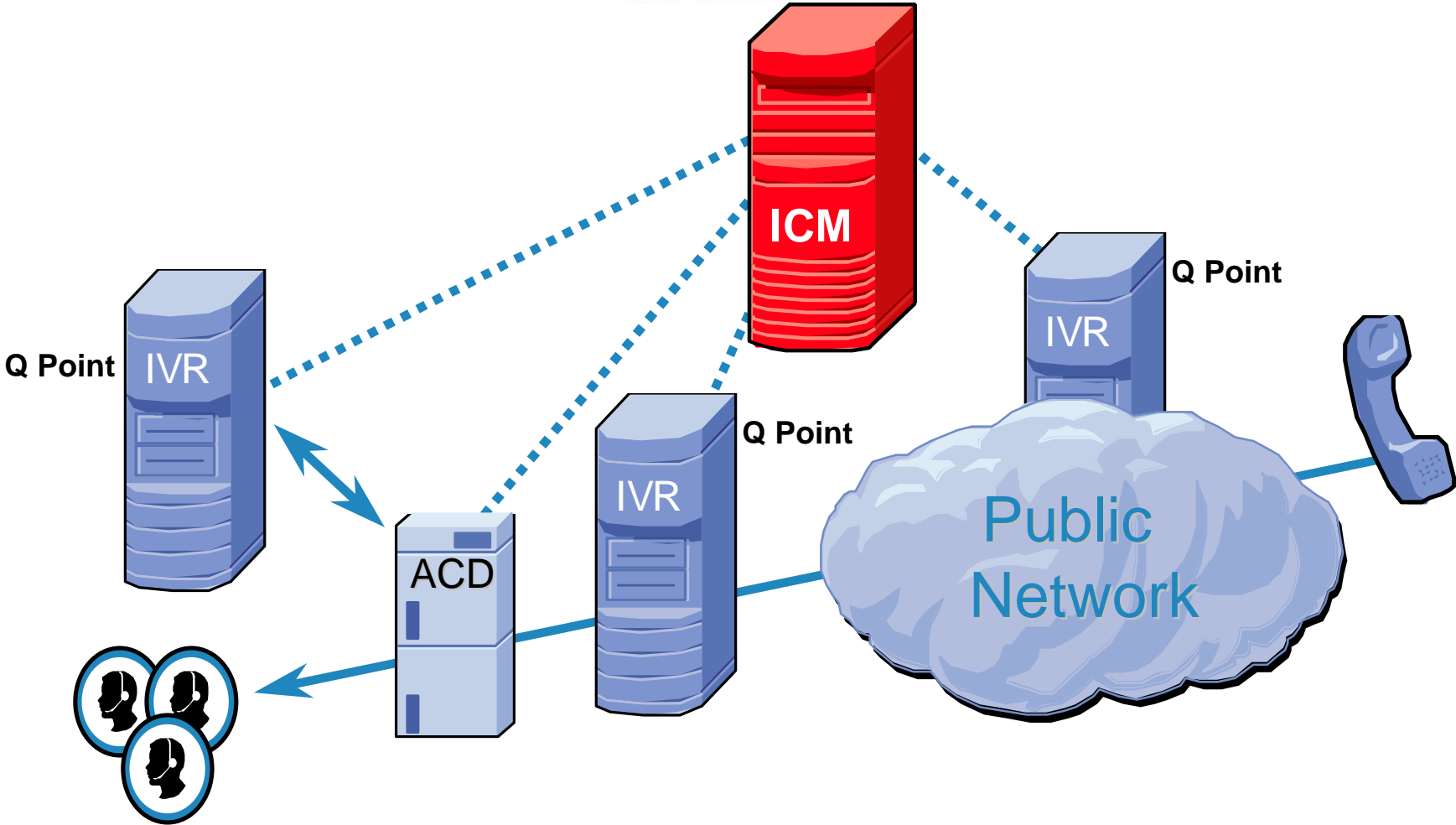
- **Contact tracking and data transfer**

