

Dialogic Tech Summit Insider

San Diego

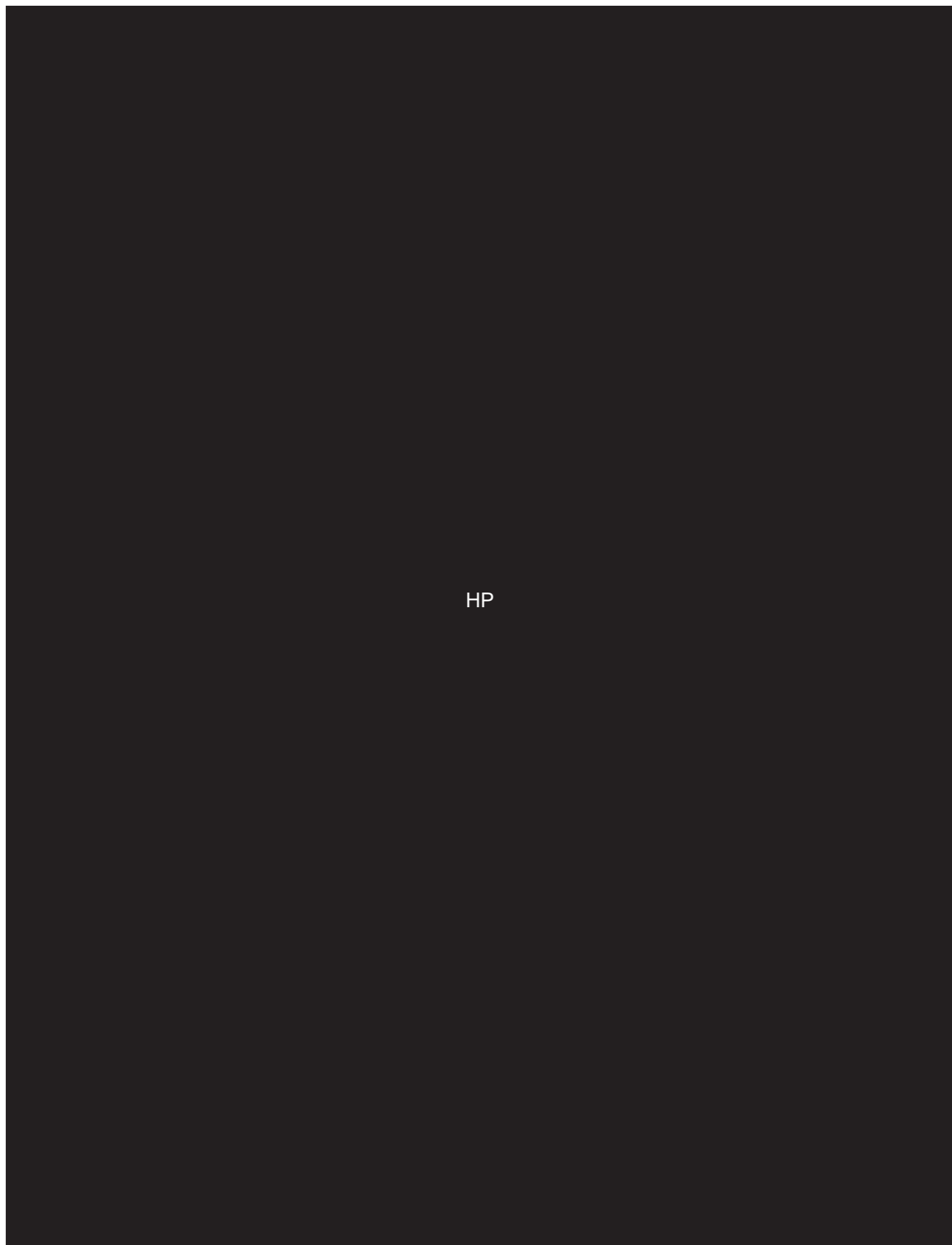
November 15th - 18th



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Dear CT Professional:

Please accept my warmest welcome to Dialogic TechSummit '99. We look forward to exploring and analyzing the changes that are shaping our industry as we prepare for the next millennium.

It is an exciting time to be involved in computer telephony (CT). The convergence of telecommunications, data communications and computing is one of today's most significant business trends. At the heart of convergence lies CT—a \$9 billion market that touches every part of the communications world. Server platforms using CT technology form the "intelligence" in the converged network.

TechSummit is the premier industry event bringing together *all* the players to focus exclusively on the future of CT, both immediate and long-term. Our goal is to help everyone involved in the burgeoning CT industry to take advantage of the tremendous new opportunities convergence is creating.

We want you to leave San Diego—after four productive days of presentations, roundtable discussions, consultations and informal networking events—energized with the in-depth information you need to make strategic decisions on key technical and business issues.

With your help, all of us at Intel Dialogic are working to make TechSummit '99 a fruitful and rewarding event for the CT industry. We promise you plenty of productive work *and* play this week and hope to see you again next year for TechSummit 2000 in Florida.

Sincerely,

Howard Bubba
President, Dialogic Corporation
Vice President, Communications Products Group, Intel Corporation





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RESELLER



Getting the most from

TechSummit '99

TechSummit 99 packs information on the most exciting Intel Dialogic communications products and programs into three full days. Here's how you can plan your time to get the most out of the event.

The Big Picture

Get the scoop on the Intel communications vision, and key Dialogic initiatives to develop an open converged communications world in the executive keynotes. Led by Howard Bubb, Dialogic President, Intel, Dialogic and Microsoft executives will describe initiatives to create a new, applications driven network based on open Intel Architecture and the many opportunities for computer telephony developers and resellers.

In the afternoon, speakers from Dialogic and other the Intel Communications Products Group will elaborate on communications product architectures and key development programs in the *Server Strategies track*. These technical overviews will set the stage for many of the technical issues being covered in the track presentations.

See New Products In Action

Each afternoon in the Technology Resource Center, Dialogic product marketing managers and customers will demonstrate how the latest Dialogic products can be used to address a wide variety of market opportunities. These guided product tours will show how new Dialogic products help speed time to market and allow developers to create better computer telephony services. These demonstrations will help attendees understand the application of Dialogic product features in real world scenarios, like developing next generation network services, IP telephony gateways, unified messaging applications, and small business communications servers.

Networking Opportunities

The TechSummit 99 program is designed with more opportunities than ever for attendees to meet with other leaders in the industry. Here are some of the ways to make valuable business contacts at the Summit:

Technology Resource Center: This year's Resource Center features over 25 companies offering products and services for the Dialogic developer community. The conference

program provides time in the afternoons for you to visit the Resource Center and make contacts with these companies.

Sponsor hosted sessions: Compaq, Microsoft, and SCO will host information packed sessions to give attendees valuable information on these companies' latest products and programs for the CT community.

Roundtables: These interactive discussions at the close of each track let attendees get involved. Get connected with architects, industry experts, and your peers on critical issues.

Evening events: TechSummit features evening events on Monday through Thursday

Message Center: Use the Message Center to arrange off-line meetings: No more sticky notes! You can leave messages for other attendees or page them to set up meetings at our on-site message center hosted by Microsoft and their partner, Intersis.

Get into Depth in TechSummit Conference Tracks

TechSummit attendees have a choice of four tracks depending on your particular interests. Attendees are encouraged to move across tracks according to areas of interest.

Talks range from market and technical overviews to in-depth technical briefings and tutorials. To help you to gauge the content, levels for each talk are coded in your program.

Enterprise Market Opportunities

Dialogic speakers, industry experts, and CT suppliers speak out on technology evolution, product deployment and market development opportunities. Wednesday focuses on hot applications and Thursday covers CT server architecture and deployment issues.

Making it in the Public Network

TechSummit 99 will gather an unparalleled group of players in the public network space. Hear viewpoints from analysts, service providers, equipment suppliers and software developers on technology issues and business opportunities created by the convergence of IP with the traditional telephone network.

Speech Day

Dialogic is working with leading technologists to make speech technologies the way to deploy more powerful CT services. Analysts, developers, and technologists will share their

views on a wide range of topics including Natural Language Understanding, the ECTF speech server framework, user interface design tips, and the latest offerings to make speech enabled applications easier and more practical than ever before.

System Architects Speak Out

The best and brightest Dialogic architects will host talks on critical issues for building more robust systems like ensuring high availability, applying object oriented models to CT systems design, distributed architectures networking models using IP and ATM, and new technologies like SIO (formerly NGIO)

Get Hands on Programming Experience

Back by popular demand, the Programmers Workshops (Track 4) include several sessions on using Dialogic's hottest products to design solutions for enterprise and public network applications. We've added more opportunities for interaction in these sessions.

Another new feature is the Programmers Clinics where Dialogic Application Engineers will be available for more in-depth, interactive

discussions on programming issues related to IP Link, SS7 and CT Media.

Connecting With Resellers

This year's program is expanded to include a full track for resellers of CT products. The *VARConnection* covers market development and product issues of special interest to VARs and resellers, providing practical training and tips for succeeding in CT. Resellers are also invited to other TechSummit events, giving CT developers plenty of opportunities to make contacts with the reseller community.

Let's Get Connected!

We want TechSummit '99 to be the most productive three days of your business year. So please take a moment to complete the evaluation forms and let us know how we can improve future TechSummit conferences. We will continue to make enhancements and improvements based on your input. [INSIDER](#)



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TechSummit'99 Agenda

Tuesday November 16—General Session

8:30 am	Intro and welcome	12:15 pm	Lunch
8:45 am	Vision for the year 2K and beyond	12:30 pm	Luncheon special keynote
9:15 am	Intel Vision	Server Strategies	
9:45 am	Technology Vision	2:00 pm	Software architectures for communications servers
10:15 am	Break	2:30 pm	CT server management issues for enterprise and public network applications
10:45 am	Guest Keynote	3:00 pm	A blueprint for reliable, scaleable communications servers
11:15 am	Building a new business model for CT solutions	3:30 pm	Appliance Servers for CT
11:45 am	Reinventing the public network		

Wednesday November 17

Breakfast Keynote

7:45 am
Wall St. Viewpoint and CT Market Review

Track 1	Track 2	Track 3	Track 4	VARConnection
Enterprise CT	CT in the Public Network Getting to Market Issues	Technologies Track Speech Technologies	Programmers Workshop CT Server Workshops	
8:45 am Will Traditional PBXs Disappear?	8:45 am How to roll out more enhanced services quicker at lower cost	8:45 am Speech Technologies: Moving from Technology-Driven to Customer Driven Applications	8:30 am Introduction to CT Media for Application Developers (Basic)	
9:15 am Panel: Moving to enterprise communication servers	9:15 am Panel: The Value Chain—Winning the deal	9:15 am Panel: Lowering Barriers to Entry for Developers	10:15 am—Break	
10:30 am—Break	10:30 am—Break	10:30 am—Break	10:30 am Designing for Software Interoperability with CT Media	
10:45 am Panel: CT in a Changing Call Center Market	10:45 am Panel: The Value Chain—deployment issues	10:45 am Panel: Technologies and Tools for Tough Applications	12:15 pm—Lunch	
12:00 noon—Lunch	12:00 noon—Lunch	12:00 noon—Lunch	1:15 pm Designing CT Media applications for diverse development environments	
1:00 pm Panel: What's Hot in Messaging	1:00 pm Panel: Software interoperability—requirements for PN services	1:00 pm Panel: Design tips for speech-enabled applications	2:15 pm—Break	
2:15 pm—Break	2:15 pm—Break	2:15 pm—Break		
2:30 pm Roundtable: How Realistic is Shrink-Wrapped Telephony?	2:30 pm Roundtable: Technology Issues - An API Discussion	2:30 pm Roundtable: Developers and Technologists Speech Debate		
				3:30 pm Installation Basics Workshop—A Hands on workshop

Agenda by Day



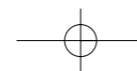
Agenda by Day

Thursday, November 18

Breakfast Presentation

7:45 am
Making E-business work for you

Track 1	Track 2	Track 3	Track 4	VARConnection
Enterprise CT Track Theme: CT Servers for the Enterprise	CT in the Public Network Track Theme: Technologies and Standards	Technologies Track Track Theme: Systems Architecture Issues	Programmers Workshop	
8:45 am Moving to the converged enterprise network—Why the CT server?	8:45 am Convergence of IN, IP and CT	8:45 am Principles of fault management and their application	8:30 am Using IP Link and SS7 Technologies for Designing Convergent Networks	8:30 am Introduction and welcome
				8:45 am The CT Market in the millennium and Opportunities for VARs
9:15 am Panel: CT Server Competitive Advantage	9:15 am Panel: Technology Drivers for Network Integration	9:15 am Panel: System Availability Issues		9:00 am Defining the CT Market
				9:30 am CT Solutions Today and Tomorrow
10:30 am—Break	10:30 am—Break	10:30 am—Break	10:15 am—Break	10:30 am—Break
10:45 am Panel: CT Server Architectural issues	10:45 am Panel: Hosting Enterprise Apps in the Public Network	10:45 am Panel: Distributed Systems and Networking Technologies	10:30 am Designing for debugging	10:45 am How to sell CT
12:00 noon—Lunch	12:00 noon—Lunch	12:00 noon—Lunch	12:15 pm—Lunch	12:00 noon—Lunch Distributor Panel Discussion
1:00 pm Panel: Software Design issues	1:00 pm Panel: Service and Operations Considerations	1:00 pm Panel: Servers and Applications	1:15 pm Troubleshooting your CT App	1:00 pm Making the move from Data to CT Resale
				1:30 pm Roundtable: Getting to Market Strategies (Simplifying CT for VARs)
2:15 pm—Break	2:15 pm—Break	2:15 pm—Break		2:45 pm—Break
2:30 pm Roundtable: CT Media Users Speak Out public networks	2:30 pm Roundtable: New software model for	2:30 pm Ask the Architects Roundtable Topics TBD		
				3:00 pm Tech Support Opportunities
				3:15 pm CT Worked for Me: End User Success Story



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Tuesday November 16—General Sessions

Time	Topic	Speaker
8:30 am	Intro and welcome	Gary Marks, Dialogic
8:45 am	Vision for the year 2K and beyond	Howard Bubb, Dialogic
9:15 am	Intel Vision	John Miner, Intel
9:45 am	Technology Vision	John Landua, Dialogic
10:15 am	Break	
10:45 am	Guest Keynote	Jawad Khaki, Microsoft
11:15 am	Building a new business model for CT solutions	Dean Trumbull, Dialogic
11:45 am	Reinventing the public network	Greg Baltzer, Dialogic
12:15 pm	Lunch	
12:30 pm	Luncheon keynote	Sinbad

Tuesday November 16—Server Strategies

Time	Topic	Speaker
2:00 pm	Software architectures for communications servers	Jeff Peck, Dialogic
2:30 pm	CT server management issues for enterprise and public network applications	Mark Califano, Dialogic
3:00 pm	A blueprint for reliable, scalable communications servers Intel Microprocessor Architecture is widely used worldwide in every computing segment from business desktops to industrial control. Intel Architecture standard high-volume (SHV) servers provide a platform for telecommunication application developers and solution providers to offer price-performance benefits and time-to-market advantages to end customers. In this session, you will learn how to build reliability and scalability into applications through standard blueprints of system design.	Kevin Johnson, Intel
3:30 pm	Appliance Servers for CT	Ahmet Houssein, Intel

Breakfast Presentation—Wednesday November 17

Time	Topic	Speaker
7:45 am	Wall St. Viewpoint <ul style="list-style-type: none"> ■ CT Market review: who's hot ■ '99 performance and '00 expectations ■ Companies the analysts are watching ■ Analyst predictions 	Steve Levy, Lehman Brothers

Breakfast presentations are 45 min. Doors open for breakfast at 7:00 am.

Breakfast Presentation—November 18

Time	Topic	Speaker
7:45 am	Making E-business work for you We live in an e-business world where new opportunities are born every day. And we are moving into a 24x7, self-service environment for an ever-increasing number of transactions. This session explores how e-business relates to telephony. We'll also look at the speech revolution and how enterprises are discovering the new e-business enterprise opportunities enabled and created by speech technology.	Jerome Beard, IBM

Breakfast presentations are 45 min. Doors open for breakfast at 7:00 am.



Agenda by Track

Track 1—Wednesday November 17—Enterprise CT

Time	Hot Applications in Enterprise CT	Speaker
8:45 am	<p>Will Traditional PBXs Disappear?</p> <p>Discussion of trends and issues including market conditions, proprietary vs PC systems penetration, dealing with entrenched competition, channels / distribution issues, integration, and partnering opportunities.</p>	<p>Fred Knight, Business Communications Review</p>
9:15 am	<p>Panel: Moving to enterprise communication servers</p> <p>Giving the end user the best of interface alternatives</p> <p>Making the most of user interface alternatives, PC-based, analog, digital, IP based phones, voice activated services, user programmability issues, using them to compete, other issues.</p> <p>Enablers for enterprise communication servers on ATM and IP networks</p> <p>Report from the field: Re-inventing the channel for communication servers</p> <p>Marketing strategies, competing with proprietary companies, training and support issues, partnering issues</p>	<p>Moderator: Jeff Snyder, Dataquest Phil Holland, Circa</p> <p>Joe Grecco, Dialogic Jason Keller, Net.World</p>
10:30 am	Break	
10:45 am	<p>Panel: CT in a Changing Call Center Market</p> <p>Call centers are evolving into customer contact centers with multimedia communications requirements. As customers find more ways to communicate with companies, contact centers must support telephony, Web requests, Web collaboration, email, and fax — all in a single system. This session explores the key business and technology issues involved in developing multimedia contact centers and the market and technology requirements as we move to a horizontal business model. Leading vendors will discuss the solutions being implemented and explain what developers and integrators need to know in the new world of e-commerce and customer relationship management.</p> <p>Technology requirements for moving to a horizontal business model</p> <p>Market and technology requirements for moving from a vertical to horizontal business model. New CT Connect software components that support them.</p> <p>Technical and business issues in designing multimedia customer contact centers</p> <p>Designing more complete transaction processing services, including e-commerce.</p> <p>Cultivating the integrator to sell CT enabled solutions for Customer Relationship Management</p>	<p>Moderator: Blair Pleasant, The Pelorus Group</p> <p>Carl Strathmeyer, Dialogic</p> <p>Mike Dailey, Microlog</p> <p>Kevin Nix, Siebel</p>
12:00	Lunch	
1:00 pm	<p>Panel: What's Hot in Messaging</p> <p>Unified messaging has come of age and is fast being implemented in a wide range of organizations. With a variety of platforms to choose from, it's essential to explore the product architecture issues and options and learn how to choose the best solutions. This session shows implementers and developers how to build Microsoft Exchange-based unified messaging solutions that take advantage of Exchange's unique features. You'll also learn the facts about fax and how it is being implemented as a crucial part of a true unified messaging solution. Topics include the special problems and opportunities inherent in integrating fax, Exchange, client-based versus server-based architectures, and other critical elements of unified messaging. As the unified messaging market quickly accelerates, developers will gain valuable insight into translating user issues into must-have product and business requirements.</p>	<p>Moderator: Blair Pleasant, The Pelorus Group</p>