PBX

ICM

IVR

IVR

Public/Private Network

ACD

ACD

Product Feature:
Enterprise-Wide Normalization

IVR

ACD

Web

Fax/
e-mail

Business Apps

Agent Apps

Database

PSTN

Internet

Contact Data

ICM

Enterprise-wide,
normalized collection
of real-time and
historical data

Complete monitoring
and reporting flexibility

Combined Real-time & Historical

Enterprise IVR

ICM

Q Point IVR

IVR **Q Point**

IVR **Q Point**

ACD

Public Network

Enterprise CTI

Customer Database

ICM

Agent Desktop

Agent Desktop

ACD

IVR
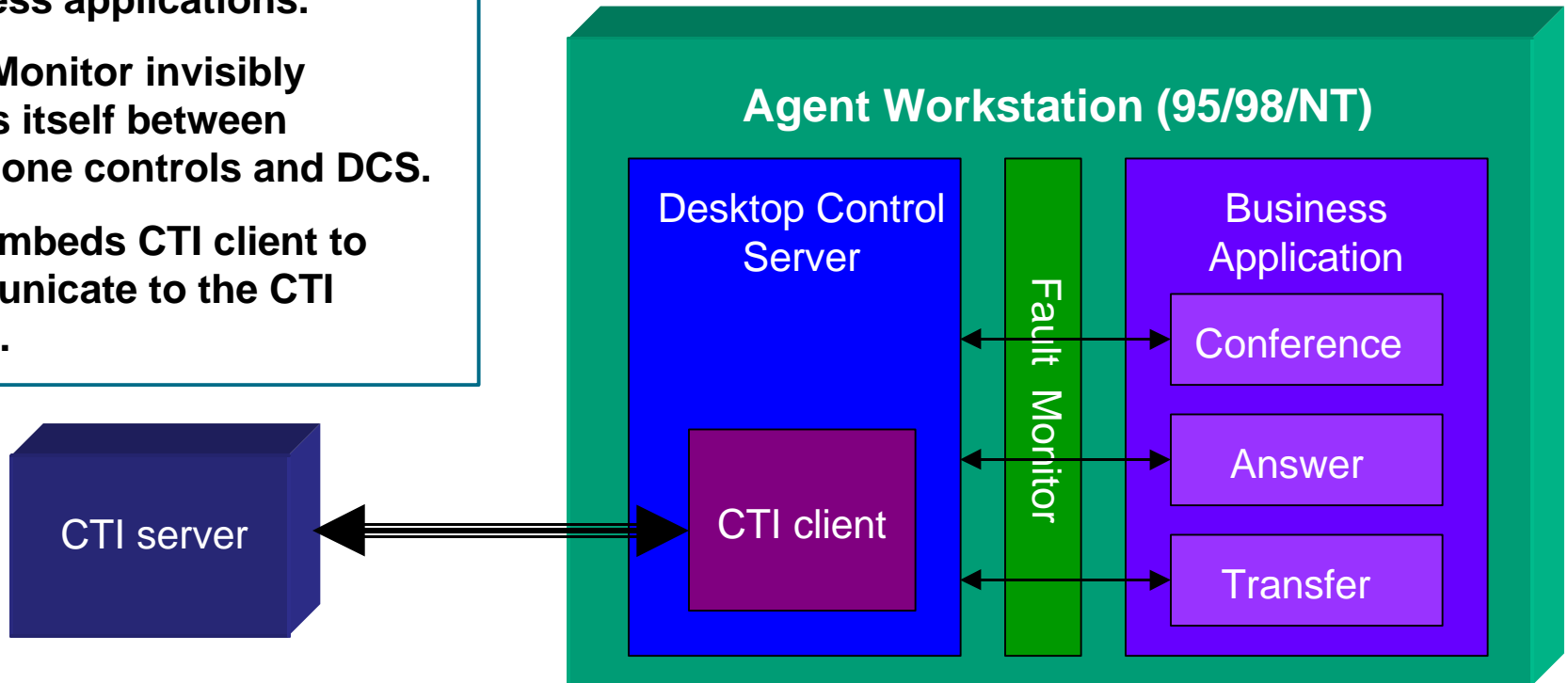
ACD

Public Network
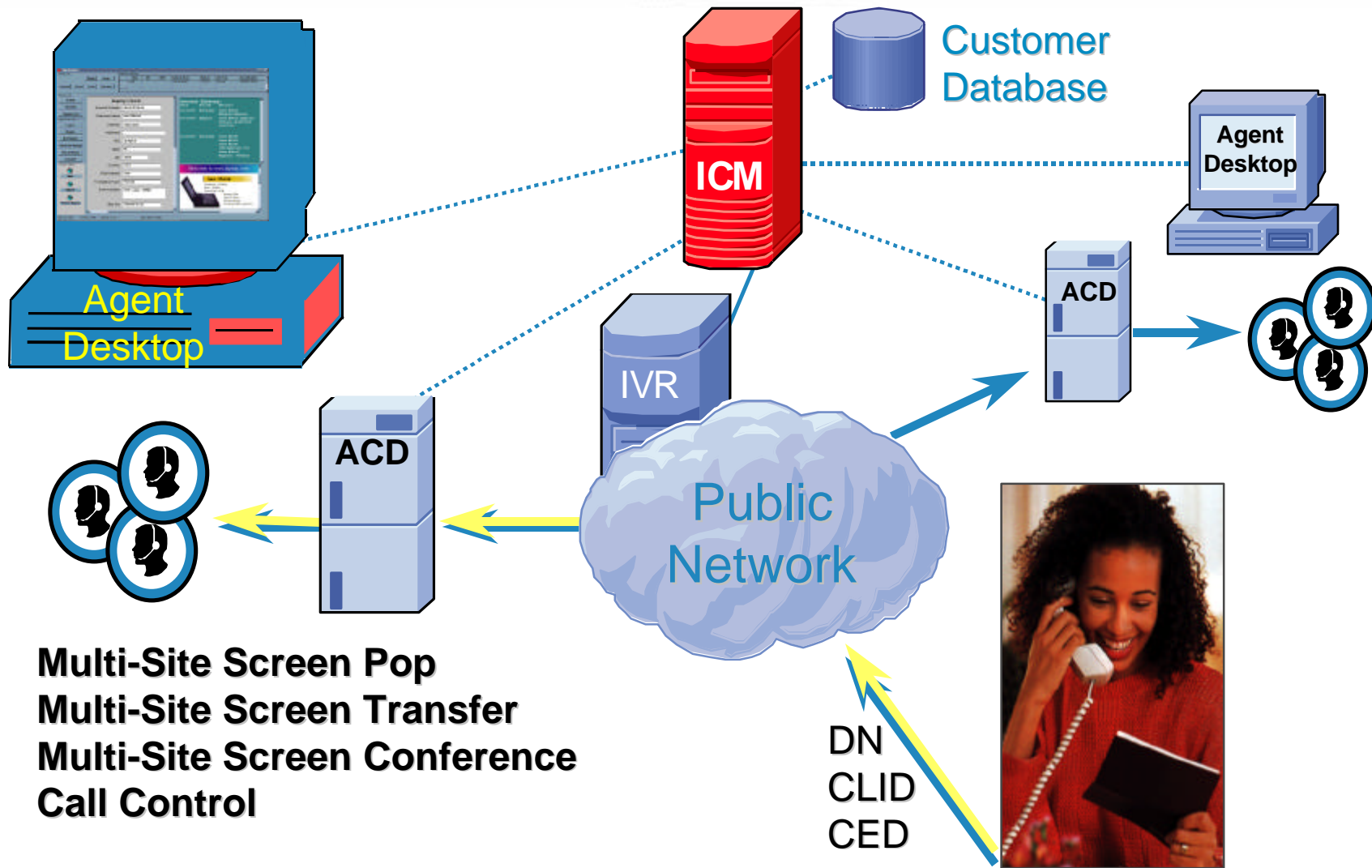
Multi-Site Screen Pop
Multi-Site Screen Transfer
Multi-Site Screen Conference
Call Control

DN
CLID
CED

CTI desktop Architecture

Softphone controls can easily be drag-n-dropped into business applications.

Fault Monitor invisibly inserts itself between softphone controls and DCS.

DCS embeds CTI client to communicate to the CTI server.

Agent Workstation (95/98/NT)

Desktop Control Server

Business Application

Fault Monitor

Conference

Answer

Transfer

CTI client

CTI server

G<small>EO</small>T<small>EL</small>·*CTI Desktop*

Product Feature:
Complete Resource Integration

Clarify

vantive

FRONT-
OFFICE
APPLICATIONS

SIEBEL

Chordiant
SOFTWARE, INC.

PEGASYSTEMS

ICM

CORPORATE
DATABASES

BACK-OFFICE
APPLICATIONS

Gateway

www.cisco.com

Enterprise Agent

Q-Point

NIVR

ACD

Public Network

Contact Centers

Home Agents

ICM

PBX

Q-Point

IVR

Branch Offices
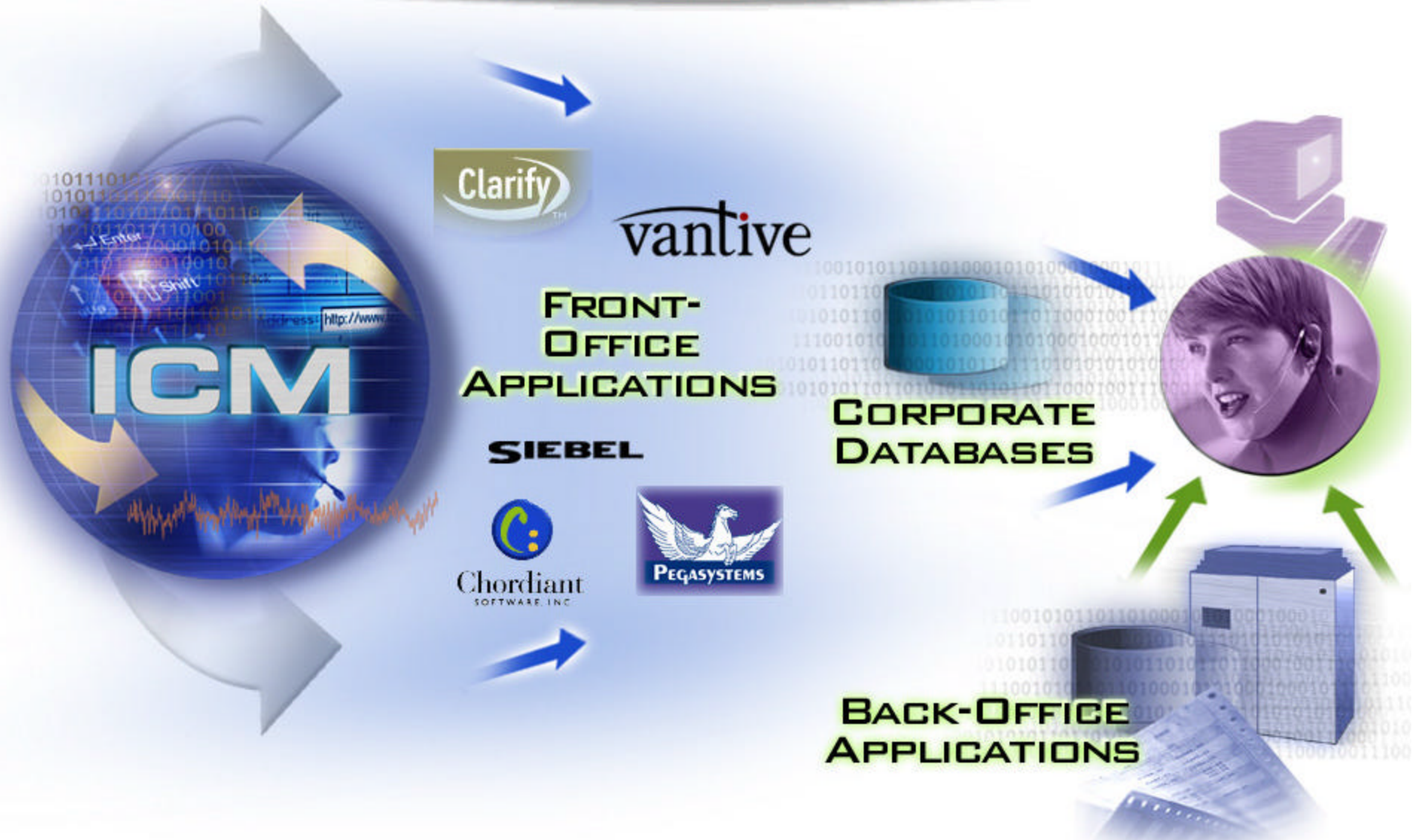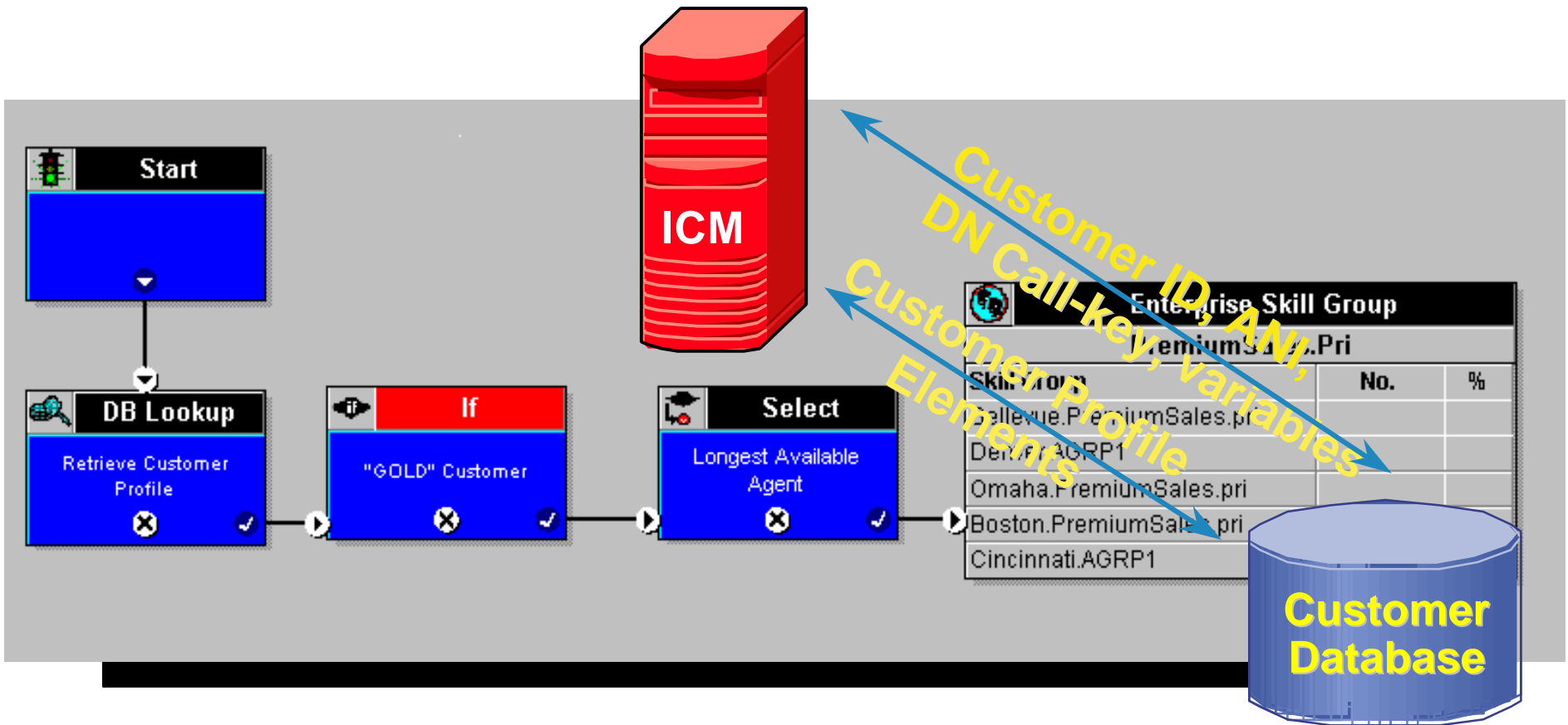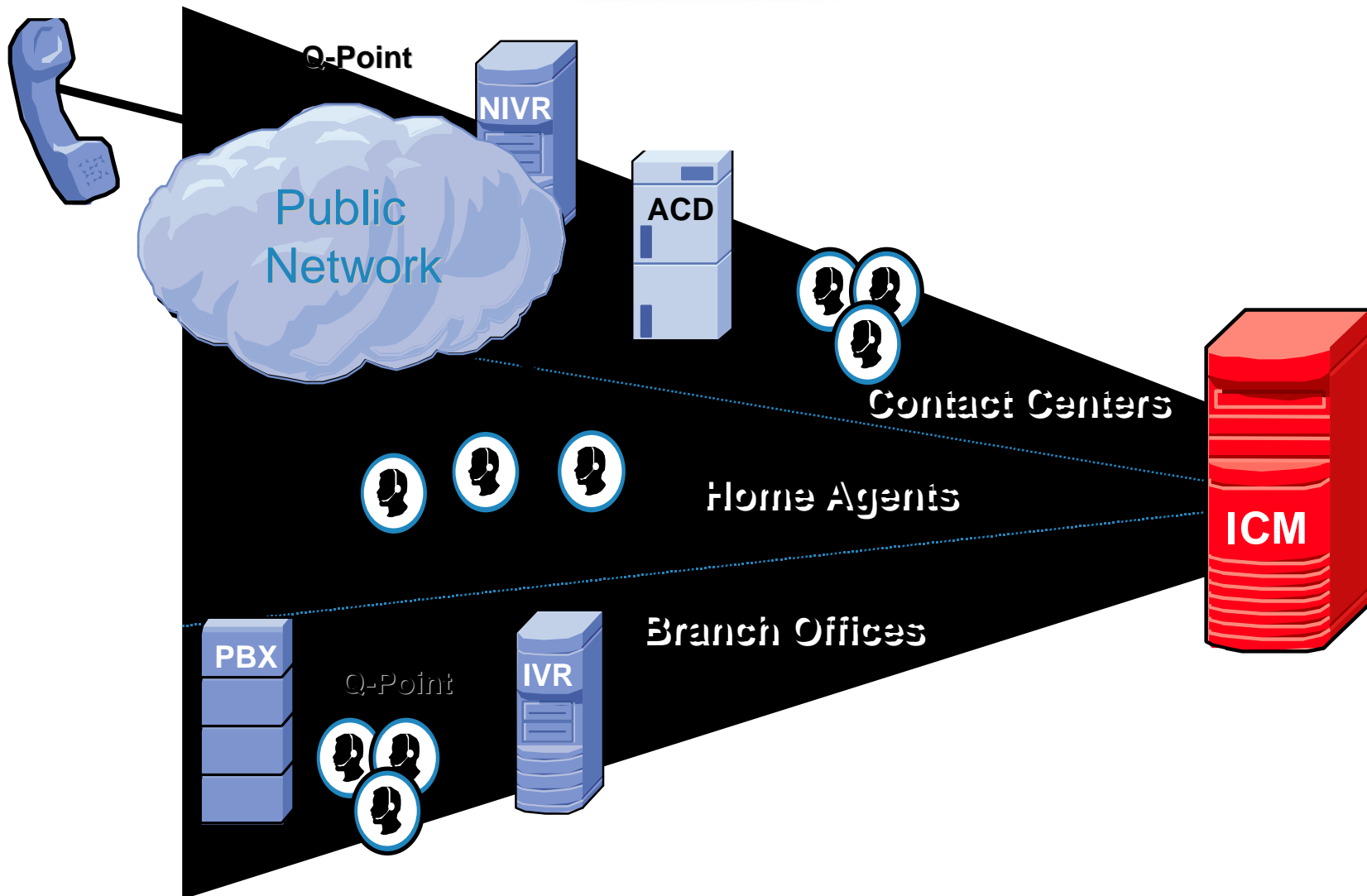
Enterprise Web Integration