	<p>Making Unified Messaging even hotter: the facts about fax!</p> <p>It ain't Unified Messaging without fax. Unified messaging as a platform will never take off without the fax component.</p> <p>Unified messaging product architecture issues and options: client or server, Lotus or Exchange</p> <p>Provide an implementer's perspective on the analysis, decisions, and their impacts.</p> <p>Getting Voice and fax on Microsoft Exchange</p> <p>Connecting voicemail to Exchange servers, integration issues and tips for developers, customer total cost of ownership concerns and why Microsoft advocates CT Media.</p>	<p>Peter Davidson, Davidson Consulting</p> <p>Julie Freguia, AVT</p> <p>Kevin McCuiston, Microsoft</p>
2:15 pm	Break	
2:30 pm	<p>Roundtable: How Realistic is Shrink-Wrapped Telephony?</p> <p>The promise of shrink-wrapped telephony is compelling: It would tear down the biggest barrier to CT market growth and channel education. VARs could invest less to get into CT, make more money, and provide their customers with more cost-effective solutions. But is it realistic to think we will ever see shrink-wrapped telephony? Our roundtable of industry experts will explore market and technology trends, standards efforts, and the move to an open systems model. You will leave understanding if — and when — we will see easy-to-install CT solutions. Developers will learn what to do to make their apps more VAR friendly. VARs will get a sense of what it will take to succeed in the CT space as the world moves to shrink-wrapped telephony. This session will help developers, VARs, interconnects, system integrators, ISVs, PC and platform providers, and channel partners.</p>	<p>Moderator: Jim Burton, C-T Link</p> <p>Panelists:</p> <p>Guy Blanchette, Omtool Scott Sorensen, CoreSoft Fred Yentz, IBM Rami Safadi, UltiVerse Edith Abbate, Catalyst Telecom Jeff McLendon, SNAPS</p>



Agenda by Track




Track 1—Thursday November 18—Enterprise CT

Time	CT Servers for the Enterprise	Speaker
8:45 am	<p>Moving to the converged enterprise network — Why the CT server?</p> <p>Everyone agrees we are transitioning from separate voice and data networks to a converged network that will deliver voice, data, and video. But what are the issues vendors need to address to provide mission-critical enterprise converged network solutions? Reliability, flexibility, scalability, manageability, and interoperability all top the list. This session looks at why the CT server is a key ingredient to the successful migration and deployment of the converged network. You will leave understanding why CT servers are the choice for converged network solutions. This session is for developers, VARs, interconnects, system integrators, ISVs, PC and platform providers, and channel partners.</p>	Jim Burton, C-T Link
9:15 am	<p>Panel: CT Server Competitive Advantage</p> <p>CT servers provide numerous competitive advantages. To leverage these advantages, you need an understanding of channel issues, CT server technologies, and application opportunities. In this session, CT server experts will give you that understanding. You will learn about the business and channel issues involved in transitioning from selling PBXs and adjuncts to CT servers. You will explore the key features that impact performance, reliability, administration, and scalability. And you will hear the business case for delivering mass-market solutions with CT servers. This session is invaluable for developers, VARs, interconnects, system integrators, ISVs, PC and platform providers, and channel partners — anyone looking to get an edge on the competition with CT server technology.</p> <p>Making the transition to CT servers</p> <p>Business issues in going from selling PBXs and adjuncts to CT servers, resale and channel issues.</p> <p>Technology advantages of the CT server model</p> <p>Overview of CT Media 2.x development environment, and key features to address performance, reliability, administration scalability issues.</p> <p>New solution opportunities for CT servers</p> <p>Lay out business case for delivering mass market solutions with CT servers. Discuss drivers for apps on CT servers vs. standalone CT applications in a proprietary model.</p>	<p>Moderator: Jim Burton, C-T Link</p> <p>Marshall Ball, Comdial</p> <p>Bill Spain, Dialogic</p> <p>Thomas Pfenning, Microsoft</p>
10:30 am	Break	
10:45 am	<p>Panel: CT Server Architectural issues</p> <p>The concept of a CT server requires a carefully-formed architectural model with enough extensibility to embrace emerging standards. Features of a CT server must include call control, switching, IP telephony considerations, and interoperability between applications. In this session, expert panelists will address each of these challenges, some of which have overlapping requirements as the line between a service and an application becomes blurred as the sophistication of the solution set grows. This session is particularly useful to a technologist wishing to understand integration issues as either a developer, in evaluating CT proposals, or part of an organization delivering turnkey solutions to the channel.</p>	Moderator: Peter Robson, Dialogic

	<p>Understanding and using the CT Media Open ISE</p> <p>Discussion of APIs and admin framework, implementation scenarios, and development resources.</p> <p>Building Gatekeepers using CT Media</p> <p>CT server standards outlook and interoperability issues</p> <p>Provide insights into the current state of work toward interoperability key problems being worked on, what suppliers can expect in the near future, and how to get involved.</p>	<p>Dwight Irving, Dialogic</p> <p>Jim Lotti, duroVox</p> <p>Andrew Hunkins, ECTF</p>
12:00	Lunch	
1:00 pm	<p>Panel: Software Design issues</p> <p>The value of certification</p> <p>Designing applications for scalability</p> <p>Advantages of the CT server model for implementing speech technologies</p>	<p>Moderator: Jeff Snyder, Dataquest</p> <p>Jim Zuber, QualityLogic</p> <p>Glenn Thorne, TeleDirect</p> <p>Mike Wagener, Arial Systems</p>
2:15 pm	Break	
2:30 pm	<p>Roundtable: CT Media Users Speak Out</p> <ul style="list-style-type: none"> ■ Porting and development (Making the transition from R4 to CT Media) ■ Business opportunity assessment ■ Future product development ■ Partnering / CT Server Value Network 	<p>Moderator: Jon Shapiro, Alliance</p> <p>Panelists:</p> <p>David Dreffs, Parity</p> <p>Matt Cole, Planet Technologies</p> <p>Henry Dewing, Compaq</p> <p>Christian Jensen, ATIO</p> <p>Real Fonte, MediaSoft</p>

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Could your finger speak? Locus makes it happen.

As a global supplier of intelligent telecommunications, Locus has brought the communication world of marvelous convenience with unified messaging, call center, Intelligent Peripheral, and internet telephony. Locus opens an amazing communication world, challenging its limits. Working with Dialogic Corp., Excel Switching Corp., and Lucent Technologies, Locus meets worldwide customers.

Technology

Media Processing : Multimedia Processing (Voice, Fax, MPEG2, MPEG4), Voice Recognition, TTS, Signaling : R2MF, DTMF, ISDN, SS7, INAP, TCAP, SCOP, ISUP, TUP, H, SS3, MGCP, Applications : VMS, SMS, UMS, Large Scale ACD, Service Node, Intelligent Peripheral, IVR Service Control, Hot Billing (CAMA, LAMA)

Products

CTI / Call Center Solutions, PBX / Open Programmable Switch, IVR, Internet Call Center, Multimedia Call Center, Network ACD, VMS, AN-IP, SCP, SSP, LIPS(Locus Intelligent Point System), Locus PPS(Prepaid and Postpaid System), Banner Phone System

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Bridge to the Future

Speechworks

Agenda by Track



Track 2—Wednesday November 17—CT in the Public Network

Time	Getting to Market Issues	Speaker
8:45 am	How to roll out more enhanced services quicker at lower cost Discuss market demand, 6 major issues, and the business case for CT server-based solutions.	Hillary Mine, Probe Research
9:15 am	Panel: The Value Chain – Winning the deal Network services generating millions of minutes of traffic – how 'bout a billion. The latest experiences in network call center applications Designing solutions to fit the network... speech applications in the wireless networks Sales support services for developers	Moderator: Daniel Hutton, MCI Daniel Hutton, MCI Chris Ebling, Compaq Bob Baughman, Dialogic
10:30 am	Break	
10:45 am	Panel: The Value Chain – deployment issues For maximum value, any new service offered by a network operator demands rigorous testing by real users. If you haven't learned to work closely with your carrier customers to tune your applications, you must. Steve Wood will discuss his experience deploying services, including what succeeded and the subtle factors that kept straightforward apps from working. Steve brings a wireless data slant to his application experience, providing a chance to brainstorm on how wireless services are beginning to merge with Internet apps. Joining Steve are Jim Szyperski and Ben Levy to talk about their own experiences trialing new applications with service provider customers. Jim's experience as CEO of Intellivoice, as well as his current role with Premier Technologies, give him a useful perspective on using formal market research to understand consumer demands on new services. For any new service to be broadly marketable, it's crucial to work directly with carriers on market testing. Ben will explore the Catch-22 of marketing new services: What if the new service requires changes to address the broadest audience? He'll also discuss using a toolkit to maximize your chance of being able to change your application without affecting the stability of the overall system. "Trials" and tribulations of wireless data services... information, email, and paging over wireless Using focus groups for rapid deployments Foundation tools to deploy	Moderator: Steve Wood, Wireless Services Steve Wood, Wireless Services Jim Szyperski, Premiere Technologies Ben Levy, Apex Voice Communications
12:00 noon	Lunch	
1:00 pm	Panel: Software interoperability – requirements for Public Network services Understanding relationships between service provider and business customer... web interfaces for provisioning, customer services, and network use information Applications sharing a network... network call control is the key to interoperability Billing / provisioning ... how to shrink the deployment time by understanding the billing system Management	Moderator: Steve Wilcox Yung Hahn, Telagora.com Mark Lachapelle, Prima Jonathan Cohen, Priority Call
2:15 pm	Break	
2:30 pm	Roundtable: Technology Issues – An API Discussion ■ JAVA considerations ■ Corba ■ TAPI ■ ECTF APIs	Moderator: Mona Johnson, Technical Marketing Panelists: Doug Tait, Sun Microsystems Arkady Grinberg, Ulticom Ed Verney, Compaq TBD, Microsoft

Track 2—Thursday November 18—CT in the Public Network

Time	Technologies and Standards	Speaker
8:45 am	Convergence of IN, IP and CT	Mona Johnson, IN Forum
9:15 am	Panel: Technology Drivers for Network Integration Technical issues in deployment ■ End-to-end IP ■ Convergence starts with messaging and least cost routing Packet networks for voice, connecting circuit and packet networks – Choosing coders for different networks	Moderator: David Turock, InterExchange (Walt Brown) David Turock, InterExchange Jim Machi, Dialogic
10:30 am	Break	
10:45 am	Panel: Hosting Enterprise Applications in the Public Network Learn about trends in the enterprise IT departments from Art Schoeller of the Gartner Group. Hear how CIOs and IT directors are working to elements of their infrastructure, and how the resulting demand for services provided by network operators increases opportunity for open systems solutions in telecom networks and application service provider environments. Then hear from Tony Roug of Dialogic how the CT server is bringing together intelligent network concepts and enterprise solutions to form CT servers for the network. The CT server allows productivity applications to be hosted at a network level, for crucial integration with enterprise databases and desktop control. Requirements for applications Public network apps talking to enterprise apps and databases ■ Call centers ■ Next-gen Centrex Technical considerations for outsourcing communication services ISPs and ASPs role in providing basic communications services in next generation networks.	Moderator: Art Schoeller, Gartner Group Art Schoeller, Gartner Group Tony Roug, Dialogic TBD, Data Hosting Company
12:00 noon	Lunch	
1:00 pm	Panel: Surviving the Sale in the Large Carrier Market Now that you're about to make the big sale to a large carrier, the fun is just beginning. If you don't know what the carrier expects in support, quality, and speed of new development, you may be in for a shock. Cost overruns, drained resources, and delayed revenue can all result from a software developer's lack of experience in this industry. In this session, you'll learn what large carriers need from software developers and systems integrators throughout the life cycle of a product or platform. Explore the impact of software design on both initial and ongoing costs and learn why developers need to experience the maintenance challenges their work will bring. You'll leave understanding how to convince your carrier customer you are truly committed to his success. Measuring your responsiveness and quality of service. The latest tools allowing network technicians to service their systems. ■ Operations interfaces ■ Troubleshooting and tracing systems	Moderator: Carl Copping, Sprint Carl Copping, Sprint Jeff Hillis Sr., Motorola Cellular Systems Group
2:15 pm	Break	
2:30 pm	Roundtable: New software model for public networks ■ Directory services ■ OSF ■ Operating systems requirements ■ CT Media for the Public Network	Moderator: Peter Gavalakis, Dialogic Panelists: Bill Spain, Dialogic Gene Eagle, Dialogic Dwight Irving, Dialogic

Agenda by Track



Agenda by Track

Track 3—Wednesday November 17—Technologies Track

Time	Speech Technologies	Speaker
8:45 am	<p>Speech Technologies: Moving from Technology-Driven to Customer Driven Applications</p> <p>Telephone speech recognition makes existing telephone applications easier to use. It also makes new applications possible. This session categorizes speech recognition applications and discusses their market status. A leading industry expert will give you an overview of opportunities created by the telephony voice user interface and explain how they are being addressed.</p>	Bill Meisel, TMA Associates
9:15 am	<p>Panel: Lowering Barriers to Entry for Developers</p> <p>What does it take to develop telephone applications using speech recognition and text-to-speech? This session will provide guidance on hardware platforms and software architectures, the development process, and the tools available to make that process easier. A case study will illustrate the kinds of problems that can arise in specific cases and approaches to solving them.</p> <p>Does it pay to add speech recognition?</p> <p>Provide a developers viewpoint of the investment needed in resources, development, other areas to successfully develop speech enabled products, and discuss developer concerns and issues for technology providers.</p> <p>Point: Provide technologists' viewpoint on requirements to enable broad deployment of speech-driven telecommunications solutions. Discuss issues and SpeechWorks efforts to enable broad deployment (ie, tools, pricing, packaging) and how they differ from competitors.</p> <p>CounterPoint: Provide differing viewpoint on requirements to enable broad deployment of speech-driven telecommunications solutions. Discuss issues and Nuance efforts to enable broad deployment (ie, tools, pricing, packaging) and differences from competitors.</p>	<p>Moderator: Bill Meisel, TMA Associates</p> <p>David Fuller, Interactive Intelligence</p> <p>Mark Holthouse, SpeechWorks</p> <p>Felix Gofman, Nuance</p>
10:30 am	Break	
10:45 am	<p>Panel: Speech Technologies for Complex Environments</p> <p>Applications that service especially complex problems demand robust technologies and tools — like large-vocabulary, natural-language, full-duplex, telephone-based speech recognition. Too complicated for the simple call flow scripting methods in common use, these environments need special care. This session explores the tools, design and development strategies, and architectures it takes to build speech-enabled systems for complex environments. Both speakers have extensive experience in both the theory and the practical art of applying speech recognition. Scholz describes tools that support design from conception; "WOz" testing; and prototyping through integration, testing, and deployment. Yudkowsky discusses the Dialogic CT Media platform and its support for current industry standards, focusing on its role in getting stable applications out the door.</p> <p>Building Natural Language Understanding into Speech Applications</p> <p>Open systems speech servers: Development and application</p> <p>Discuss ECTF speech server, Dialogic product development plans and their fit with Microsoft speech strategy.</p>	<p>Moderator: Bruce Balentine, Same Page Design Group</p> <p>Bill Scholz, Unisys</p> <p>Moshe Yudkowsky, Dialogic</p>
12:00	Lunch	
1:00 pm	<p>Panel: Design tips for speech-enabled applications</p> <p>Speech recognition can greatly improve the user's experience with automated telephone systems over a touchtone application. But the details of the application's design and its spoken dialog with the caller are crucial to the application's success. This session gives specific guidelines and examples on creating a good experience for the caller and an effective result for the company deploying the system.</p>	Moderator: Bill Meisel, TMA Associates

	<p>Designing for human factors</p> <p>Using speech interfaces to design "self service" applications</p> <p>Give user's perspective on deploying solutions, covering original requirements, implementation issues, limitations and workarounds, and conclusions for developers.</p> <p>Making speech technologies cost-effective using the CT server model</p>	<p>Bruce Balentine, Same Page Design Group</p> <p>Mal Gray, TeleManagement</p> <p>TBD, Phillips Speech Processing</p>
2:15 pm	Break	
2:30 pm	<p>Roundtable: Developers and Technologists Speech Debate</p> <p>Technology vendors will often say that developing speech recognition applications requires care, but better high-level tools are making it easier. Where are the pitfalls? How are these issues being addressed? Are off-the-shelf applications possible? When is advanced speech echnology the right solution? Our panel of experts will respond to questions from the moderator and the audience.</p>	<p>Moderator: Bill Meisel, TMA Associates</p> <p>Panelists: Howie Cahn, Aspect</p> <p>Jere Waugaman, Syntellect</p> <p>Tom Schalk, Phillips Speech Processin</p> <p>Felix Gofman, Nuance</p> <p>Ed Zinnes, IBM</p>

Track 3—Thursday November 18—Technologies Track

Time	Systems Architecture Issues	Speaker
8:45 am	Principles of fault management and their application	Brian Peebles, Dialogic
9:15 am	<p>Panel: System Availability Issues</p> <p>Building fault tolerant systems through redundancy</p> <p>Improving system availability through fault management</p> <p>Managed objects for better system administration</p>	<p>Moderator: Rich Graber, Dialogic</p> <p>Colin Kelley, PulsePoint</p> <p>Brian Peebles, Dialogic</p> <p>Alan Stone, Dialogic</p>
10:30 am	Break	
10:45 am	<p>Panel: Distributed Systems and Networking Technologies</p> <p>NGIO for communications</p> <p>An overview of NGIO and its impacts on telecommunication systems and product developers.</p> <p>Building distributed telecommunications servers using the OMG application model</p> <p>Designing systems with distributed resources</p> <p>Describe advantages and issues in developing systems with distributed speech technologies in CT server environment with CT Media.</p>	<p>Moderator: Rich Graber, Dialogic</p> <p>Tom Macdonald, Intel</p> <p>TBD, OMG</p> <p>Mike Phillips, SpeechWorks</p>
12:00	Lunch	
1:00 pm	<p>Panel: Servers and Applications</p> <p>CT servers and IP Protocols</p> <p>Distributed CT servers</p> <p>ATM, IP and NGIO</p> <p>Designing distributed applications on CT servers</p>	<p>Moderator: Rich Graber, Dialogic</p> <p>Steve Magnell, Dialogic</p> <p>Peter Robson, Dialogic</p> <p>Paul Gagne, WhiteCap</p>
2:15 pm	Break	
2:30 pm	Ask the Architects Roundtable	<p>Moderator: Rich Graber, Dialogic</p> <p>Panelist: Steve Magnell, Dialogic</p> <p>Brian Peebles, Dialogic</p> <p>Joe Grecco, Dialogic</p> <p>Tom McDonald, Intel</p>