- **Based on Open Routing Client**

- **Pre-Routing of Internet calls**

- **Coordination of Voice with Web session**

- **Multi-Media Queuing**

- **Internet and PSTN call stats**

- **Integrated Reporting**

- **Synchronized Web pages**

- **Text Chat, VoIP, Call Back and Collaboration (meet me) Communications Methods**

Enterprise Web

Web Server

Internet

ICM

webline

IVR

ACD

Public Network

Web Browser

Agent Desktop

COLLABORATIVE
BROWSING

Desktop

Microsoft Windows Desktop

Desktop Brain

Fault Monitor

Inter-process Communication (IPC)

Embedded ActiveX Controls

OLE Container

Agent Workstation

COMMonitor

Softphone

Answer

Place Call

Transfer

Conference

Call Appearance Manager

DCS

(Desktop Control Server)

CTI client

Web Front-End

To CTI server (PG)

CTI desktop with Web

Enterprise E-mail

- **Based on Open Routing Client**

- **Leverages ICM Software Architecture**

- **Open System based**

- **ICM Routing Script**

- **Enterprise Scope**

- **Integrated Reporting**

- **Multiple "Address" delivery**

- **Inbound and Outbound**

- **Desktop/CTI Integration**

Enterprise E-mail
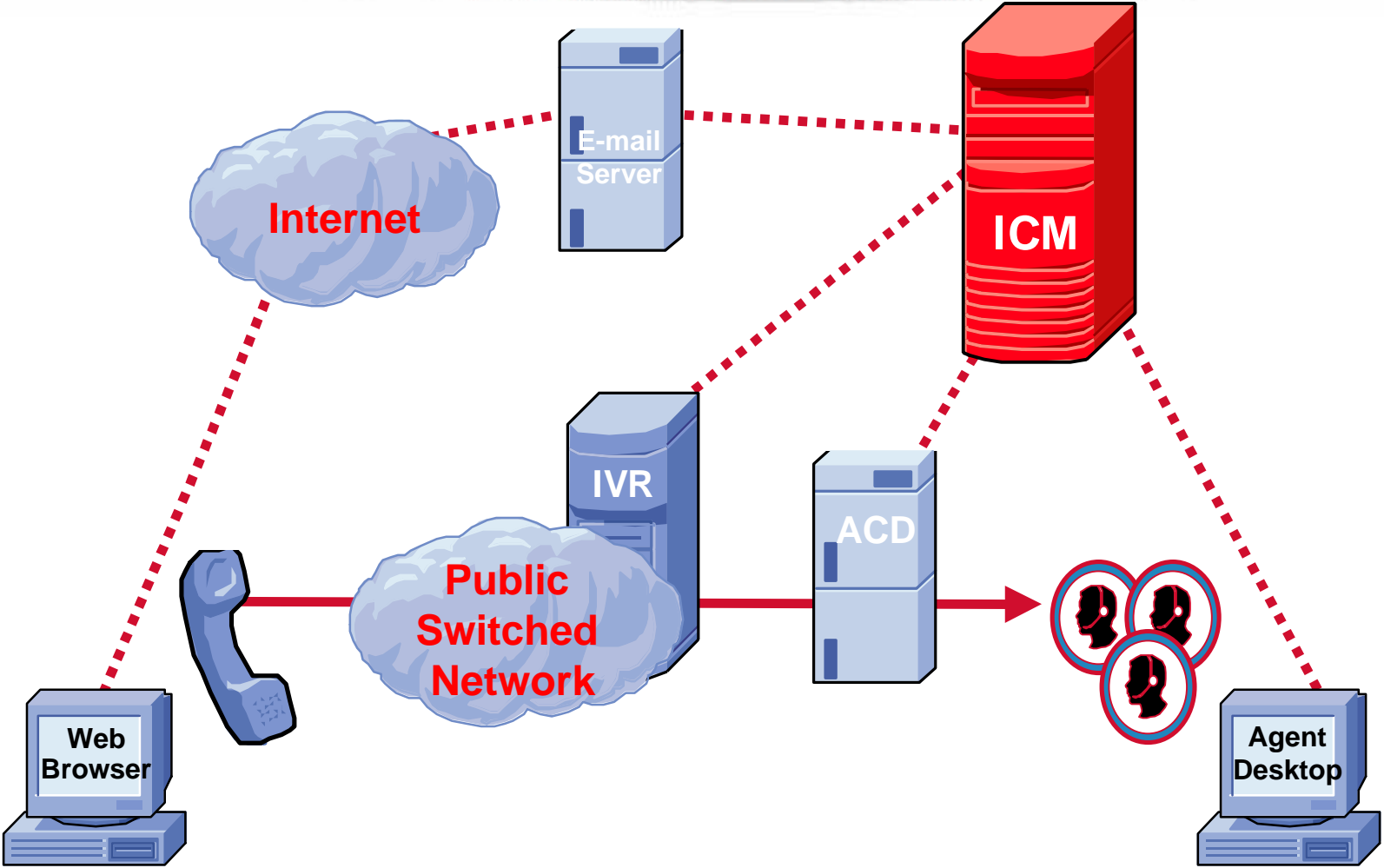
Internet

E-mail Server

ICM

webline

IVR

ACD

Public Switched Network

Web Browser

Agent Desktop

Terms and Concepts

- **Serialized vs. Parallel**

- **Parsers and AI engines**

- **Auto reply**

- **Audit trails**

- **CTI Integration**

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Desktop

Microsoft Windows Desktop	Desktop Brain

Fault Monitor

Inter-process Communication (IPC)

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OLE Container

Agent Workstation

COMMonitor

Softphone

Answer	Place Call
Transfer	Conference

Call Appearance Manager

DCS
(Desktop Control Server)

CTI client

E-mail front-end

To CTI server (PG)

CTI desktop with e-mail

Product Architecture

Primary Central Controller

Redundant Central Controller

Cust. Database

Davox
Melita
EIS

Call Blending

Enterprise Agent

Wide Area Data Network

App Server

WFM

Desktop CTI link

IVR Driver

SS7

CTI Links

Bard
Cybernetics
Pipkins
TCS
Custom

TAPI

Desktop TAPI
IVR Queue
Soft ACD
CTI Desktop
DTAPI svr

Desktop Integrated Applications Active X

Conversant
IBM
DirecTalk
InterVoice
Periphonics
Voicetek
Brite
Tandem
Edify
others &
Open