VARConnection—Wednesday November 17

Time		Speaker
1:00 pm	<p>Panel: What's Hot in Messaging</p> <p>Unified messaging has come of age and is fast being implemented in a wide range of organizations. With a variety of platforms to choose from, it's essential to explore the product architecture issues and options and learn how to choose the best solutions. This session shows implementers and developers how to build Microsoft Exchange-based unified messaging solutions that take advantage of Exchange's unique features. You'll also learn the facts about fax and how it is being implemented as a crucial part of a true unified messaging solution. Topics include the special problems and opportunities inherent in integrating fax, Exchange, client-based versus server-based architectures, and other critical elements of unified messaging. As the unified messaging market quickly accelerates, developers will gain valuable insight into translating user issues into must-have product and business requirements.</p> <p>Making Unified Messaging even hotter: the facts about fax!</p> <p>Unified messaging product architecture options: client or server, Lotus or Exchange</p> <p>Getting Voice and Fax on Microsoft Exchange</p>	<p>Moderator: Blair Pleasant, The Pelorus Group</p> <p>Peter Davidson, Davidson Consulting Julie Freguia, AVT Kevin McCuiston, Microsoft</p>
2:15	Break	
2:30	<p>Roundtable: How Realistic is Shrink-Wrapped Telephony?</p> <p>The promise of shrink-wrapped telephony is compelling: It would tear down the biggest barrier to CT market growth and channel education. VARs could invest less to get into CT, make more money, and provide their customers with more cost-effective solutions. But is it realistic to think we will ever see shrink-wrapped telephony? Our roundtable of industry experts will explore market and technology trends, standards efforts, and the move to an open systems model. You will leave understanding if — and when — we will see easy-to-install CT solutions. Developers will learn what to do to make their apps more VAR friendly. VARs will get a sense of what it will take to succeed in the CT space as the world moves to shrink-wrapped telephony. This session will help developers, VARs, interconnects, system integrators, ISVs, PC and platform providers, and channel partners.</p>	<p>Moderator: Jim Burton, C-T Link</p> <p>Panelists:</p> <p>Guy Blanchette, Omtool Scott Sorensen, CoreSoft Fred Yentz, IBM Rami Safadi, UltiVerse Edith Abbate, Catalyst Telecom Jeff McLendon, SNAPS</p>
3:30	<p>Installing CT Made Easy: A Hands-On Workshop</p> <p>Learn how easy it is to install, configure, and test Dialogic hardware and software. This hands-on workshop gives you a chance to configure and install Dialogic hardware, a key building block for computer telephony (CT) applications. You'll try your hand at installing a board and see how easy it is to add CT solutions to your current offerings. We'll also discuss considerations for choosing the most efficient PC platform to meet the application requirements of the Windows NT® environment.</p>	Dialogic Training Organization

Notes

VARConnection—Thursday November 18

Time		Speaker
8:30 am	Introduction and welcom	Howard Bubb, Dialogic
8:45 am	<p>The CT Market in the Millennium: Opportunities for VARs</p> <p>How to expand into the next millennium with CT</p>	John Landau, Dialogic
9:00 am	<p>Defining the CT Market</p> <p>An industry perspective on this fast-growing market and the trends to watch</p>	Mary Bradshaw, MMTA
9:30 am	<p>CT Solutions Today and Tomorrow</p> <p>Learn from the experts — ISVs — how to make money selling CT</p>	Scott Douglas, Compaq Peter Keenan, Artisoft Max Schroeder, Optus
10:45 am	<p>How to Sell CT</p> <p>The basics that everyone needs to know. Janet Szivla, who teaches this course to resellers throughout the country, is doing this just for TechSummit. Win prizes, have fun, and get the tools you need to sell CT.</p>	Janet Szivla, AIS Group
12:00 noon	<p>Lunch: Distributor Panel Discussion</p> <p>Have lunch with the six top distributors in the CT industry.</p>	<p>Moderator: Gary Marks, Dialogic</p> <p>Mike Baur, Catalyst Telecom Rusty Cone, Alliance Systems Tony DeLouise, Comport Kelly Harvey, Ingram Micro Joe Serra, Tech Data Jeff Valiant, Cygcom</p>
1:00	<p>Making the Move from Data to CT Resale</p> <p>Learn how your existing customers can integrate CT into their current products — and you can be profitable doing it.</p>	Kelly Harvey, Ingram Micro
1:30	<p>Panel: Getting-to-Market Strategies</p> <p>Meet resellers who have succeeded in the computer telephony market. Learn how easy it was to get started and what you need to do to successfully sell CT solutions.</p>	<p>Moderator: Bob Visintainer, Dialogic</p> <p>Steve Burgess, TCS Technologies David Klein, Instant Information Systems David Saidel, HCI Technologies</p>
3:00	<p>Technical Support Opportunities</p> <p>Support is every reseller's largest concern. Learn what your options are for tech support through your distributors.</p>	Brian Marsh, Dialogic
3:15	<p>CT Worked for Me: A Success Story</p> <p>Meet a real end user and hear about his success with computer telephony.</p>	Mike O'Hara, AB&C Company

Notes

Agenda by Track



Agenda by Track

SAN DIEGO 1999

It's official: Dialogic is now an Intel subsidiary and a new division of the Intel Communications Product Group. Intel, the world's largest chip maker and a leading manufacturer of computer, networking, and communications products, acquired Dialogic to make the open server platform the centerpiece for next-generation voice and data network solutions.

The marriage of the two companies is a natural. Intel is a major advocate of open computing, with a long track record of creating innovative and more efficient business models. Dialogic is the leader in open telecommunications technologies and standards. Together, the two companies are poised to create a new era of open communications products and opportunities.

Dialogic Joins Intel for a New Era in Communication Technology

Goals for the new Intel Communications Product Group include scaling server platforms based on the Intel architecture, pursuing new and emerging market segments fueled by the Internet, ensuring a healthy horizontal industry, and producing computing building blocks at all levels of integration, from chips to systems. Products from the Intel Communications Product Group include processors, chipsets, boards, and systems.

The benefits to the industry are clear. By joining together, these two global companies are bringing the benefits of open computing to the entire communication industry. Customers can quickly bring their products to market by using standardized system building blocks. They will enjoy a broader choice of solutions with more efficient channels of distribution. And they will lower the cost of deploying new services. It's a new era in communication technology. **INSIDER**

SCO



IP Telephony: An Innovator Reflects

BY JIM MACHI, DIALOGIC, DIRECTOR OF IP TELEPHONY MARKETING

Dialogic began like most start-ups, by taking an innovative idea—in this case, combining computers and telephones—and building a company on it. But unlike most start-ups, Dialogic also created an industry—the CT industry.

To get where we are today, Dialogic has continued innovating. Today we can claim 35 patents and more industry firsts than we can even count. This innovation has spurred our growth into a \$300 million company that caught the eye of industry giant Intel.

One Dialogic innovation that has truly rocked the world is IP telephony. And from a seed of an idea in the mid-90s, IP telephony has grown into a garden of applications that are changing the way the world communicates—and will be changing the industry and the world for years to come.

In the Beginning...

Way back in 1995, some of the innovator types at Dialogic—namely Howard Bubb,

Bob Heymann, John Landau, and Larry Fromm—were speculating that the Internet *might* be important to telephony in some way. They weren't sure how, but they knew—just *knew*—it might have some small importance. At the same time, VocalTec was getting started, working on the industry's first Internet telephone. Before long, the two companies found each other and began collaborating.

The IP telephony idea began to blossom in spring 1996, when Dialogic demonstrated the first PSTN-to-IP telephony gateway at CT Expo. At that point, IP telephony wasn't much more than a curiosity. "Sure, that's cool," they said. "But it has limited use. It's not for me or my customers."

If we go back in history, we'll find "they" said something similar about the automobile, talking films, the computer, and every other world-changing innovation. But we know that while it's still possible to find horse-drawn carriages or silent movies or slide

rules, they've all become more museum curiosities than working technologies.

One visionary—or entrepreneur (which amounts to the same thing) who saw the power of combining the Internet with telephony was Jeff Pulver, who promptly founded pulver.com and started the Voice on the Net (VoN) shows. At the first VoN show, Dialogic was one of only six exhibitors. From our simple 8-foot table, we quickly got to know all 70 attendees very well. As you probably know, the Pulver shows are now a huge success—in some part, we like to think, because Dialogic has been a sponsor of every one. (By the way, the running joke at the VoN shows is that Jeff Pulver is the only person who has actually made money on IP telephony.)

Let's Get Serious

We knew the Pulver shows—and IP telephony in general—were finally getting big when the first ties showed up. This meant that "serious" and "studious" people—in this case the telcos—were getting interested. At first they came to learn. Later, they came to buy equipment so they could deploy trials. All the while, small companies were busy actually deploying IP telephony—taking advantage of rate arbitrage since the "long-distance" part of the call was over the Internet. Many of these companies deployed with Dialogic equipment inside. All of them offered rock-bottom rates. And the calls were of good enough quality that millions of minutes started piling up. People were noticing. IP telephony wasn't just for geeks anymore.

The next big breakthrough was when Dialogic introduced DM3 IPLink in February 1998. The CT Expo tradeshow that March was unbelievable. We had two IP telephony demo stations, both of them crowded five customers deep for the entire run of the show. We knew we had the right product.

Another indicator that something important is happening is when companies go to

the government looking to have regulations drawn up to control "them" so that "we" can keep doing what we're doing. In the U.S., IP telephony reached a milestone on April 10, 1998, when the FCC issued its report on the Internet. The FCC withheld judgement, but did say that any phone-to-phone call was potentially subject to the universal fund tax, pending any complaints. Complaints were filed by U.S. West and BellSouth, who had presumably started losing significant minutes to next-gen telcos.

When Worlds Collide...

Then things really got interesting. Nortel bought Bay. Lucent bought Ascend. Cisco bought Summa Four, and Selsius, and Geotel, and—well, I had to submit this article quite awhile ago, so you can fill in the rest. Worlds collided. The telcos began competing with the data networking vendors.

At stake for the telcos is their very existence. If all phone calls can be made over data lines, the telcos, and historic telco equipment providers, aren't necessary. If it's possible to make a phone call over any broadband medium, the very concept of a phone goes away.

But if I were a telco (and I *do* have a few suits and ties), I'd love the idea of IP telephony. After all, if you can place a phone call over cable, that makes the telco an ISP—which means new revenues. Also, it means you can get into anyone's home pretty easily via a "non-telco" route—in this case, broadband access. AT&T quickly figured this out. One of these days, you'll get a single monthly bill from someone like AT&T for your Internet access, cable TV use, and home phone use—since you'll receive all of them over the cable coming into your home. This is still playing out, but it won't be long now.

A Bumper Crop

I must confess, even Dialogic didn't realize the swift and powerful impact IP telepho-



ny would have on the world. In the three years since that first demo, IP telephony has been fully embraced. All the doubting "thems" are gone. The only question now is how soon everything will happen.

Today, IP telephony vendors have produced healthy crop of successful applications:

Enhanced Services—As the telco infrastructure builds out to an IP network, applications (for example, unified messaging and network IVRs) are building out with it. As the IP network unfolds, the true benefits of IP telephony—lower infrastructure costs due to use of open systems and the more economical use of bandwidth—are being realized

Rate Arbitrage—Phone-to-PC or PC-to-phone operation can take place with one gateway. Phone-to-phone PC operation, which has been the cornerstone of the IP telephony industry for the past few years, can occur with two gateways. To offer international long-distance service using gateways, an organization or service provider can host one gateway in each country. By bypassing the international connect charges—even paying in-country long distance rates—the con-

figuration costs significantly less than traditional circuit-switched service. Now companies can save even more money by routing their fax transmissions over IP.

Internet Call Waiting/Phone Doubler—A phone doubler solves the Internet-or-phone-call problem without the added expense of an extra phone line. Internet users can place and receive calls via the PSTN while surfing on the Internet, without interrupting Web navigation or other interactive applications. A phone doubler is attractive not only to subscribers, telecommuters, and road warriors, but also to telecom service providers looking to grow their business. ISPs see a phone doubler as both a way to differentiate themselves and a way to generate extra revenue.

IP-Enabled PBX—Almost all businesses have IP on every desktop to handle LAN and data needs. It's very tempting to use that same LAN to reduce infrastructure costs in the enterprise. IP-enabled PBXs allow business users to either make calls using their computers or to use phones that look and act like traditional phones and phone equipment, yet have an Ethernet connector on the back

instead of an RJ-11. This all occurs via an IP-enabled PBX.

Web-Enabled Call Center—Companies can strategically link their call centers and Web sites, creating enormous opportunities for electronic commerce. A call center gateway allows Web surfers with properly equipped multimedia PCs to connect to an existing Automatic Call Distributor (ACD) with Internet phone technology. Customers accessing a Web site can immediately speak with a customer service agent to get information or place an order. In fact, this has even spawned a new name. You may now see a call center referred to as a *contact center*.

What Does It All Mean?

Dialogic has always recognized the importance of enhanced services to IP telephony. We knew what our roadmap should be and we stuck to it. Of course, there were some bumps along the road. For instance, we were late with UNIX. But we started to enable our pure router gateways with enhanced services. Today, it's possible to send fax over IP. The PSTN interface is also now part of the IPLink product—making it possible to build a full-featured IP telephony with a single board.

From the Dialogic perspective, IP is really just another input or output possible for telephony—another option like analog, BRI, PRI or ATM. Conferencing using pure IP, speech recognition using IP, play/record directly to or from the IP network—they'll all be enabled in IPLink to the point where it will exist in a pure IP world where the historic voice network will be just an adjunct—not the other way around.

Dialogic also walks the walk. We use IP telephony ourselves—in our own Web-enabled technical support call center and also with gateways between Dialogic offices. We did it to learn through experience and to make our products better. But we also did it as a customer would—to lower our phone,

fax, and administrative costs. In this respect, we are just like all companies. If we can do it, so can you. And so can your customers.

As IP really becomes just another I/O, the CT server concept becomes ever more important. CT Media, our CT server software, now supports IPLink which means you can build a CT server using CT Media without having to write to the IPLink APIs. Your application written to CT Media doesn't have to worry about those IP resources, or that analog, or BRI, or whatever. That's the beauty of CT Media. It does all the hard work for you.

Growing Into the Future

In just a few short years, IP telephony has gone from a seed of an idea to a thriving garden of applications that are changing the way the world communicates. And the real impact of IP telephony is just beginning. Over the next few years, anyone who isn't taking advantage of IP telephony technologies will be left in the dust.

Dialogic is proud to have been there from the beginning. And we're ready to help grow IP telephony into the future. **INSIDER**

MidiaVox Ltda Brings IP Telephony Home to Brazil

Founded in 1994, MidiaVox Ltda (<http://www.midiavox.com.br>) is a Brazilian company that supplies its customers with a variety of open CT integration solutions including voice mail, interactive voice response (IVR), and automatic call distribution (ACD).

MidiaVox learned about the burgeoning new world of IP telephony from a presentation at TechSummit '98. They took their new ideas home and promptly used them to produce the LinhaLivre system.

Targeted at telco customers, the LinhaLivre system was built with IPLink IP telephony technology from Dialogic. It gives users the convenience of being able to receive incoming phone calls while they are connected to the Internet. Users can answer

the telephone and continue working on the Web without having to install an expensive second line. With LinhaLivre, the user's telephone is programmed to use the call transfer service, so when a call comes in it is automatically redirected to MidiaVox's gateway, then to the user's PC.

The system provides an added advantage for MidiaVox's public network customers looking to differentiate themselves in a highly competitive marketplace. It is also an easy way for service providers to generate extra revenue. For end users, LinhaLivre is a tool that enhances productivity. It also gives customers the advantages of having an extra phone line without the expense.



See It at the Technology Resource Center

You can get a look at all the newest components and technologies for building next-generation unified messaging solutions at the TechSummit Technology Resource Center. Drop by for cocktails and the hottest next-generation technologies on the planet, plus live demonstrations. The Center is open every day of TechSummit from 3:30 to 6:00 p.m., with new product presentations starting on the half hour.

CT Media Makes Developing New Services *Quick Work*

When Deutsche Telekom wanted to launch a new prepaid service, it decided that only its in-house development staff could provide the true differentiation the service needed to succeed. However, the company wanted the flexibility to easily add best-of-breed voice recognition, fax store-and-forward, and voice mail applications as needed. Deutsche Telekom turned to Dialogic CT Media server software running on the Compaq ProLiant server to build a completely scalable and efficient telephony application on a truly open, standards-based platform.

Deutsche Telekom is one of dozens of providers—including Rockwell Electronic Commerce, IBM, and Microsoft—using CT Media to build computer telephony (CT) server solutions. “Since our leading resource

development partners have ported their resources to CT Media,” reported Paul Lindquist, product manager for CTI platforms and messaging at Ericsson Enterprise Networks, “we essentially have the freedom to write an application once and integrate it with resources from a variety of vendors around the world.”

The CT server solution is the next wave in business communications development. The CT Media server software core is a completely open resource manager compliant with both S.100 and TAPI standards. End users of the system can choose best-of-breed applications with the assurance they will work well together. By enabling different applications to interoperate on the same hardware, CT Media cuts time to market, lowers development costs for adding applications, and delivers higher returns on investment. “It costs \$1.5 million to \$2 million just to trial some new services,” explained Gregg Baltzer, vice president of public network marketing for Dialogic, “but with a CT server platform in your network, you can add an application for trial without adding hardware. Your costs go down by a third in the trial phase. Once the application is successful, it can generate the revenue to pay for expanding the system hardware.”

Dialogic, the market leader in CT, chose Compaq for its integration capability and reputation for quality telecommunications solutions. “If you want an open solution with quality and reliability, you won’t get any better than with Compaq,” confirmed Baltzer. Together, the companies are co-founders of the Enterprise Computer Telephony Forum, an organization committed to promoting the importance of standards and interoperability in the CT market. **INSIDER**

Ericson



SAN DIEGO 1999

Dialogic is the Foundation for Intelligent Unified Messaging

Unified Messaging With Dialogic Components Tames Communication Chaos.

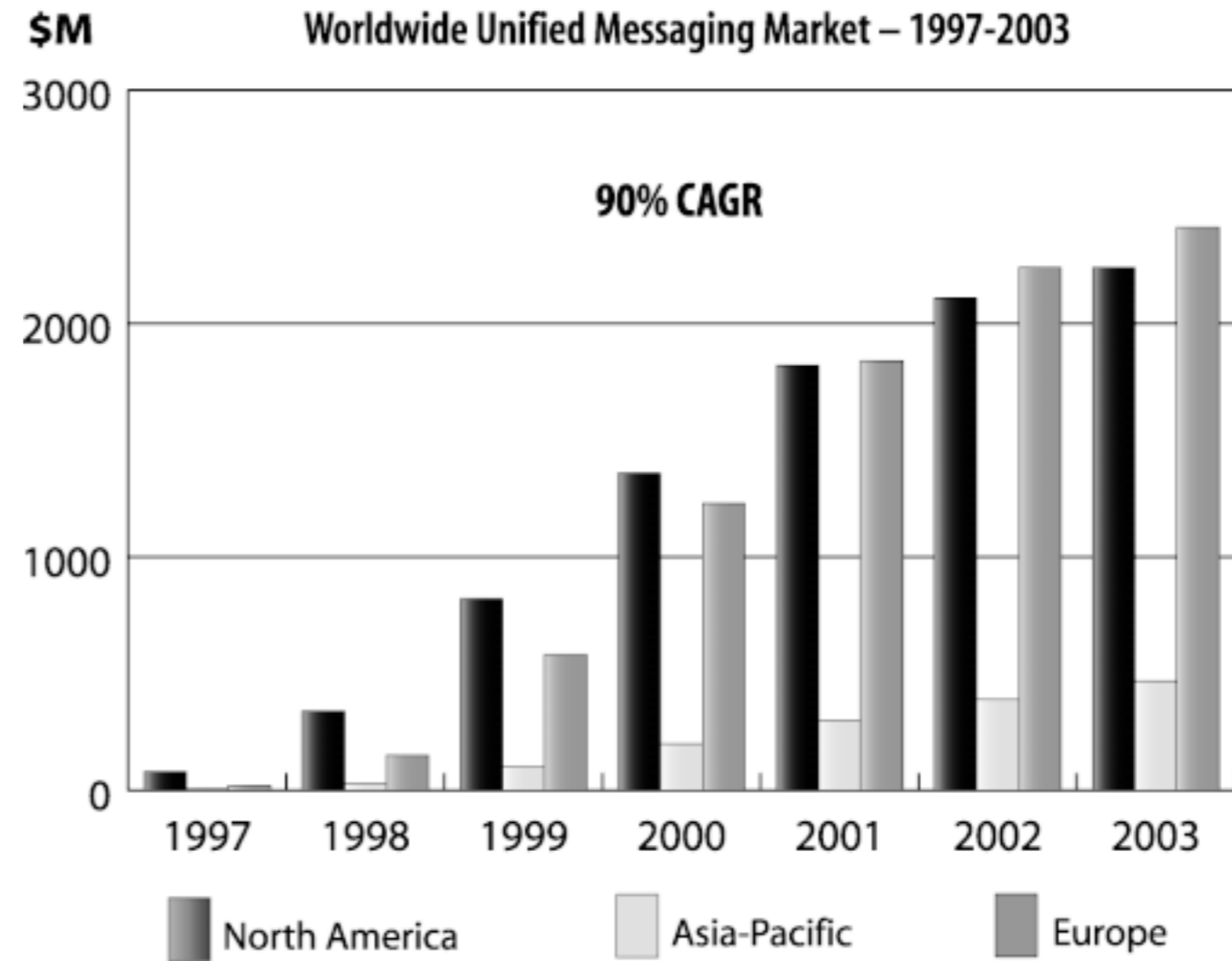
Unified messaging. These two simple words have come to symbolize the Holy Grail of office automation. To see why, consider a recent Pitney-Bowes study which found the typical business professional gets 169 messages a day. These messages are the foundation on which we organize, prioritize, and reprioritize our work day. But they are almost impossible to manage. Voice mail, email, faxes, postal correspondence — they fly at us from all directions. With so many messages — and so many different types of messages — the study found effective communication has grown increasingly complex and challenging, even as it has

become more and more important.

Unified messaging promises to bring order to this communication chaos, uniting different types of messaging into a single, easy-to-manage universal service. Dialogic, the world's leading supplier of open computer telephony (CT) components, is delivering the technologies to enable true universal messaging through an initiative called MultiMedia Messaging (M3).

M3 symbolizes the suite of products and services from Dialogic that puts the intelligence into unified messaging solutions. This combination of products enables users to manage messages regardless of message type (voice, fax, email) or the communication device they choose to use — making messaging truly universal.

Fig. 1: Market for Unified Messaging



The market for unified messaging is taking off. (Source: "Ovum Evaluates Unified Messaging," 1998)

The Growing Market for Unified Messaging

Today, unified messaging systems make up only a fraction of the overall market for voice and data messaging solutions. But that picture is quickly changing. Although the numbers may differ from one study to another, the net trend is clear. The universal messaging market is a gradual slope that is quickly turning into a steep peak as more and more organizations take advantage of its benefits.

The common picture of a unified mes-

saging system is one that combines voice, fax, and email messaging on a single graphical user interface (GUI) client. But this is just the beginning. While having singular access to different types of messages may provide some relief, it falls far short of giving users the power to organize and prioritize their business day. This is especially true for mobile users who can't always rely on computer and network access.

A true unified messaging must give users flexible access to their messages from a variety of devices such as the tele-

phone or remote PC. Plus, the user's experience with the messaging system must be enhanced with some built-in intelligence that boosts productivity.

Dialogic Corporation is drawing on its position as the leading supplier of open, high-performance CT components for voice and fax messaging to put the flexibility and intelligence into unified messaging solutions. Dialogic customers are some of the world's foremost developers, resellers, and OEMs. These customers use Dialogic products as the building blocks



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for today's leading computer and IP telephony applications—including voice, fax, data, voice recognition, speech synthesis, and call center management solutions. Thousands of Dialogic partners around the world have deployed more than 3 million ports of Dialogic products.

The Dialogic M3 initiative is enabling intelligent messaging by providing three essential elements:

- **Open CT Components** — Dialogic has always supported open, standards-based CT. Open systems deliver dramatically greater value than closed, proprietary systems. The cost of ownership is less, since a single system supports many applications. Users have a much richer selection of applications, since applications are easier to develop and deploy. With a much broader selection of applications on the market, the cost of development goes down even more—resulting in greater diversity and more powerful applications. Continuously lower costs for hardware, software, and services lead to higher volume and low barriers to entering the market with new applications. The increased competition is another factor driving down costs.
- **Open CT Server** — Dialogic CT Media™ for Windows NT® is the first open server software for designing standards-based telecommunication servers that support messaging,

interactive voice response (IVR), fax, automatic call distribution, and other applications from different vendors. CT Media makes it possible for multiple applications developed to standard APIs like Enterprise Computer Telephony Forum (ECTF) S.100 and Microsoft TAPI to share both a common CT Server and all the server-resident technologies. CT Media also provides an open interface to SCbus™ and ECTF H.100 technology hardware, allowing new technologies to be added to the server without the need to change existing applications.

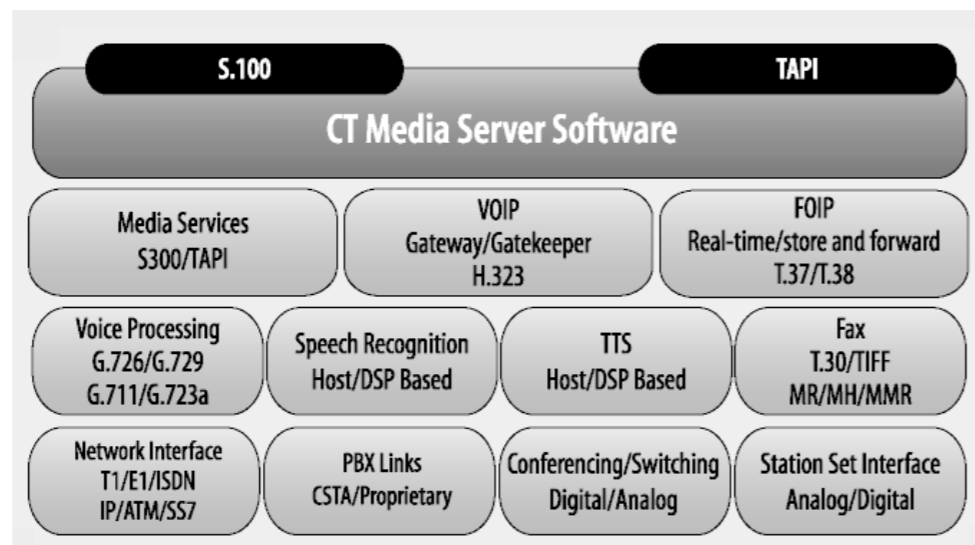
- **Professional Services** — Dialogic

technical consulting, training, certification, and support services help accelerate your application design and test cycles. Dialogic Professional Services is one-stop shopping for expert advice and support during every phase of your product's lifecycle including design, development, deployment, and post-production maintenance.

Making Message Access Transparent

At the heart of universal messaging is the idea that users need access to their messages in any form they choose. Users must be able to dictate when, where, and how their messages are available. The success of a universal messaging system is measured by the degree of freedom and flexibility it provides users in getting their messages. MultiMedia Messaging gives Dialogic customers an array of choices in technology and products, providing the freedom to build the industry's most flexible messaging solutions.

Fig.2: The Dialogic Value Proposition



Dialogic supplies the components and technologies to enable intelligent universal messaging.



Datakinetics

Using the Universal Availability of the Telephone

By most estimates, there are almost half a billion landline, wireless, and fax telephones in use today. While Internet and PC use are growing explosively, the phone is still the most universal communication device. To succeed, a unified messaging solution must take full advantage of the telephone in all its forms—which means building interfaces that let users interact with their messaging systems through a telephone user interface (TUI).

Dialogic is the worldwide leader in providing the open components that allow unified messaging systems to provide TUI access to messages in a number of ways.

Listening to Email

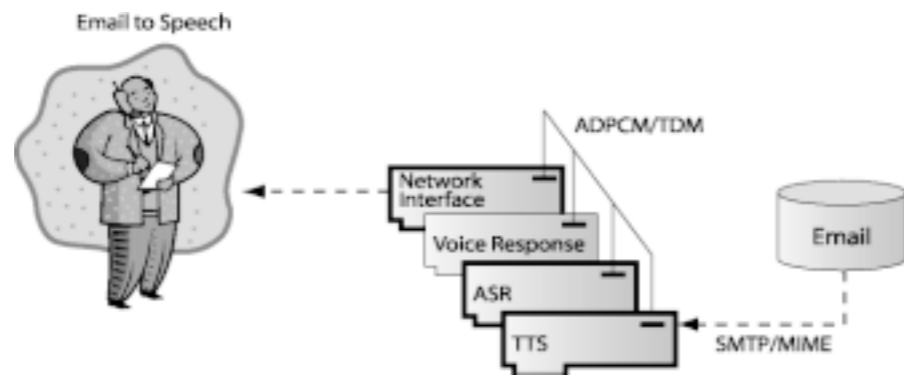
Say you're expecting a crucial email message, yet have no way of connecting and downloading the data because you're at the airport or stuck in traffic. Dialogic text-to-speech (TTS) products work with voice and network interface products to let you call into the CT network, search for a particular message, and have it read to you.

Speech Recognition

You're between planes with no time to plug in your laptop and download email—and you're expecting an email from your boss with some crucial information for your upcoming customer meeting.

Dialogic speech technology products provide the intelligence needed to retrieve the information you need over the phone no matter where you are or how little time you have. A telephone keypad has obvious shortcomings when it comes to finding the right piece of information, such as a particular email. Dialogic DSP-based and host-based speech recognition products let developers build applications to let callers quickly sift through a list of

Fig. 3: ASR and TTS



Dialogic ASR and TTS technologies make it easy to retrieve email using voice commands.

messages by speaking key words or phrases. The system matches these words against specific message attributes like subject, sender, or other parts of a message header.

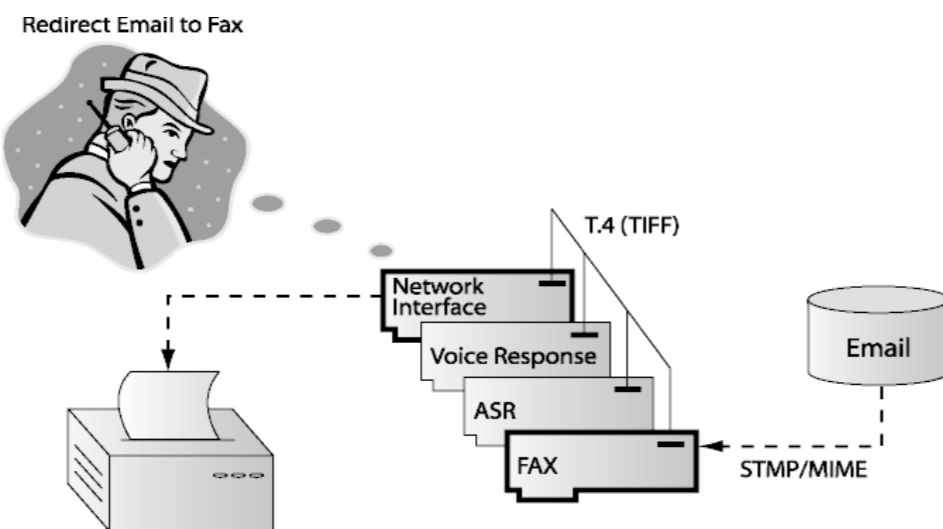
Email: Coming to a Fax Machine Near You

The new sales figures for the quarter are out and you're on your way to meet some investors at a hotel. You could log into the network from the hotel suite and

download the file, but you left the office in a hurry and you're not sure you packed the right telephone jack with your laptop. The hotel does have a business center equipped with fax machines.

As advanced as TTS technology has become, some email correspondence is better read than spoken. The M3 suite of products allows solution providers to incorporate LAN fax technology into their applications, making it possible to forward the email to an accessible fax machine—a

Fig. 4: LAN Fax Integration



Dialogic LAN fax products let developers incorporate fax into their unified messaging systems.

feature particularly useful for business travelers. You simply dial into the messaging system, navigate with spoken commands to the email containing the sales figures, and choose the option to forward it via fax to the hotel fax machine. The system prompts you to enter the fax number and the sales figures are waiting for you when you arrive.

Unified Access From the Desktop

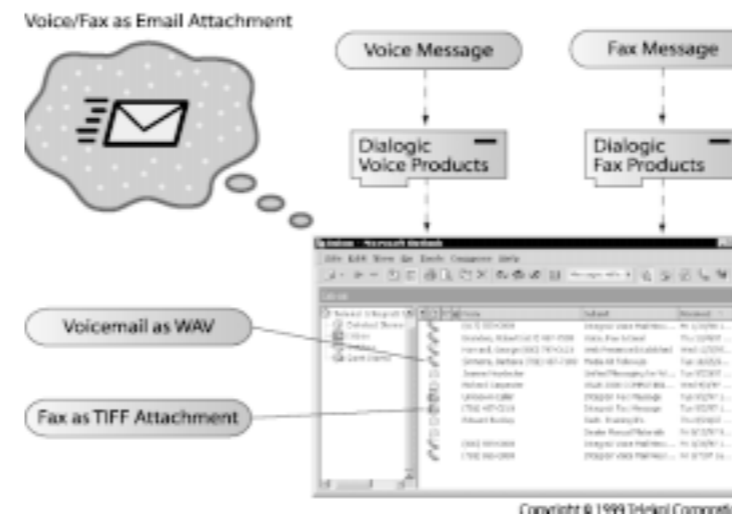
As universal as the telephone may be, the PC desktop continues to be the central focus of productivity. That's why providing unified access to all types of messages from the PC desktop has become the very definition of unified messaging.

Dialogic provides the ingredients to integrate different types of messages, from processing voice messages into GSM formats like WAV, to converting fax images into standard TIFF files. Dialogic voice, fax, data, and network interface products help bridge the gap between traditional circuit-switched networks and packet networks.

Having unified access to all forms of messages from the desktop makes managing messages and users much more efficient. The user has not only access to all voice, fax, and data messages in one place, but also more flexibility in dealing with messages. For example, sometimes forwarding a voice message as an email attachment may be more efficient than translating the spoken message into written form. Annotating a convoluted email with a short voice message attachment can simplify effective communication.

In situations where only one phone line is available for connectivity, staying logged on and periodically checking your voice mes-

Fig. 5 Unified Access from Desktop

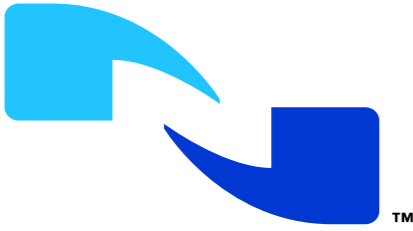


Dialogic media and network interface products make it possible to convert voice and fax into standard data formats like WAV and TIFF files.

MediaSoft

DataKinetics



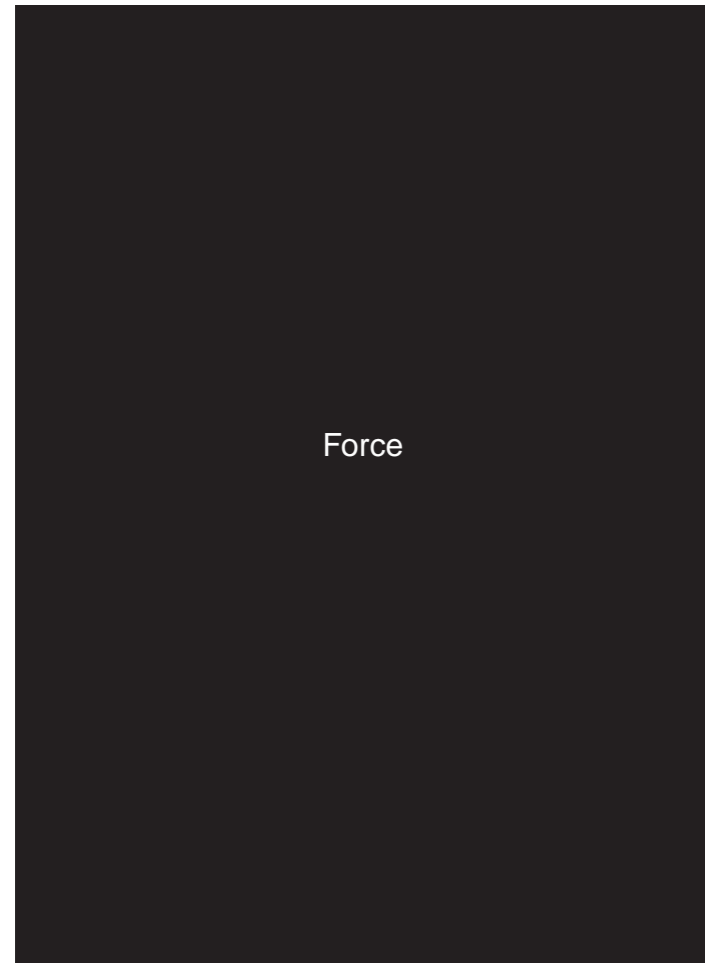


NUANCE

As the leader in speech recognition and voice interface software, Nuance is proud to participate in Dialogic's Technology Summit

For more information about Nuance call 1-888-NUANCE-8 or log onto www.nuance.com

Speech. Understanding. Action.



Force

TECHSUMMIT INSIDER

sages is going to be a challenge.

Dialogic media and network interface products can convert telephony messages—specifically voice and fax—into standard data formats. Thus, a voice message becomes a WAV file and a fax image is converted into TIFF—both standard formats accessible through standard email clients like Microsoft Outlook, Lotus Notes or any web-based email services. Therefore, all message types can be accessed through the desktop while logged on, using a single phone line.

Intentional Voice Messaging

Another key function of unified messaging is unburdening the user from restrictions on which medium they can use to send and receive messages. Besides making it possible to use the telephone to access email messages, Dialogic components also provide flexible access to voice messages.

Leaving a voice message is usually a default action, taken when the person you're calling is unavailable. Only the most advanced voice mail user has mastered the art of intentionally crafting a voice message and sending it to one or more recipients. Even when such a feature is available, you can only send messages to a closed user group—for instance, within your corporation.

That picture is changing. Voice Profile for Internet Messages (VPIM) is an International Telecommunications Union (ITU) standard that allows different types of messaging servers to pass voice and fax messages among each other over the Internet. Since it builds upon existing SMTP and MIME standards, VPIM is expected to be widely deployed as an integral part of a messaging system or on an adjunct gateway.

VPIM-encoded messages include special header information with the name, phone number, email address, spoken name, and a special VPIM address of both sender and receiver. Message servers use this header information to route the messages over the Internet to the appropriate recipients' mailboxes. Recipients can access their messages using both voice and email interfaces.