IVR

SCP

Internet

Microsoft
eFusion
WebLine
Netscape

AT&T
BT
Concert
MCI
Optus

Public Switched Network

Sprint
France Telecom
TNZ

Alcatel
Aspect
NEC
Ericsson
Rockwell

Nortel
Meridian &
DMS100
Lucent
Siemens
Open
CSTA

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Enterprise E-mail

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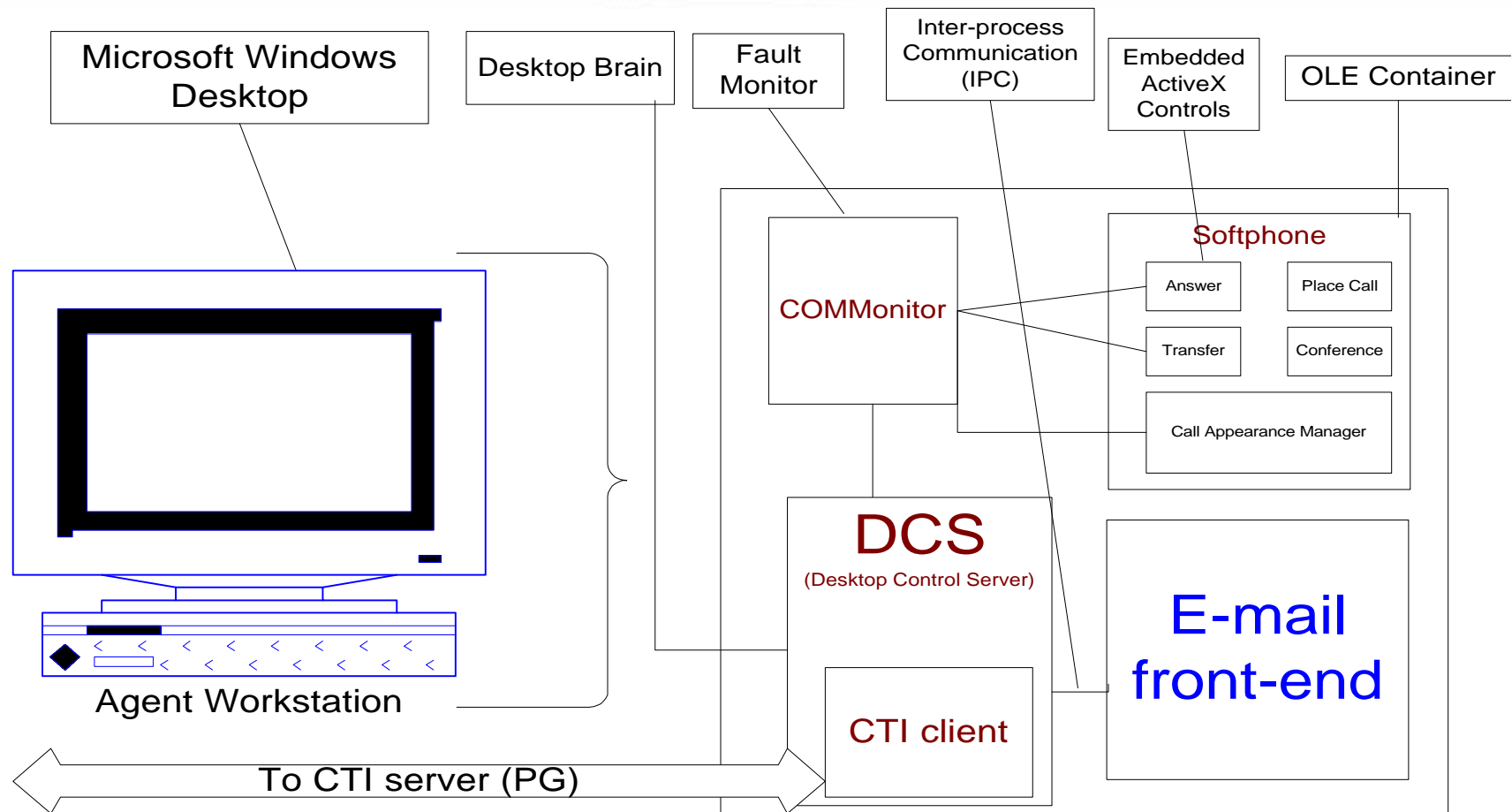
- **Desktop/CTI Integration**

Terms and Concepts

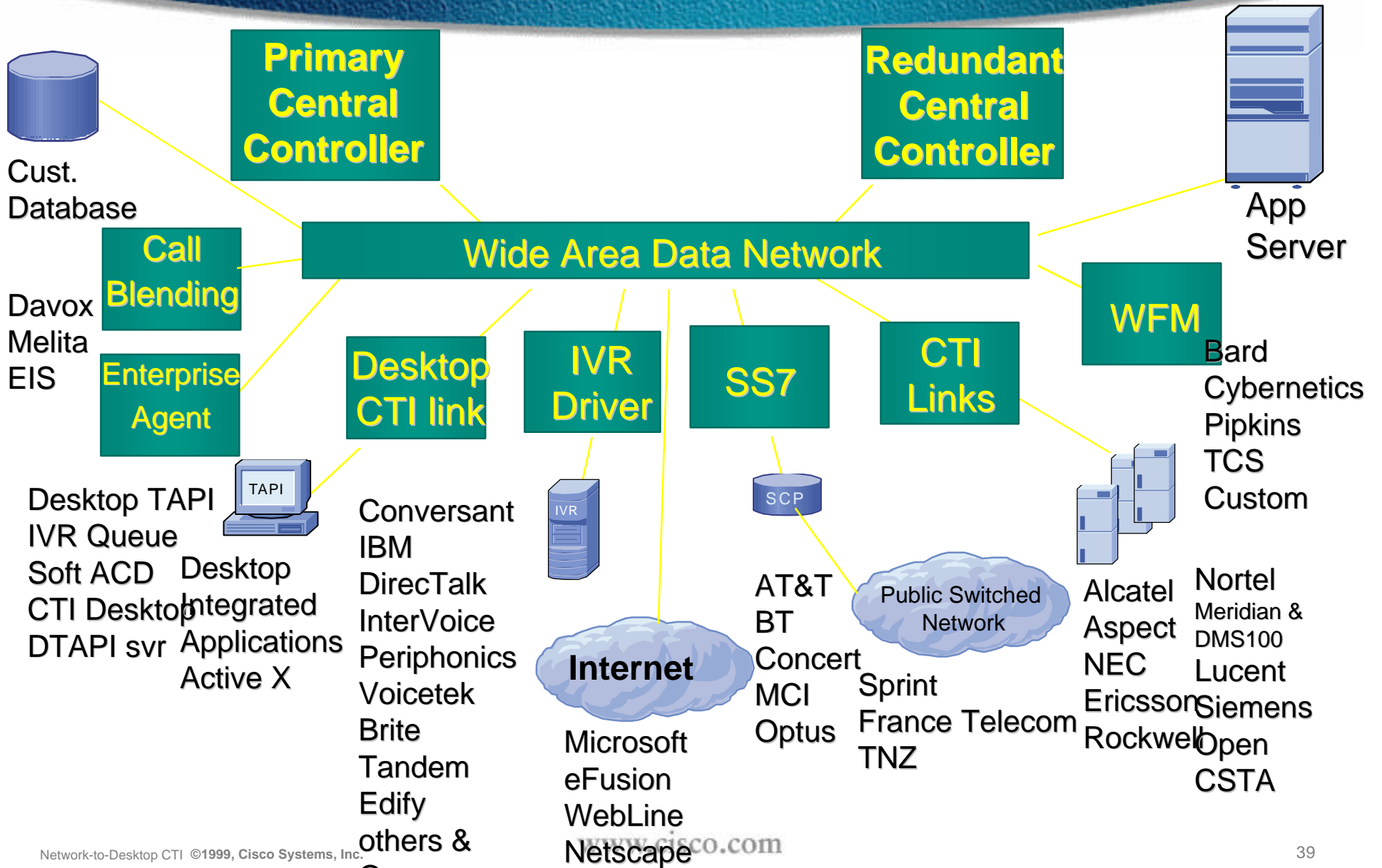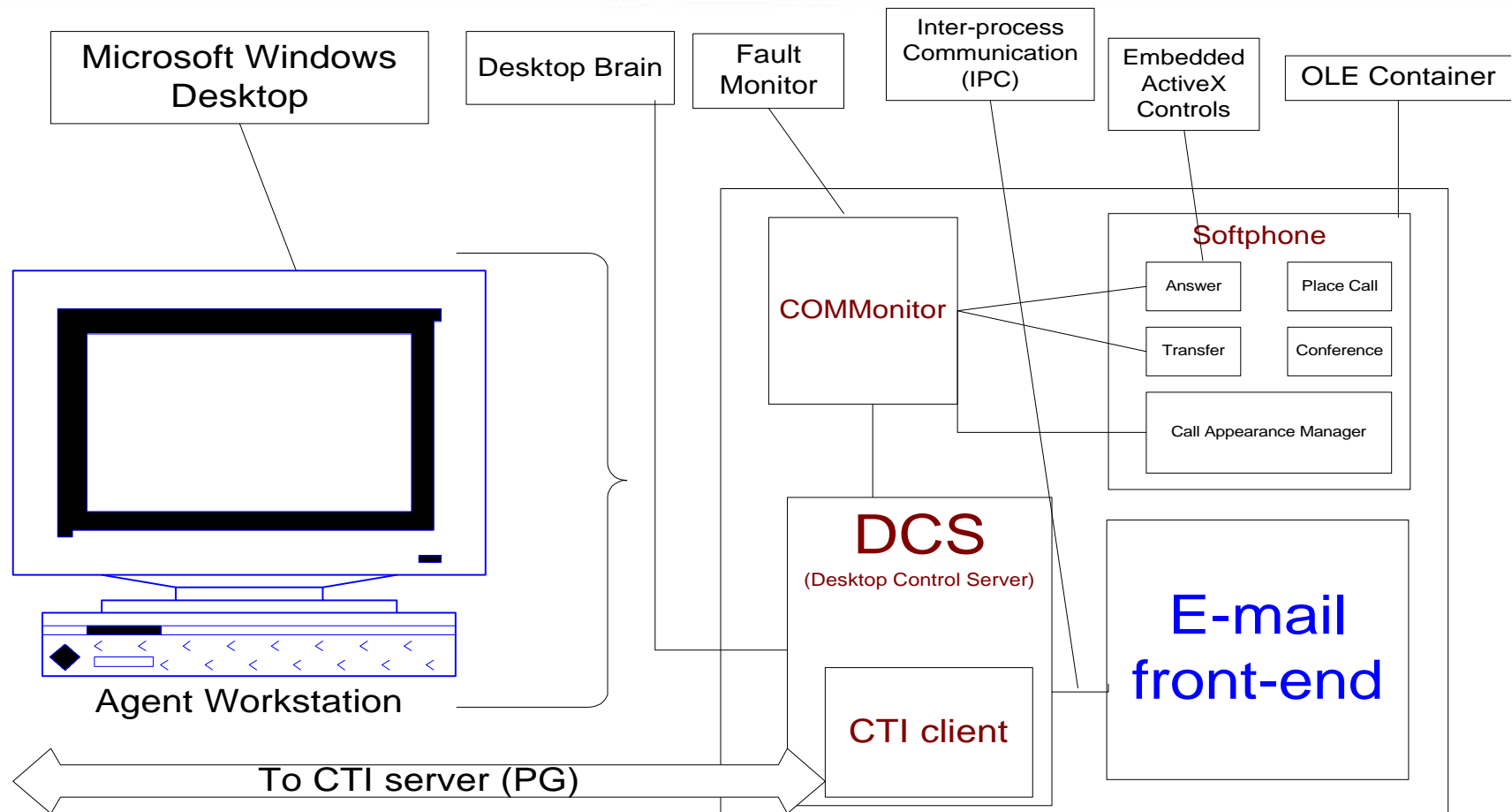- **Serialized vs. Parallel**