At the core of VPIM is the G.726 voice encoding scheme that calls for a MIME-encoded message of 320KB per minute of speech via SMTP, or 240KB with the binary SMTP service extension. Other audio coding standards are also being proposed for VPIM, including G.723, which has a more efficient encoding scheme.

Dialogic voice and data processing resources take advantage of the ITU-specified codecs including G.726, G.723, and G.711. That makes Dialogic products ideal for enabling applications to use VPIM for transferring voice mail between messaging servers on the Internet.

Imagine you just got word your team has won a coveted new account. You want to pass along the great news. But sending a bland email to your teammates—who are scattered across several time zones—isn't exactly what the occasion calls for. You could leave

voice mail messages, but some of your team members are on different voice mail systems.

Ordinarily, you would have to place your call several times—trying to sound equally ecstatic each time you left a copy of the message. But with VPIM, you can now intentionally record one exuberant message on your PC, then broadcast it to all your teammates. The messaging server takes the VPIM message and looks up all the recipients in a common LDAP directory, then sends it everywhere you want it to go.

Converging Networks

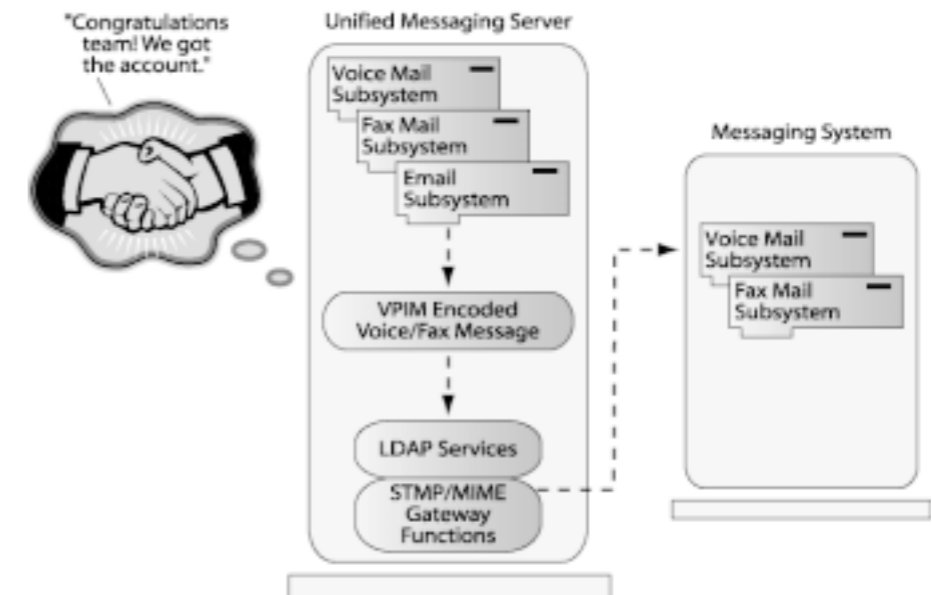
By definition, unified messaging combines messaging elements of both telephony and data networks, assuming the underlying networking infrastructure is designed for such a convergence. In reality, most enterprise telephony and computing networks remain loosely integrated at best.

Telephony and data networks are so loosely integrated for one key reason: while data networks evolved with open standards, telephony didn't. PBXs and their adjunct services have been designed mostly in a monolithic fashion, allowing little room for interoperability with other components of a LAN or communication network. This lack of interoperability also exists among CT services running on voice and data networks.

Since the telephone is the most universally available user terminal, it makes sense for intelligent unified messaging systems to rely on the telephone as a user interface to the messaging platform. That's why the ease with which you can access your messages depends on how well the PBX is integrated with the messaging system sitting next to it. In the proprietary world of PBX equipment, adjunct services like voice mail have also remained either proprietary or limited in what they can do.

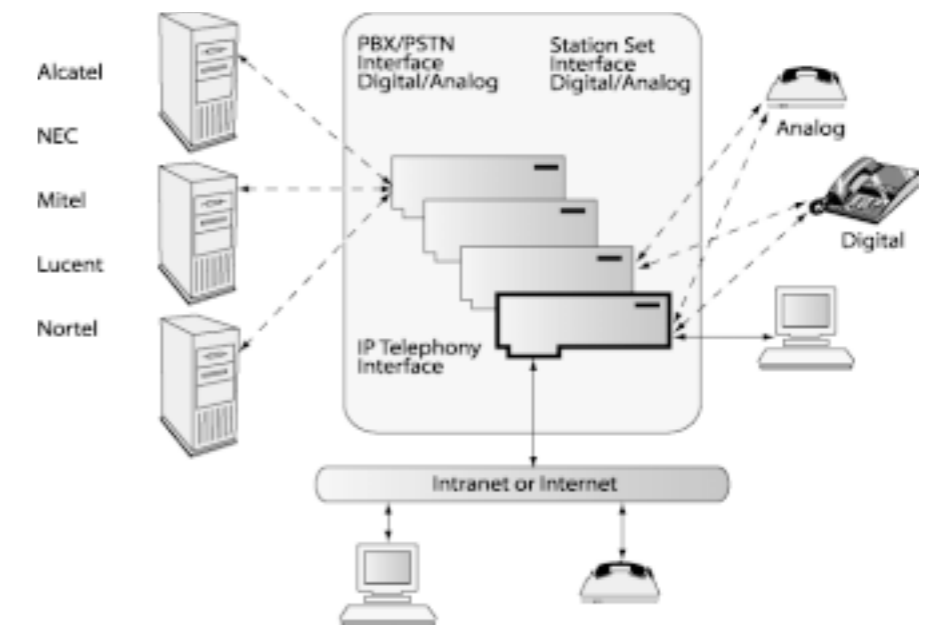
Dialogic products and technologies allow developers of adjunct messaging

Fig. 6: Intentional Voice and Fax Messaging



VPIM makes it possible to send multiple copies of the same voice/fax message—even outside your own workgroup or organization.

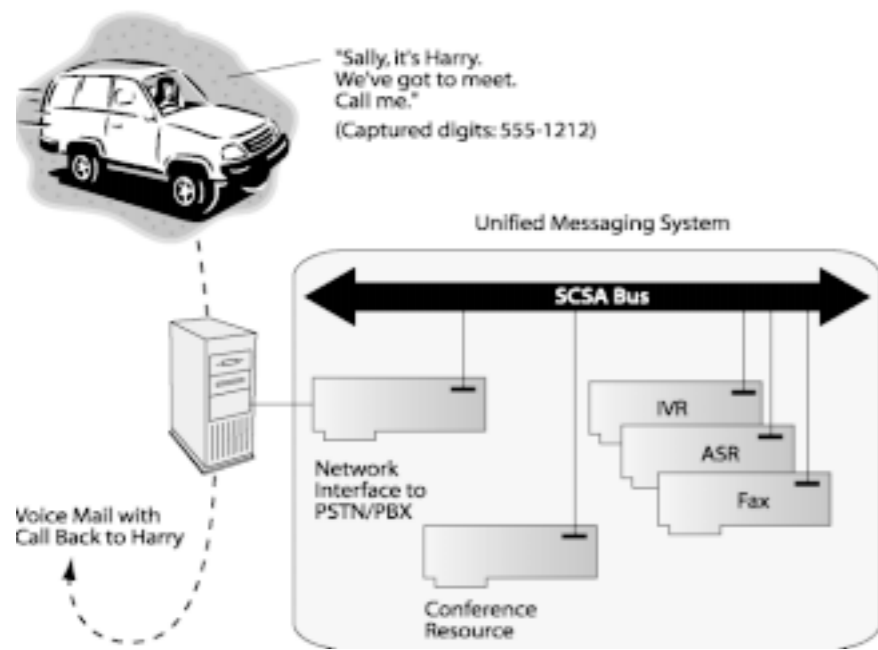
Fig. 7: Network Convergence



Dialogic has addressed the lack of interoperability between the PBX and the LAN in two innovative ways.



Fig. 8: Voice Mail with Call Back



Call-back voice mail capabilities make it easier to respond to calls quickly.

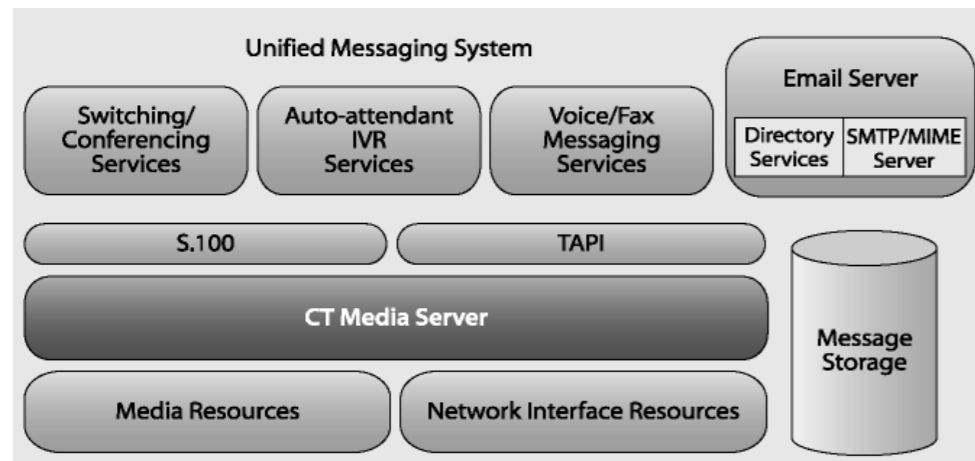
systems to take full advantage of the telecom and voice network. Digital and analog network interfaces, station set interfaces, conferencing boards and products for Internet telephony provide the necessary connectivity to enable network convergence. Voice, fax, ASR and various speech processing technology, give unified messaging solution developers the neces-

sary components to ensure their applications contain a rich set of end-user features and benefits.

PBX Integration Expertise

Most enterprise networks rely on legacy PBX platforms to connect to the public network. Therefore, in most cases it is still a challenge to design services to run

Fig. 9: MultiMedia CT Server



adjunct to these mainly proprietary switching platforms.

Dialogic products are built on many years of PBX integration expertise. Why is this level of experience important? Because for a unified messaging system to truly consolidate all types of messaging needs, the telephone and data networks must be tightly integrated. Dialogic integration products and expertise enable developers to build applications that truly take advantage of these two networks.

Humans love to talk. And while voice communication over data networks is gaining wider acceptance, the PBX still remains a universal element in enterprise telecom networks. In fact, research shows that demand for PBXs is actually increasing. The U.S. domestic market alone saw close to \$8 billion worth of PBXs sold in 1998.

PBX manufacturers have finally begun opening up their systems, one of the last bastions of proprietary technology in corporate networks. Dialogic has taken advantage of this move towards open systems by promoting and building open, standards-based components that interface with PBX switches. Dialogic has also developed an open architecture to implement all the functions of traditional PBX platforms, along with open interfaces to the rest of enterprise LAN infrastructure. The result is a true convergence of circuit and packet switching networks.

Consider this example. You're in your car checking your voice messages. You find a friend has left you an anxious message to call as soon possible. Do you pull over to jot down the number, exit the messaging system, and dial? With a typical PBX and-embedded voice mail system, you probably would.

The scenario would be different if your messaging solution included Dialogic PBX integration and network interface products with call-back capabilities. When your friend called, the system would have prompted your friend to enter his phone

number via touchtone dialing. So when you heard the frantic message, you would be able to tell the system to recall those digits and dial out. What if you needed a second opinion while you were talking to your friend? You could use the Dialogic conferencing product to conference in a third party. You would finish your conversation, then press the flash hook to get back into your message system—right where you left off.

Building a MultiMedia CT Server

Dialogic switch integration products and expertise are not limited to systems that reside adjunct to a semi-open PBX platform. A complete suite of hardware and software resources allow CT developers to build a business communication platform (BCP). A BCP built with open CT components and industry-standard software can provide much more than the switching functions common to propri-

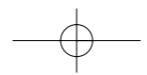
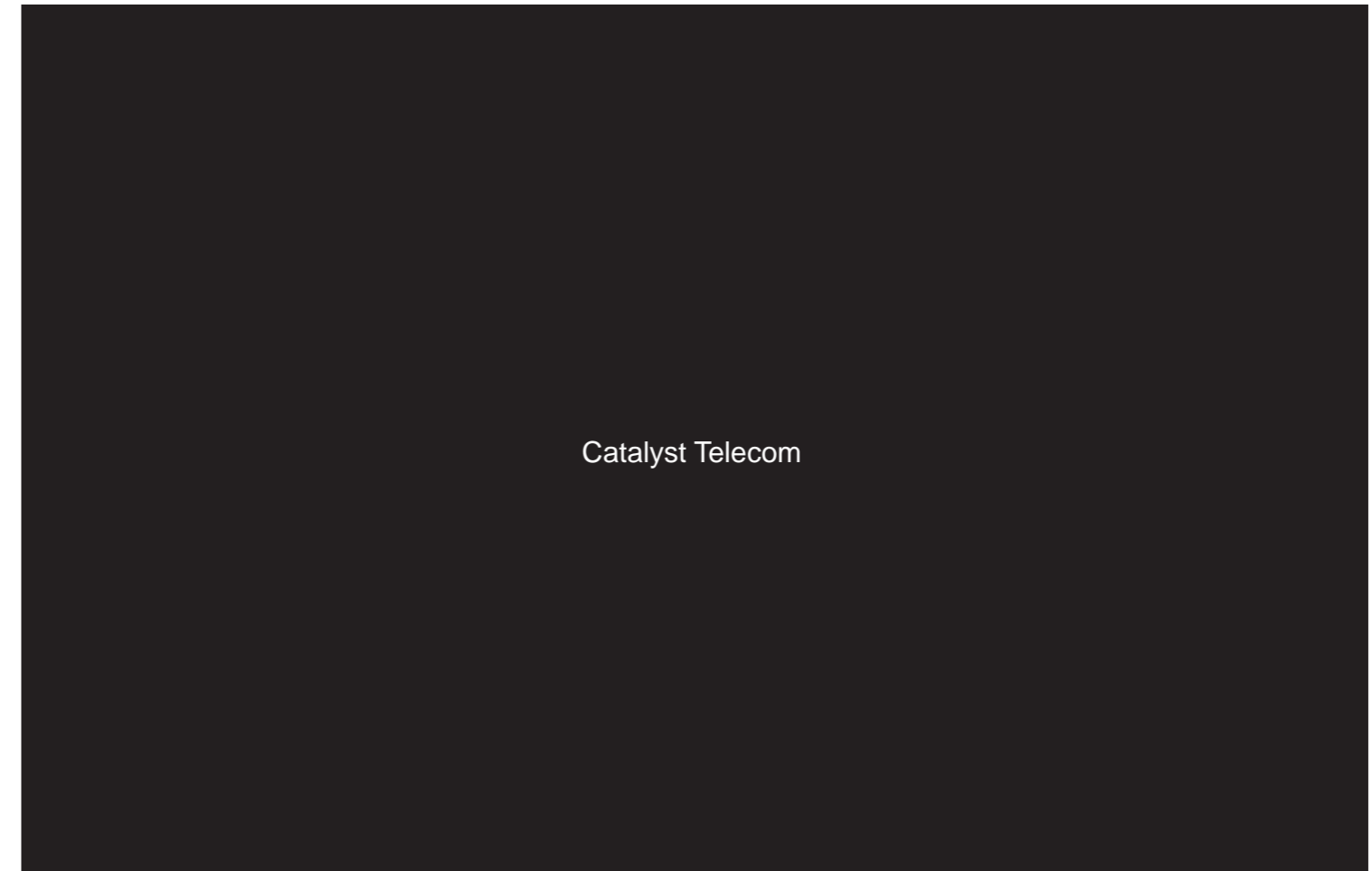
Taming the Communication Chaos

The Dialogic M3 initiative is delivering the components and technologies to build true universal messaging systems that can tame chaos that goes along with today's complex communications technologies. To find out more, call 1-800-755-4444 or visit the Dialogic Web site at <http://www.dialogic.com>. **INSIDER**

etary PBX systems, and can extend to include MultiMedia Messaging functionality.

The Dialogic CT Media products gives developers an API and runtime engine for developing and running applications that comply to ECTF S.100 standards. Dialogic has also extended the CT Media API to run applications written for Microsoft TAPI. The CT Media server also provides an ECTF-sanctioned S.300 service provider interface, allowing resource vendors to plug their S.300-compliant resources into the server.

By doing so, Dialogic has created a paradigm where application vendors don't have to decipher the intricacies of the various network protocols or the idiosyncrasies of various voice, fax, TTS, or ASR technologies. Instead, developers can focus on creating a rich set of services that truly take advantage of the best the data and telephony networks have to offer.



BoardWatch Looks Ahead: UNIX, Windows 2000, and Embedded NT

JASON BALLIS, DIALOGIC, WINDOWS MARKETING MANAGER
ART HERZOG, DIALOGIC, UNIX MARKETING MANAGER

System management is one of today's hottest topics. Why the sizzle?

Because CT solutions are quickly becoming indispensable in organizations of all types and sizes—expanding from small-scale PC-based solutions into the enterprise and even into massive and powerful telco solutions, where system availability and integrated management are crucial.

Dialogic has already taken a giant step in system management by introducing BoardWatch™ 2.0 for Windows NT, the industry's only SNMP-based remote management software for standards-based CT components. With upcoming products, we will continue developing system management technologies to meet the needs of the new century.

Proven Versatility

Supporting more than 70 Dialogic voice, fax, network, and station set interface products, BoardWatch can monitor activity on T-1, E-1, and ISDN lines. Since it's based on the industry-standard SNMP protocol, BoardWatch makes it easy to build solutions that remotely monitor and manage heterogeneous networks using popular SNMP-based management applications like HP OpenView and Compaq Insight Manager.

Dialogic collaborated with 14 partners to demonstrate this versatility at CT Expo in Los Angeles last March, using a massive link-up of diverse CT applications, hardware, and management tools. Partners participating in the demo included APEX Voice

Communications; Arial Systems Corporation; Artisoft; ATIO Corporation; Copia Internationa; EASE CT Solutions; Intelliswitch; Envoy (US) Limited; J.B. Communications Co., Ltd.; LTDOpalis Software; Maxxar; MediaSoft Telecom; Parity Software; and Prima.

The demonstration was an unqualified success, letting booth visitors experience the power and ease of monitoring a live, heterogeneous network using BoardWatch, HP OpenView, and Compaq Insight Manager. Moreover, the fact that Dialogic and our partners were able to assemble this large and complex demonstration with only a few hours of set-up time confirms the enormous power of BoardWatch and its standards-based implementation.

Focus on Standards

Even with BoardWatch's demonstrated success, there's still much to be done to stay ahead of today's fast-changing CT markets and technologies. Dialogic has begun to solidify our comprehensive operation, administration, and maintenance (OA&M) strategy. Our goal is to balance the popularity and momentum of BoardWatch with a comprehensive set of tools that keep up with developing industry standards.

For example, the Enterprise Computer Telephony Forum (ECTF) is growing in influence, partly because of its acceptance by Microsoft. By quickly adopting the ECTF's M.100, M.300, and M.500 protocols, the industry is setting the stage for a common

management framework.

The telecom and data industries are also seeing a rapid convergence in media formats. Now that these two industries—born more than a century apart—and their underlying technologies and markets are coming together, the whole topic of a common management framework is beginning to take center stage.

In a very real way, the topic of convergence applies not only to media, but to the whole issue of administration and management. The byproduct of this monumental industry trend is a heightened need to adopt standards and build interchangeable systems components, making it easier to deploy these exciting new services and reducing costs.

Building for the Future

At Dialogic our goal has always been to ensure that our customers have the leading-edge technology they need to stay in front of their competitors. That's why we're constantly focused on the future. For system management, this means providing other tools as universal and fully-featured as BoardWatch and making BoardWatch even more flexible and powerful for users. Today, a good example of this strategy is BoardWatch integration with the Web Based Enterprise Management (WBEM) version of Compaq Insight Manager (CIM). Tomorrow, it will mean extending BoardWatch to other supported Dialogic operating systems such as UNIX, Windows 2000, and Windows NT Embedded. [INSIDER](#)



Dialogic Software Releases Blast Into the Future

JASON BALLIS, DIALOGIC, WINDOWS MARKETING MANAGER
ART HERZOG, DIALOGIC, UNIX MARKETING MANAGER

It's been quite a ride. Over the last year, Dialogic has launched an unprecedented number of system software releases. Our powerful new features and ever-broader platform support have helped Dialogic chart new territory in the breadth of operating systems we support and the depth of operating system features we exploit—keeping us ahead of the rest of the industry.

From low-density analog to high-density IP telephony, from basic development to advanced SNMP management, from NT to UNIX, Dialogic has given customers the power and flexibility they need build superior CT solutions.

But with all our accomplishments over the past 12 months, Dialogic still has more in the works—and much more to look forward to over the coming months.

UNIX Takes Off

On the UNIX front, Dialogic has launched a number of powerful "Continuum" releases in the last year to meet our customers' changing needs. A "Continuum" release ensures that all Dialogic products and features are tightly integrated and tested for a given operating system platform.

In March Dialogic began shipping UNIX Continuum Release 2, targeted for both SCO OpenServer 5.x and SCO UnixWare 2.x systems. It provides a common release base for customers to choose the underlying operating system that best suits their needs.

Dialogic has now begun shipping UNIX Continuum Release 3. Building on the solid base of Release 2, this release is targeted at both SCO UnixWare 7 on Intel and Sun Solaris on UltraSPARC platforms. It introduced support for the Dialogic DM3 platform with the IPLink board. With this product support, the whole world of Internet telephony has opened up to

Dialogic UNIX customers.

Dialogic has also started shipping System Release 4.22SC for Solaris on Intel platforms. This release, which carries the pre-Continuum "System Release" name, offers the same level of interoperability and regression testing.

In the coming year, Dialogic will introduce additional functionality as part of additional Continuum releases for UnixWare 7 on Intel and Solaris on both Intel and UltraSPARC platforms.

Dialogic has also announced support for the Linux platform. The Dialogic Linux product supports a full breadth of products on Linux.

NT Flies High

We haven't put all our support into UNIX. Powerful new releases have also changed the NT landscape.

In April, Dialogic began shipping DNA Release 3.1 for Intel platforms. DNA 3.1 adds BoardWatch 2.0, the industry's only SNMP-based remote management software for standards-based CT components.

In September, Dialogic began shipping DNA Release 3.2 for Intel platforms. This release adds support for the Dialogic DM3 mediastream architecture, the hardware foundation for the most powerful and scalable standards-based, carrier-grade platforms in the industry—with support for a broad range of multimedia types including voice, fax, speech recognition, and text-to-speech.

Looking Forward

Over the coming months Dialogic will continue to zoom ahead, delivering ever-improved development and runtime environments. Whether we're talking about new operating system platforms (Linux, Windows 2000, and Embedded NT), improved board densities and features, broader management

facilities, or advanced CT server platforms—Dialogic will be there for you in 2000.

For UNIX, Continuum Release 4 is expected to be generally available in the first quarter of 2000, offering substantial improvements to Dialogic UNIX support. Release 4 will allow the UNIX community to leverage the scalability and flexibility of the DM3 architecture by providing the R4 programming API implementation on the DM3 architecture. By including SNMP/BoardWatch support in the release, Dialogic will let UNIX customers leverage the same award-winning management capabilities available in the NT version of BoardWatch. UNIX Continuum Release 4 is scheduled to support UnixWare 7 and Solaris on UltraSPARC.

For NT, we will deliver a special release called DNA 3.2 for Windows 2000 for our customers who wish to qualify their solutions in the Windows 2000 environment. This software will provide backward compatibility with Microsoft's new operating system for all Dialogic products and features contained in DNA 3.2.

DNA Release 3.3 is expected to be made generally available in the first quarter of 2000. This release will include the features you need to become qualified to use the Microsoft "Certified for Microsoft Windows" logo.

Also, Dialogic is working closely with Microsoft to capitalize on their upcoming Windows NT Embedded technology. Innovations like "headless" remote administration and the ability to selectively load only the portions of the NT operating system you need will soon become a reality for your CT solutions. These landmark features will be made available in a DNA release later in 2000.

In short, 1999 has seen Dialogic software releases soaring. But with the new releases on the horizon, 2000 will send us soaring into new worlds. **INSIDER**



SAN DIEGO 1999

E-Commerce Gets a Boost from Interactive Intelligence's EIC System

CASE STUDY

Alliance

Can a large call center for direct response marketing company find happiness trading its traditional CT systems for a single Windows NT-based communication server? You bet it can increasing sales in the bargain.

AB&C Group of Forrester, West Virginia, is a direct response marketing company that specializes in catalog, association, and lead and response processing. Since e-commerce is the lifeblood of its business, AB&C was looking for a new communications solution with more flexibility than a conventional system, plus advanced telephony features. AB&C also wanted a system that would make it easier to create and modify call flow.

The company looked at solutions from Nortel and other PC-PBX vendors, but chose Enterprise Interaction Center (EIC) from Dialogic partner Interactive Intelligence of Indianapolis, Indiana (<http://www.inter-intelli.com>). EIC is a Java-based communications system for LANs and intranets that replaces PBXs, automatic call

distributors (ACDs), voice response units (VRUs), voice mail systems, fax servers, and computer-telephone integration (CTI) boxes with a single Windows NT server, turning every PC into graphical phone with screen pops. Standards-based EIC can support Dialogic high-density voice boards; digital E-1, T-1 and ISDN interfaces; direct inward dialing (DID) fax boards; speech recognition and text-to-speech products; and PBX integration or switching/conferencing ATM and multi-node products.

AB&C was attracted to EIC because of its "telephone integration features and robust functionality," according to Elaine P. Looney, AB&C's COO. About 50 agents are using the EIC system. (Since EIC can support between 200 and 300 agents on a single NT server, future expansion will be no problem.)

AB&C went live with its EIC system in late 1998. The company is using the system's PBX, IVR, ACD, fax services, and call recording plus reporting features. All are supported one server through various

task-specific interfaces, which include browser-based Java control panels.

EIC has given AB&C a much higher level of call center management control, plus powerful program handlers that give the call center management team much greater control than they had before and allowing them to easily modify call flow to suit their marketing programs. EIC's call monitoring features have also made it possible for AB&C to improve its quality assurance and promotional messages and take customer service surveys to reinforce its marketing promotions. The result has been an increase in sales.

Looney attributes the EIC system's success to its revolutionary unified architecture. AB&C believes that with EIC, it has found a comprehensive, cost-effective way to take advantage of advanced telephony features. AB&C has plans to keep expanding its EIC system, building a next-generation "relationship" call center where agents can multi-task calls with faxing, email, and the Web. [INSIDER](#)



Open To Opportunity Standards-based design broadens markets in CT

“Rockwell International, and in particular Rockwell Electronic Commerce Corporation, has the distinction of holding a unique place in the history of the call center industry. In 1973, Rockwell’s Switching Systems Division, then part of the Collins Radio Company, delivered the industry’s first Automatic Call Distributor (ACD), called the Galaxy ACD and carrying the serial number 001. The buyer was Continental Airlines and the system was the first to be used in a high-volume customer service and air travel reservation center.”

Paul Stockford,
“Rockwell Electronic Commerce Transcends Tradition,”
Cahners In-Stat Group, March 1999

Call center technology is not new. In fact, the first automatic call distributor (ACD) was installed for commercial use at Continental Airlines by Rockwell over 25 years ago. Continental remains a loyal Rockwell customer to this day.

What is new is the role of the automatic call distributor application in the open client/server environment. The migration of this powerful technology from closed proprietary systems to open platform architecture has created a vast opportunity.

Today, the advent of industry-wide, telephony standards at the API level, makes this technology widely accessible. The small to medium-sized business represents the lions share of the marketplace, and until recently, was unable to afford the sophisticated call flow and call management features contained in the higher-end systems. Tern Systems, a consultancy in Acton, Mass., predicts growth in the informal (small) call center market will outpace growth in the formal (large) call center market, accounting for slightly more than half of the entire \$2.3 billion call center market by the year 2000. These businesses will be served by value-adding systems integration specialists who now have an affordable solution offering.

Enabling Customer Contact

Whatever you call it: Customer Relationship Management (CRM), Enterprise Communications Servers, Enterprise

Messaging Servers or Customer Contact Management systems, the applications which enable customers to make the connection with a business using a variety of media are emerging more rapidly than ever. These previously disparate applications, when used together, provide businesses powerful solutions for increasing customer satisfaction and retention.

Contact management applications can improve customer service quality for businesses by helping to:

- Manage and staff for surges in call volumes
- Route customers to the best suited agent
- Facilitate customer interaction by providing agents with key customer information
- Allowing the desired means of contact for customers

But proprietary telecommunications systems and isolated voice mail, fax, voice response units have traditionally worked independently, lacking the ability to communicate and share system resources.

Duplication of hardware, high maintenance requirements and higher costs have been the result.

The Essential Change

Enter Dialogic. Using the Enterprise Computer Telephony Forum’s (ECTF) specification (S.100), CT Media provided a middle layer for applications, enabling various applications to

share technology resources of a single server.

This brave new world of standards-based applications in an open, client/server environment cuts costs by eliminating hardware duplication and the need for complex integration schemes.

In addition, system integrators have a tremendous opportunity to build and implement applications that inter-operate with one another. They can more easily create a customer contact solution that fits the needs of their client’s business.

Leading by Example

Using an open contact management application, customer contact centers become a strategic asset for business improving profitably and efficiency.

Garnering the attention of numerous industry awards for its innovative standards-based design and open architecture, Rockwell Transcend an affordable, fully-featured, Windows NT - based contact management platform delivering sophisti-

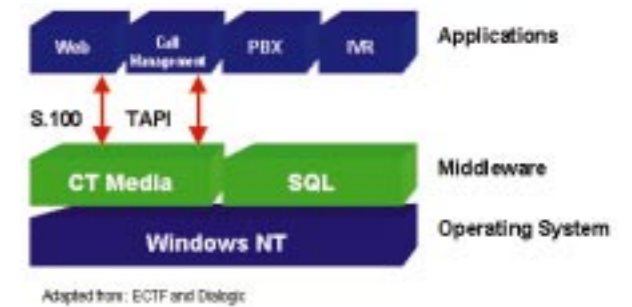
cated power and unmatched flexibility to customer contact centers with 8 to 80 agent positions.

The flexibility that sets this call routing technology apart is the result of a modular architecture, designed to enable development of one module to progress without impact on other modules. Each module has its specific role – but combine to act as a unit.

The Rockwell Transcend applications “sits” atop Dialogic’s CT Media middleware. CT Media is based on the Enterprise Computer Telephony Forum’s (ECTF) specification (S.100). By using common specifications such as this one, a truly open client-server architecture is achieved, providing the greatest possible value proposition to the end-user.

“Transcend is based on Rockwell’s acclaimed Spectrum™ call center software. Previously, this solution was only available to large call center customers. The Transcend/NT solution makes very robust functionality available and affordable to smaller and mid-sized call centers.” said Bill Tatnall, Vice President, Indirect Channels and Strategic Business Development.

Leveraging the S.100 interoperability specification, businesses can make use of robust call management platforms ushering in a new era of open systems applications. These specifications allow for the rapid development and deployment



of applications, providing a growing opportunity for systems integration services. The Rockwell Transcend customer contact management application is a first of its kind, but one of a growing number of S.100-based applications. (See www.dialogic.com for more information.)

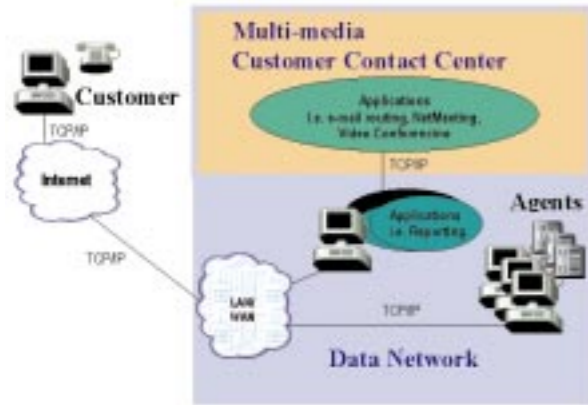
Using middleware speeds future developments

“We believe the system design was designed with cutting-edge technology that demonstrates Rockwell’s clear understanding of the direction telecommunications must take in the years to come.”

Paul Stockford,
“Rockwell Electronic Commerce Transcends Tradition,”
Cahners In-Stat Group,
March 1999



Future Network Topology



An Oracle(database provides the open ODBC / SQL compliant data storage component, providing easy access and data retrieval for the more than 1600 data elements captured by the application. The Crystal(reporting engine integrates data into a comprehensive set of provided reporting templates, and exports these data elements in a number of widely used format, such as HTML, tab delimited text, Lotus and Microsoft Excel, to name a few.

By detaching the application from the proprietary hardware and software, customers receive the following benefits:

- Client-server architecture will allow a flexible application environment in which the application components can reside on the server or desktop as necessary and utilize the enterprise resources available on the LAN.
- Customers are able to take advantage of third-party (Dialogic(hardware and are not limited by protocol differences.
- Supporting an Enterprise Computer-Telephony Forum's specifications and mid-

by eliminating hardware-specific application design and allowing other applications and hardware developers easier access to the system. This enables a multi-vendor application solution and provides greater value for value-added resellers as well as their customers.

In addition to making use of the ECTF S.100 specification employed by Dialogic's CT Media the Rockwell Transcend application was developed with standard programming languages and protocols which allow for easy integration with other applications.

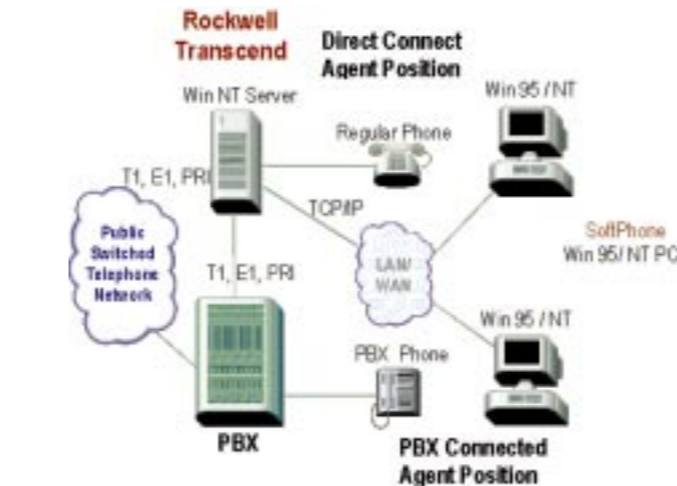
dleware model, both the ACD engine and other third-party applications can be added to the system

- This open communications server architecture provides greater investment protection for the end user. The application that is flexible enough to be configured and adapted to their changing business requirements.

The Future – Open Systems Requirement

Change is built into the very fiber of things - as voice and now data and voice converge on higher quality, higher capacity networks. Advanced in technology enhances bandwidth capacity exponentially - and it's a good thing too, as worldwide bandwidth needs are expected by some industry experts to increase 101 times in the next 5 years.

Internal network composition will get a dramatic face lift as data makes up the lions share of internal network traffic. The benefits of this single new internal network structure based on Internet Protocol (IP) are many, as it eliminates the need for proprietary devices. Today with the investments in traditional PBXs and ACDs being siz-



able, customers can find themselves locked in and limited to the feature set provided by a single vendor.

These changes, although immanent, require a period of transition - which makes open system architecture a requirement.

We are witnessing the paradigm shift and these new standards-based products are the clear migration path to the futuristic model of IP networks. Enabled by Dialogic and CT Media, we now have high-end ACD technology on NT based systems able to inter-operate with the latest customer contact technology has to offer. Open architecture is a new phenomenon breaking the traditional call center technology mold.

The future network is exciting, as it is applications driven. The benefits include lower operating costs and increased service offerings. And end users have the ability to choose to implement best-in-class technologies almost feature by feature, instead of making large investments in proprietary hardware. No worries about how systems will inter-operate.

Beautifully open.

For more information regarding Rockwell Transcend or the RPM Program for resellers and distributors call (630) 227- 7957 or email reseller@ec.rockwell.com

Rockwell Electronic Commerce

Rockwell Electronic Commerce (www.ec.rockwell.com) is a leading supplier of mission-critical call center systems and personalized commerce applications. Rockwell designs, manufactures and services a suite of integrated call processing and workflow management technologies, including automatic call distributors, computer telephony integration software, Internet commerce applications, information collection, reporting and management systems, and call center systems integration and consulting services. For additional information, contact Rockwell Electronic Commerce Division, 300 Bauman Court, Wood Dale, IL 60191, or call 800-416-8199. [INSIDER](#)

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Open Architecture:

Rockwell Transcend is "open", meaning that it can run on a standard operating system platform, and no longer is limited by a proprietary hardware and operating system.

This technology was designed to integrate with other best-in-class, third-party applications to produce the best contact management solution an enterprise can buy. Running on a standard Windows NT plat-

form, its unique, truly open architecture provides your enterprise overall investment protection through unparalleled flexibility, feature set expandability, and reduced implementation costs. Using Dialogic hardware, CT-Media middleware and CT-Connect interface, this application can integrate with third-party S.100-based applications, such as best-in-class predictive dialers and IVRs.

Q. What Does Open Architecture Mean to You?

A. Investment Protection

Flexibility

- Departmental contact center management
- Distributed contact center environments
- Remote agent capabilities
- Integrated with other third-party applications on the same platform or the same network.

Expandable feature sets grow with your enterprise

- Integrate best-in-class, third-party applications, such as IVRs and predictive dialers, on the same platform. You are no longer limited to the feature set constraints of a single vendor.

Reduced costs

- Overall system implementation costs are reduced by virtue of the ability to work with your existing phone system and equipment.
- LAN agent technology* enables remote, anywhere, anytime agents provide staffing flexibility and potentially reduce turnover.

*A feature of the Rockwell Transcend application.



Motorola

Quality Logic

Converging Networks Demand Open, Flexible Enhanced Services

GREG BALTZER, DIALOGIC, VP OF PUBLIC NETWORK MARKETING

Today's converged world demands much more from enhanced services than yesterday's circuit-switched world. For instance, there are numerous voice and data media streams to deal with. Plus, it takes a variety of packet and circuit-switched transport interfaces to provide full-featured interactive applications. That is why next-generation enhanced services demand standards-based, flexible solutions.