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Desktop

Microsoft Windows Desktop

Desktop Brain

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To CTI server (PG)

CTI desktop with e-mail

New World Customer Experience

Comprehensive Customer Care

Agent-Assisted Help

Smooth Integration

Customer Self-Service

Technical Problem Resolution

Unified Business Rules

Integrated Response (E-Mail, Web, Voice)

Highly-Skilled Agents

Satisfied Customer and User

Online Sales and Support

High Touch, Live Conversation, High Customer Satisfaction

High Automation Huge Support Savings

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Cisco IP Contact Center

Central Site

CallManager

Customer

VoIP

Web

E-Mail

Branch

IP

ICM

Legacy ACD

PSTN

SoftPhone

IP Phones

Legacy Agents

Customer Database
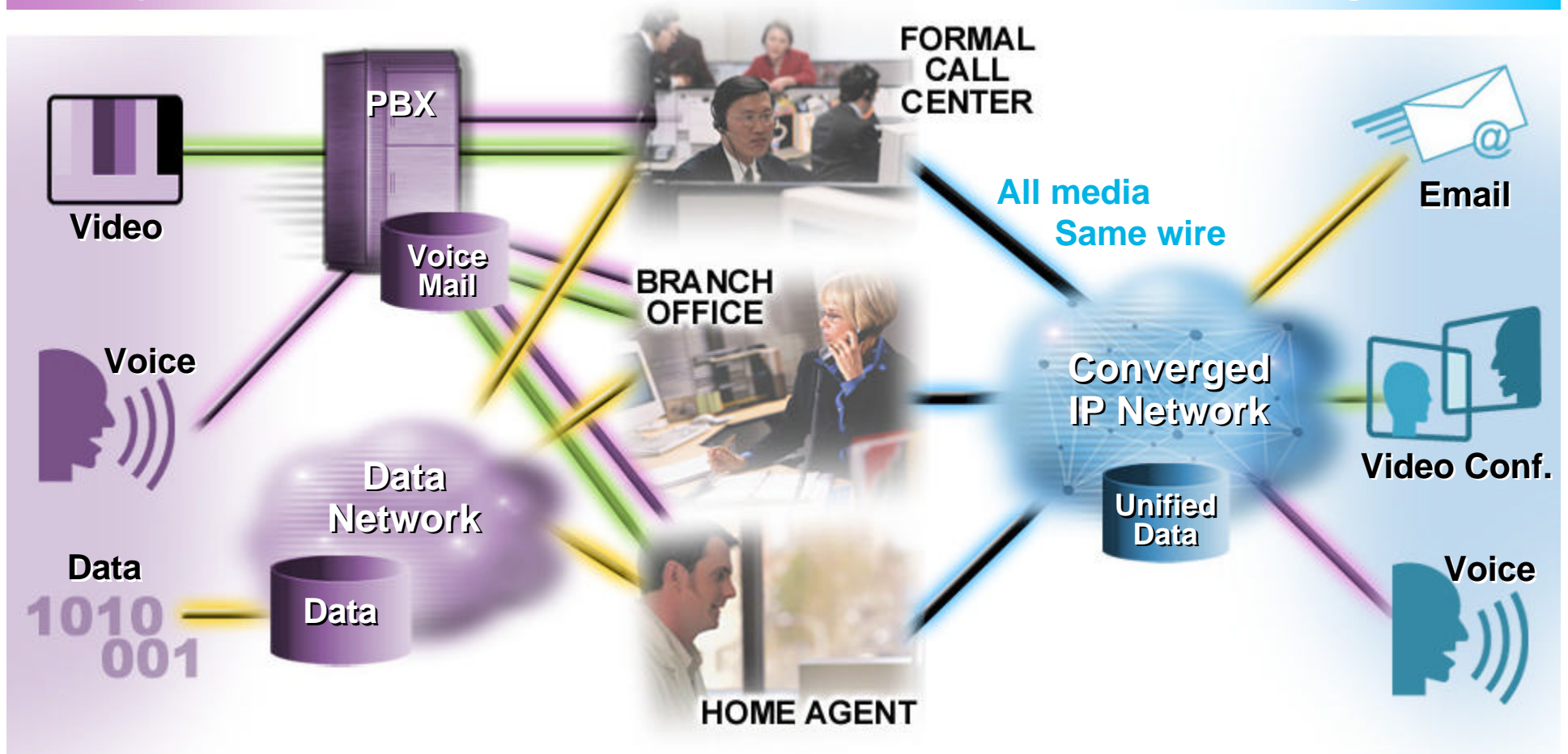
Customer

Remote Agents
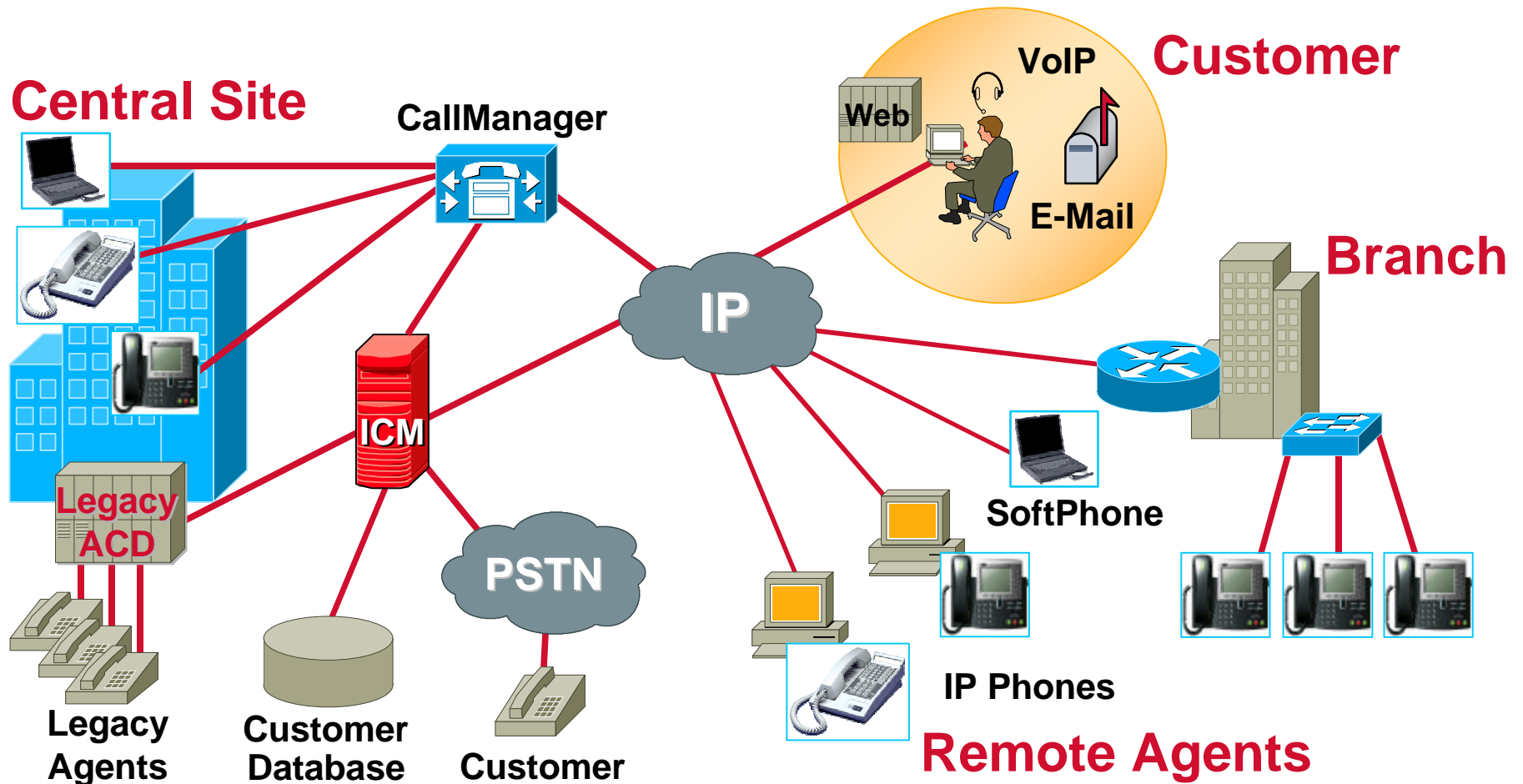
IP Contact Center Benefits

- Provides seamless and cost-effective migration path to a converged network

- Avoids costly legacy infrastructure upgrades by leveraging previous Call Center investments

- Easily extends the Contact Center to branches and remote knowledge workers

- Utilizes existing WAN infrastructure enabling more effective leverage of IP networks

- Eliminates toll calls to remote agents by using IP infrastructure

Multimedia Contact Centre Evolution

OLD WORLD

NEW WORLD

PBX

Video

Voice Mail

Voice

Data Network

Data

Data

FORMAL CALL CENTER

BRANCH OFFICE

HOME AGENT

All media Same wire

Converged IP Network

Unified Data

Email

Video Conf.

Voice

Cisco ICM software unifies Old World and New World applications

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