Boundless Opportunity...And How to Grab It

Consumers continue to demand access to increasingly sophisticated services from any device they use—mobile phone, desktop phone, desktop PC, or remotely-accessible network connection. So far, user demand for anywhere/anytime access has only created a new generation of network technology that is largely independent of the existing networks. Enhanced services are becoming one of the primary points of convergence, with most of the demand for interoperability between networks being left to the enhanced services platforms.

As the telephone and data networks converge, consumers want new services like Internet telephony and Internet call waiting to save time and money. With Internet call waiting, users can browse the Web and talk on the phone over a single analog line. Internet protocol (IP) telephony also lets long-distance carriers generate more revenue by completing more calls. ISPs can generate more revenue by offering Internet services while customers are making local or long-distance calls. Call centers can mix voice and data on the same link, allowing Internet users to talk to call center agents while they surf the Web. Just how great is the demand for these solutions? Industry watchers expect IP telephony revenue to grow sixteen-fold in the next five years.

Speech technologies are also hot. The demand is growing for systems that can recognize voice using automatic speech recognition (ASR) or read information from a file using text-to-speech (TTS). From simple DTMF (telephone keypad) replacement to sophisticated personal assistants and telephony email-reading applications, speech technologies are taking off in the CT marketplace.

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These are just a few examples. The market is likely to explode for all kinds of enhanced services that are easy to use, easy to access, and ready to make customers more competitive as they enter the next century.

Making It in the Converged World

One of the most important market segments driving network convergence is the small business market for communications. Unified messaging is a primary need. And small businesses are demanding the same sophisticated communications services larger enterprises enjoy — even with a limited budget for capital equipment and dedicated IT staff.

The technology demands of a simple mailbox in a converged network are typical of many enhanced services in the converged world. Voice messages, electronic messages, fax, and other data stored in mailboxes must be available with no restrictions. Streaming voice files from a disk over a high-speed IP connection during one session may allow the user to hear the message with no compression. A highly-compressed version of the same message must be available when the same applications is accessed by a low-speed data circuit. In this case, the need for immediate playback and real-time access outweighs the loss of fidelity in the voice message.

For developers, it is complex technology that allows a single voice file stored in an industry-common format to be played to any one of several potential devices over any network connection. For users, the technology doesn't matter. What does matter is having instant, easy access to their messages.

The idea that the networks will somehow understand and solve all the translation problems is still a long way from reality. Most networks are made up of several independent networks bridged by gateways. Enhanced services platforms are gateways providing multiple networks with access to media services. Viewed this way, the market for enhanced services continues to grow at an incredible rate. Unified messaging services become an entry point to a wide range of network or information services.

Getting Started

The key to building enhanced services that will let you take advantage of today's incredible market opportunities is using open components. Dialogic supplies a complete family of open components for building today's sophisticated enhanced services. All are compatible with key industry standards and flexible enough to let you pack your service with everything the market demands. Dialogic delivers the industry's highest densities, a rich development environment to get you to market quickly, and worldwide approvals. The result? You have everything you need to develop an open, flexible enhanced service solution that satisfies both today and tomorrow's needs.

Ready to get started? You can see today's newest technologies for building enhanced services platforms in the TechSummit Resource Center and learn even more by taking the Public Network track. [INSIDER](#)



Ibus

Crystal

Dialogic Professional Services Offer Something for Everyone

Bringing a CT product to market? Dialogic can help you shorten your development cycle and deliver a more robust application with our portfolio of consulting, training, and technical support services.

Dialogic Professional Services provide expert advice and support during every phase of your product's life cycle, from design and development through deployment and post-production maintenance. Whether you're a CT developer, integrator, or reseller, this spectrum of service options can help you get the most out of all your Dialogic products.

Consulting Services: Jump Start your Application

Dialogic offers both innovative JumpStart Services and customized value-added Application Consulting and Systems Engineering Design Services to meet your specific product development and integration needs.

JumpStart Services are accelerated consulting programs that help your development team understand Dialogic technology and incorporate it into your applications, slashing your time to market. These service bundles include fast-paced Dialogic product and technology

training, installation and configuration guidelines, and customized design consultation on integrating Dialogic technology into your product design. All are delivered within a week by senior engineers with years of hands-on telecommunications experience and in-depth knowledge of Dialogic hardware, software, and system performance. The goal of each JumpStart service is to leave behind a framework of your intended application. JumpStart Services are currently available for CT Media, CT Connect, CT812, DM3 QuadSpan, DM3 IPLink, and Dialogic SS7 Solutions.

Customized Application Consulting Services can help during the design and development phases of your application or system. You can arrange a quick design consultation or a long-term assignment that includes a project manager who works with you to define requirements, tasks, responsibilities, and schedules and manages your project to completion.

Have a unique system environment? You may need software design assistance focused on integrating off-the-shelf technology with non-standard system platforms. Dialogic Systems Engineering Design Services include software porting, customer network interfacing and switching software designs, and custom software development. If you're integrating telephony, networking, or distributed signal computing capabilities into an application, Dialogic experts can customize a systems engineering design assignment to help you get to market faster.

Technical Support Services: Choose Your Level

Dialogic lets you choose exactly the right level of technical support to meet your needs. Multi-tiered annual technical support plans provide different levels of responsiveness, technical experience, and

account management to suit your requirements. For self-service technical support available around the world and around the clock visit Dialogic FirstCall InfoServer on the Web. If your operation is international, Dialogic also offers a multinational support option.

Support plans are available for Dialogic hardware products and supporting driver and API software, Dialogic CT Media

- Graduated levels of engineering expertise and technical account management (for example, support activity reports, site visits, online development profile)
- Degrees of priority access to optional features like on-site technical support, after-hours support, and a testbed of your system in a Dialogic technical support laboratory

"We selected the top-tier CT Media service plan...and the results have been outstanding. Working with the Dialogic Professional Services team, we have been able to reach prompt resolution of any technical issues that arise. The relationship has enabled us to address critical issues quickly, which is essential to keeping our customers satisfied."

PAUL FISCHER, ROCKWELL ELECTRONIC COMMERCE DIVISION

server software, and Dialogic CT Connect server software and components. All support plans feature:

- Support for generally-available Dialogic products
- Access to a specific technical support team via phone, fax, or email
- Support hours from 8 a.m. to 8 p.m. Eastern Time, Monday through Friday (except holidays)
- Committed response times to your initial request for support on a particular issue

Tiered technical support plans are distinguished by:

- Response times from one hour to 24 hours

The Direct Support Plan is a good choice if you're looking for more than Web-based support, want assistance mostly with configuration and installation, and don't expect to need after-hours support. Direct Support lets your developers consult with Dialogic technical support engineers experienced with all Dialogic products and technologies. You get dedicated phone and fax numbers, an email address, plus voice messaging if no engineers are available. Dialogic provides a unique call tracking number for every technical issue and responds within four business hours to any new issue you report via phone or fax, or within 24 business hours to a new issue you report via email.

The Premium Support Plan is a good



choice if you have sophisticated application integration needs or if you're working with advanced speech technologies, international digital protocol support, or PBX integration. Premium Support gives you faster resolution of more complex issues. Your developers have access to a more experienced support team of applications engineers. Response is within two business hours to phone and fax requests. A call coordinator will take your call and initiate a call ticket if an engineer is not available. Dialogic will keep your online profile with information about your development platform, configuration, and equipment. All Premium Support engineers can access this profile using the Dialogic Call Tracking database to quickly resolve technical issues. You can also add options like a testbed in the Dialogic Technical Support lab and after-hours or on-site technical support.

The top-of-the-line Elite Support Plan is

the right option if you have very sophisticated applications and need one-hour response, access to the most experienced technical support engineers, priority access to on-site and/or after-hours support during mission-critical times, and a close relationship with your support engineers. Elite Support gives you access to the most senior technical support engineers at Dialogic, providing added assurance that even your most complex technical issues will be quickly resolved. You enjoy preferential treatment every step of the way, including response within one business hour to your first phone or fax request for support on a particular issue, or within two business hours to issues you report by email. You'll have an Elite Support engineer or technical support manager assigned to your account to oversee all technical support activity and to ensure that issues are quickly resolved. You'll also get quarterly reports summarizing your company's

technical support activity. Twice a year, at your request, a technical support engineer or field applications engineer will visit your site to discuss technical support activity. Options to the Elite Support Plan include a testbed of your system configuration in a Dialogic technical support laboratory and priority access to after-hours and on-site technical support.

If you are a global company with developers in several countries, Dialogic offers a multi-national support option that provides technical assistance through your choice of Dialogic Technical Support Centers in the U.S., Europe, Singapore, and Japan. At the touch of a button, any Dialogic support engineer around the globe can access your customized profile describing your system in detail.

Dialogic also provides 24 x 7 support over the Web for customers worldwide with FirstCall InfoServer™ (<http://support.dialogic.com>). The information on

FirstCall InfoServer, updated daily, includes Quick Install installation guides, sample application code, downloadable software releases, release notes, resolved Problem Tracking Reports (PTRs) and point fixes, complete application notes, technical notes with recommendations, information exchange forums, and more. You can also use FirstCall InfoServer to request technical support assistance and receive a response via email.

To find out which level of support is best for you, contact your Dialogic sales representative or visit <http://www.dialogic.com/support/4381web.htm> on the Web.

CT Educational Services: Learn from the Experts

Dialogic training programs are designed for VARs, systems integrators, application architects, centralized or field support professionals, and application programmers. Each program combines classroom lecture

with supporting hands-on experience to emphasize the practical implementation of targeted technologies. During supervised lab exercises, students apply what they learn under expert guidance.

The instructors are seasoned professionals who offer experience with Dialogic products, operating platforms, and real-world scenarios. The well-organized courses give you the skills and knowledge to reduce your development time and get your products to market faster. For detailed course descriptions and online registration, visit <http://www.dialogic.com/support/cti-edu/index.htm> on the Web.

Dialogic also offers a unique CT Professional Certification program that gives CT VARs the credibility to stay a step ahead in today's competitive marketplace. Passing the exam and displaying the CT Professional mark shows you have the knowledge and skills to succeed in the CT market. It may also be your first step toward becoming a

Dialogic Platinum Reseller in the Dialogic Value-Added Reseller Partner Program. To learn more about the CT Professional Certification program, visit <http://www.dialogic.com/whatsnew/5024web.htm> on the Web.

Something for Everyone

No matter what you need to bring your Dialogic-based solution to market, Dialogic Professional Services can help. Dialogic will customize a program for you, including just the consulting, technical support, and training services your project demands. The result will be shorter development time and a more robust application. For the latest information on Dialogic Professional Services, visit <http://www.dialogic.com/support/4419web.htm> on the Web.

(1) These plans, offered through the Dialogic Technical Support Center in the United States, are currently available to customers in the Americas. Customers in other countries receive support through Dialogic Technical Support Centers located in Europe, Singapore, and Japan. **INSIDER**

A Head Start on Success

Dialogic Professional Services are especially helpful for customers rushing to market with a CT product that incorporates sophisticated new technologies for example, CT Media their developers have never used before. That was the situation for Arial Systems Corporation, as it began work on the ArialVoice browser module for the company's flagship ArialView product, a turnkey personnel/skills directory.

Arial was building the ArialVoice browser interface to an impossibly tight deadline using a variety of hardware and software, including CT Media, which its developers were encountering for the first time. The Dialogic CT Media JumpStart Service gave Arial a software framework on which to build the ArialView voice user interface (VUI). Instead of a formal training program, Dialogic delivered an on-site consulting engagement fine-tuned to Arial's needs. Arial was able to bring its product to market on time.

"Dialogic, specifically the Professional Services team, did an outstanding job of managing our requirements, working with us to produce a solid, elegant design, and communicating progress on the

ArialVoice browser project," explained Jim Alland, Arial's CEO.

Dialogic Professional Services also played a key role for Rockwell Electronic Commerce Division, which was developing a next-generation call center solution targeted at the low-end and mid-range customer contact market. The company's development involved migrating from a proprietary solution to a standard PC platform using a new architecture and development model, open hardware components, and CT Media. Since it was just switching over to standards-based components, Rockwell had little or no experience with Dialogic as it entered into this extremely high-risk project that was crucial to the future of its business.

For a fixed annual fee, Dialogic met the customer's needs with a customized CT Media support plan, including options like access to CT Media development engineers, 24 x 7 standby support, and a personalized Escalation Manager who was a CT Media specialist. By being able to secure this premium-level technical support when they purchased CT Media, the customer successfully mitigated its risk, controlled its costs, and got all the support services it needed to deliver its product on time.



As a Master Distributor, Ingram Micro leads the industry in the convergence of the computer and telecommunications markets through the wholesale distribution of computer telephony integration (CTI) technology. Through our CTI Solutions Group resellers can obtain everything they need to be successful in the CTI market, including expertise, products, education, dedicated sales, specialized finance programs, and a dedicated tech-support help desk.

Call 1-800-456-8000 and ask to speak to a CTI sales account manager today!

Dialogic Gatekeeper Opens the Door to IP Telephony

Business applications need ways to migrate from traditional telephony environments such as PBXs to new environments such as the International Telecommunications Union (ITU) H.323 standard commonly used with IP telephony. Many of these new environments do not accommodate the level of call control required by typical computer-telephone integrated (CTI) applications. For example, the H.323 standards do not explain how an enterprise-level business application can participate in routing a call in an H.323-based call center.

Responding to the needs of our many CT Connect™ application partners, Dialogic intends to deliver third-party call control capability for these new environments. For example, Dialogic has demonstrated a prototype of a CTI-enabled H.323 gatekeeper at recent IP telephony events. The complete product is expected in early 2000. This new CTI-enabled gatekeeper will open the door for today's PBX-based CTI applications to step into the new world of IP telephony.

Redefining the Environment

Dialogic is experienced at linking the call control functions of telephone environments to external business applications. Traditionally, this has meant using CTI links to customer premise PBXs and automatic call distributors (ACDs).

But with new environments like H.323 packet telephony, the need is growing for the same kind of third-party call control capabilities. So far, the standards work in H.323 has focused primarily on the endpoints and the interactions between entities inside the H.323 domain. This first-party call control is not sufficient for typical business applications.

The center of enhanced call processing in an H.323 IP telephony environment is the architectural element called the gatekeeper. Current industry thinking is that all enhanced call processing features should be implemented as gatekeeper-resident logic. But this approach will inevitably lead to expensive, complex, inflexible gatekeeper feature implementations. For one thing, the gatekeeper environment is not an easy one for feature developers to work in. Also, feature implementations from multiple developers cannot be easily combined into a single gatekeeper.

A New Approach

Dialogic is taking a different approach, providing a gatekeeper module that does not itself implement call processing features, but instead provides a CTI link to external applications that in turn implement the desired call processing features. Such an arrangement is able to support multiple external CTI applications so that feature applications from several developers can easily be combined in

a single gatekeeper environment. The result will be lower costs and more flexibility for IP telephony call processing.

The foundation for this new approach is already present in the design of the current Dialogic CTI server software, CT Connect. To demonstrate the concept of third-party call control for H.323 environments, Dialogic engineers have constructed a prototype CTI-enabled gatekeeper. Using this "thin" gatekeeper and an existing CT Connect call control application previously used with traditional PBX CTI links, Dialogic has created calls between unmodified commercial H.323 endpoint applications. This same arrangement has also been used to alert external applications to call state changes at the H.323 endpoints — for instance, to trigger an application screen-pop on an arriving call. Dialogic believes this type of third-party call control, consistent with established PBX CTI principles, is a key capability for H.323 calling environments. That is why Dialogic has taken steps to protect its techniques with patents. Dialogic is now looking for opportunities to apply this technology to commercial IP telephony networks and applications.

How it Works

To see what the new gatekeeper can do, consider a traditional telephony setup with a standard analog telephone connected to a

PBX. The PBX is connected to an H.323 gateway that converts the traditional telephone call to a packet telephony call. The gateway uses a Dialogic D/41 board for the traditional telephony interface, a Dialogic DM3 IPlink board for the packet telephony interface, and a simple gateway application that is part of the IPlink software development kit (SDK). The two boards are interconnected with a standard H.100 TDM bus. For the softphone endpoints, the system uses Microsoft NetMeeting.

As specified by the H.323 protocols, all endpoints in the domain, including the gateway, detect and register with the gatekeeper. All call signaling between those endpoints then flows through the gatekeeper as calls are set up, rerouted, and disconnected. The gatekeeper uses the appropriate CSTA messages to communicate all important call state changes to the external application environment.

External applications can also send requests to the gatekeeper to take actions on calls. The Dialogic CT Connect CTI gateway provides the communication path between all external applications and the gatekeeper, translating the CSTA messages used by the gatekeeper into the appropriate telephony API as used by each application.

Built within Microsoft Access, the application has a table of customer contacts and provides preview dialing and screen-pop functions. The application uses the CT Connect ActiveX control, which can be easily embedded into an Access form. (This application is the same one Dialogic has used to demonstrate CT Connect capabilities in a PBX environment.)

If the user places a call from a traditional telephone or an H.323 softphone to another H.323 softphone, the Access application associated with the destination softphone receives call progress events via a communication path consisting of the gatekeeper, CT Connect, and the CT Connect ActiveX control embedded in the application. The application then executes a screen-pop based on the calling party's telephone number.

The user of one of the softphones can also select a customer contact record and press the application's dial button. This causes a dialing command to be passed from the ActiveX control to CT Connect and then to the gatekeeper. The gatekeeper establishes one leg of the call back to the calling softphone, then a second leg of the call to the selected destination — either another softphone or a traditional telephone — via the gateway.

Opening the Door for IP Telephony

Third-party CTI capabilities are essential to commercial use of H.323 telephony, just as CTI concepts are now essential to the operation of any traditional telephony call center. Using Dialogic CT Connect in combination with H.323 and CSTA technology, calls in a packet telephony environment can be supervised by a CTI application just like calls in a traditional telephone environment—with no modifications to the application. This opens the door for the growing library of CTI applications now available for traditional telephone environments to be used in packet telephony environments. [INSIDER](#)

Comport



Enabling E-Services with Hewlett-Packard's Computer Telephony Platform

Computer Telephony (CT) solutions for service providers and enterprises are often developed by Equipment Providers, Value-Added Resellers (VAR), or Software Vendors who rely on Open Telecommunications components. These solutions leverage industry-standard hardware components, operating systems, and application development tools to enable quick and efficient deployment of new communication products and services. CT solutions need to run on a computer platform that meets the requirements of uptime performance and serviceability. Customers also need pre-sales consulting, in-house factory integration and testing capability, as well as the worldwide logistics and support services necessary to deliver complete solutions. Partnering with a full-service platform provider is the best way to meet customer requirements and broaden market reach.

The HP Open Systems CT Solution

With the HP CT Platform, Hewlett-Packard is able to help telecom partners to efficiently and profitably deploy CT solutions.

The HP Computer Telephony Platform solution includes:

- Leading-edge HP NetServer Platforms
- Industry-leader Open Telecommunications Components
- HP Factory Integration Services
- HP Distribution Services
- HP Support Services

Target Applications

HP Computer Telephony Platform addresses the needs of a broad range of CT applications such as intelligent services, call centers, IP telephony, or Intelligent Voice Recognition (IVR). It is particularly well suited for the deployment of service providers and enterprise appli-

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Leading-Edge HP NetServer Platforms and Programs Enable CT Solutions

HP NetServers deliver a wide range of *Windows NT solutions* that offer the high performance and availability required by telecommunications and enterprise markets. For customers that demand 5-9's uptime and high availability, select HP NetServer bundles are available that offer Assured Availability for NT™. This unique system provides. These breakthrough solutions offer the highest levels of system uptime with the lowest total cost of ownership in the industry. Using the award winning HP NetServers, standard Windows NT, and unmodified "off-the-shelf" applications, every HP NetServer Assured Availability Solution delivers:

- Non-stop processing through failures and repairs
- Continuous data access to storage
- Uninterrupted network connectivity

cations running in a Windows NT @ environment, which require high availability, high performance, and multiple I/O slots.

Key CT Platform Benefits

Increased performance and high availability of CT applications thanks to HP's leading-edge Windows NT servers.
Best-in-class CT solutions through HP's partnership with industry leaders.

Adding value for customers

HP quality label: Our integration centers are ISO 9002 certified.
On-time deliveries: Taking into account the customer specificity and stringent constraints, HP provides worldwide coverage and multi-site deployment.


Cost savings

HP Computer Telephony Platforms are delivered with highly reliable integration that makes the installation and startup much faster, ensuring minimal disruption of the customer's environment.
With more than 100 systems shipped per month, HP Worldwide Integration Centers have developed an unmatched logistics and planning expertise—from standard deliveries to fully customized solutions.
HP processes guarantee the most efficient management of the supply chain.




HP Powering Communications

HP PCI Platforms



NetServer LPr

- 20 servers per rack
- Industry leading 2u size, combined with latest technology make for huge ISP value
- High availability and manageability built-in



NetServer LXR8000

- Leadership performance and scalability for data intensive Internet applications with up to eight Intel Xeon processors
- 7u size; five servers per rack
- First HP NetServer to offer 99.9% uptime for support of mission-critical applications

HEWLETT PACKARD

- Disaster tolerance for multi-site protection

Foundations that deliver reliable CT platform performance

The **HP NetServer LPr** has been engineered to maximize computing power in an extremely compact package (3.5 inches high).

Key Features

- 100MHz bus with Intel® Pentium® II 400MHz, 450MHz processors and Pentium III 500MHz, 550MHz and 600MHz processors
- Twenty servers in a 2-meter rack
- Industry-leading 2U size; modular design
- Four PCI I/O slots
- Hot-swappable disk drives
- Manageability built-in

The **HP NetServer LXR 8000** is a high-performance database or general-purpose Intel Pentium II Xeon-based server providing unprecedented levels of throughput, I/O capacity, and user

support that can expand as business grows.

Key Features

- Leadership performance and scalability for data-intensive applications with up to 8-way capable 100MHz front-side bus with Intel Pentium II and Pentium III Xeon processors
- 7U size; five servers per rack
- Ten PCI I/O slots
- High availability features, including hot-swap PCI and hot-swappable, redundant power supplies and fans
- First HP NetServer to offer 99.9% uptime for support of mission-critical applications

The HP Computer Telephony Platform is also available on the HP NetServer E60, LC3, and LH4r computers.

Open Telecommunications Components

Hewlett-Packard has chosen to partner with recognized worldwide industry leaders to provide our customers with best-in-class CT platforms. HP partners provide

the key hardware and software components and Application Programming Interfaces (API) to enable the development and the deployment of CT applications.

HP partners also provide services that can assist Equipment Providers and VAR's in the development of CT applications-enabling technologies, including engineering consulting, architectural design, and developer assist services.

HP Factory Integration Services

HP offers a solution based on a comprehensive range of factory integration services with the support of its Worldwide Integration Centers (WWIC).

Services include:

- Layout of cabinets—HP NetServer racking; plugging of CT interface cards
- Solution assembly
- Configuration of hardware components
- Hardware tests
- Software installation and configuration (NT OS, Subsystems, CT Middleware, database)
- CT platform test and acceptance
- Application staging
- Application platform test and acceptance (coordinated with partner)
- Customized adaptations

HP Distribution Services

Timely shipping of telecom platforms to widespread locations at the lowest costs, tracking financial flows, and complying with international regulations are serious challenges. HP Worldwide Integration Centers offer the full range of technical, logistics, and export-related services that customers need.

HP Support Services

Worldwide support is critical to the success of the deployment of Computer Telephony applications. The HP NetServer Computer Telephony Platform leverages HP's worldwide support organizations and

the dedicated HP Telecom Support Center to provide customers with quick response time through a single point of contact.

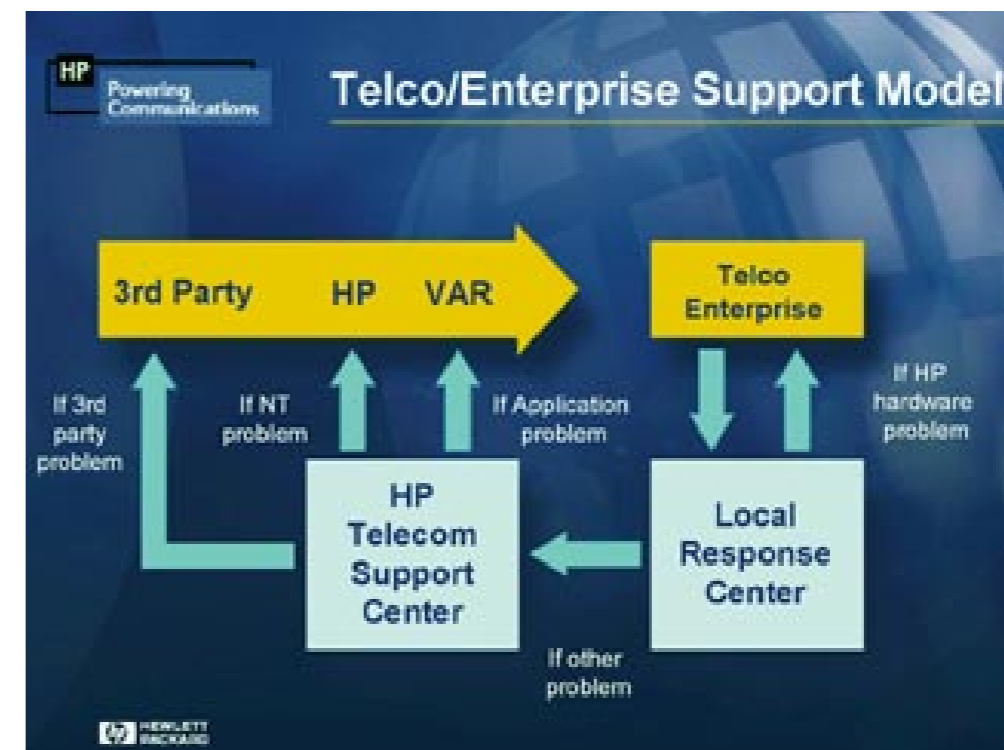
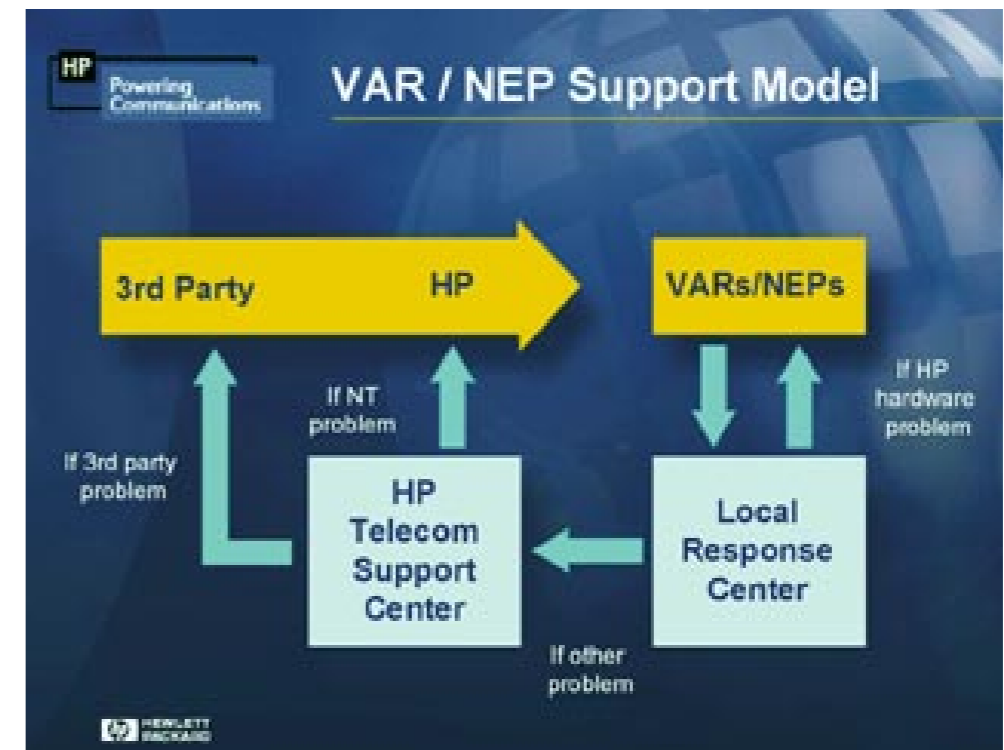
First-level support is available from local HP support organizations like the HP Response Centers. If required, in-depth qualification is performed by regional Telecom Support Centers working together with appropriate HP or partner organizations to resolve any customer problems. HP also offers programs to supplement the support that VAR's and Equipment Provider's provide to their customers.

Committed to Computer Telephony that Enable E-Services

Computer Telephony and its wealth of applications promise to bring applications such as Unified Messaging, un-PBX and IP Telephony into the everyday world of communications. With ruggedized, reliable CT platforms from HP, Equipment Providers and VAR's will enjoy the fruits of the tremendous growth in this marketplace. Looking forward, they can rest assured that HP will continue to bring together their best-in-class equipment, technologies, programs and support along with the best of third-party CT enablers like Dialogic Corporation. Hewlett-Packard is the company to watch for new CT programs and solutions. [INSIDER](#)

For more information about HP's Computer Telephony Platform, Business Communications Server (UnPBX) or HP NetServer Assured Availability for NT Solution, please visit these websites: www.hp.com/go/telecom www.hp.com/go/netservers Or email HP at: colonnade@hp.com

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Opportunity Knocks and the CT Server Answers

Ever daydream of going back in time and buying Intel stock at \$6? With 20/20 hindsight, opportunities are obvious. One of today's biggest opportunities is the CT server. And at TechSummit '99, you'll learn how to take advantage of that opportunity, exploring what a CT server is, how CT Media server software works, and even the market forces behind the industry move to CT servers.

You've heard much about how the convergence of data and voice is driving a

new approach to application development, integration, and resale. The big players in the data world have realized this. That's why you're seeing Intel, Microsoft, Compaq, IBM, and others building their telecommunications strategies around CT servers.

What's in it for you? Plenty. First, CT servers provide a smooth transition from voice to IP. Discrete solutions force you to architect your applications for either IP or specific voice technologies and protocols.

With CT Media, you can create solutions today that straddle both worlds. Choose to move to IP now or later—whenever it makes sense for your business.

CT servers also expand the market for applications. Once your customers have a standard platform to build on, they can add applications as they need them—just as they add Internet or database applications to their data environment. If you develop CT server applications, you become a part of the solution. You're able

to attract new customers.

CT servers open up the telephony world to data developers, VARs, and system integrators. The data channel delivers tremendous volumes of complicated solutions to its customers: database servers, networking, and Internet solutions. Today's discrete CT solutions are not easy to distribute and integrate because they typically require custom integration with each sale. CT servers make telephony application integration easier—and profitable for data VARs, consultants, and developers.

If you develop CT server applications, you can harness this channel. If you don't, there are more than 600,000 application developers writing to Windows and standard database platforms who will. But you have a great head start. You're at TechSummit learning the technology before everyone else. And you can start developing now, since CT Media applications written today will work on Microsoft platforms tomorrow.

Get started today. While you're at TechSummit, look for your free CT Media Trial SDK on CD-ROM. (After the show, you can download the trial software at: <http://www.ctserver.com/download>)

To learn more about Dialogic CT Media server software and the CT server, visit <http://www.dialogic.com/ctserver> on the Web, call Dialogic Sales at 1-800-755-4444, or send email to sales at sales@dialogic.com. **INSIDER**

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RESELLER SPOTLIGHT

How to Help Your Prospect Buy CT Solutions

JANET SZILVA
PRESIDENT, THE AJS GROUP

There are many ways a reseller can sell CT solutions. But the best way to effectively sell CT to prospects is to really understand their business needs. Following a few simple steps will let you begin to understand those needs – and start selling more CT solutions today.

Do Your Homework

Typically, a sales person kicks off the sales process by calling a prospect and asking about their CT needs. Although this approach may lead to some sales, it doesn't lead to the high level of sales needed to stay profitable in today's marketplace.

If you want to sell CT solutions, do your homework. Pick up the phone and call your prospect as a customer would. Consider what the experience was like. Did the prospect have an automatic speech recognition system? Were they able to handle text-to-speech? How effective was their call routing system? Call several more times or have other employees of your company call. How does the prospect company answer its phone? What was the wait time? How effective was the voice system? Record your findings and develop a list of the prospect's problems before you make your first sales contact.

Next, test the prospect's fax system. How does it handle faxes? Is the transmission time very slow? Is it frequently busy? Is the quality of faxes the prospect is sending poor? (You can test this by requesting that product information be faxed to your attention.)

Finally, shop several of the prospect's competitors via phone and fax. Since you should be working vertical markets, this will allow you to develop multiple prospects. It will also allow you later in the sales process to compare the prospect's CT solution to competitors who may have a better CT solution and more satisfied customers.

Explain the Problems

Once your research is complete, present your experiences to the prospect. You can do this by sending a letter, fax, or email with your findings. It's not a good idea to call until the contact has received your written communication. Remember, this first communication should be only about the problems you perceived, not

about the solution.

When you call the prospect, begin by summarizing the information you sent about your experiences as a customer using their current CT solutions. Explain that those experiences were what prompted you to call to discuss fixing their CT problems. Say you routinely do this before bothering a prospect to make sure they really need the services. Make sure the prospect agrees right now that they have a problem, or you will have trouble closing this—or any other—sale. Now you can make an appointment to visit the prospect in person to discuss the company's problems and some solutions that can help.

Build the Customer's Need for CT

Your first step on the appointment is to tell the prospect how his competitors are handling calls and faxes. What are they doing better than your prospect? This is information your prospect needs to consider. Encourage the prospect to shop a few competitors and see for himself. What if his customer calls a competitor? What impact will that have on his business?

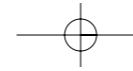
After the competitor review, bring up the risk of losing customers due to poor communication. Poor call routing, frequent busy signals, ineffective voice mail, and low-quality faxes all affect the impression customers have of a business.

Let the prospect know it costs an average of \$189 to attract a new business customer and only \$19 to keep a customer happy. The average unhappy customer will tell 11 other people, who will each tell five more people. This means 67 people will hear about each bad service experience a company provides. What is your prospect doing to reduce or eliminate this risk with his inbound sales and service calls?

Build Hope for a Solution

Now begin discussing the prospect's solution. Ask about what other problems they feel they have with their system. What needs do they have? Any plans for growth? Then offer a custom solution for the prospect's problems.

From here, your own technical knowledge will take over the sales call and you will begin designing CT solutions that work for your new client. Remember, the motto of successful sales people is "Ask, don't tell." Let your customer's needs speak and you will have a truly profitable, long-term selling success. ■



RESELLER SPOTLIGHT

Tech Support for VARs: The Distributor's Edge

SANDRA RIVERA
VICE PRESIDENT OF SALES
CATALYST TELECOM

You've done everything right. You've assessed your customer's requirements and presented a killer proposal. After diligently working to come up with the right solution to your customer's business problem, you're ready to install. But what if you get on-site and have a technical issue? Who can you call for help at this critical stage of customer implementation? If you've chosen the right value-added distributor, you should have no problem getting help with any kind of installation or integration issue you might face. That's why choosing the right distributor is crucial to succeeding in the competitive CT marketplace.

Facing New Challenges

Manufacturers of technical products typically offer their customers extensive support. But that's just the one side of the support picture. The manufacturer must also continue to expand its support team to assist other customers—for example, those who purchase from sources such as the distribution channel, or those who buy directly but can't justify purchasing an annual support contract.

To share this support burden, technical distributors have traditionally provided tech support to resellers who buy product from them. This enhanced distributor support accomplishes two objectives. First, it moves the needed support one step closer to the reseller. Second, it allows the manufacturer to redeploy its internal technical resources to better support a smaller number of direct partners.

By offering a higher level of training and support through the distributor, the manufacturer can take advantage of the bandwidth that already exists inside the distributor infrastructure. The benefits of exploiting these economies of scale? Better support, more responsiveness, shorter development cycles, fewer barriers to entry, and more profitability for all involved.

Some manufacturers have asked selected distributors to share in the expanding support challenge. And some of these distributors have responded with higher levels of support. When you are choosing a distributor, it's important to look for one that is both technically proficient and ready to be highly responsive your individual support needs.

Making the Connection

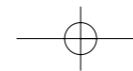
How do you find a distributor that can meet your support needs?

First, look for one whose engineers have completed the same training program as the manufacturer's own support staff. Thorough training ensures the distributor's engineers can deliver the same level of hands-on experience in answering, troubleshooting, and resolving issues as the manufacturer can.

Some distributors have innovative support options that set them apart, such as pre-paid support programs allowing a reseller who buys directly from the manufacturer, or even from another distributor, to access its support teams for help with hardware problem diagnosis, installation, and configuration, or API programming support. It's wise to look for this added level of support when you're choosing a distributor.

Besides providing manufacturer-certified support engineers, your distributor should also offer system integration as part of its enhanced support services. By integrating the manufacturer's products into an industrial system, the distributor can remove the need for installation and configuration support from the equation. Look for a distributor that can install, configure, and test your complete solution. This comprehensive support will help you quickly and easily bring your working solution to market.

It doesn't matter whether you're ready to jump in to the CT marketplace or you've already made the leap. If you want to succeed in this fast-changing environment, it pays rich dividends to partner with the value-add distributor that can offer you the broadest range of components, solutions, and technical support. ■



RESELLER SPOTLIGHT

How to Choose the Right Communications System for Mission-Critical Applications

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ALLIANCE SYSTEMS, INC.

In today's highly competitive market for open computer telephony (CT) solutions, every advantage is crucial. Along with increasingly powerful software has come the need for powerful and highly specialized hardware platforms.

If you are developing CT software, it pays to search out a hardware platform that is designed and manufactured to complement your software. By giving careful attention to the way your hardware platform is designed and manufactured, you can give yourself a powerful advantage in the marketplace. Cheaper is No Longer Better

In the beginning, all a four-port voice mail application needed was a clone PC. In fact, five years ago this configuration made up the largest segment of CT sales. A few integrators were pushing the envelope with higher-density applications, but this was the exception, not the rule. Cheaper was better and companies were cranking out disposable voice mail systems.

When it came to hardware, production costs were slashed to the bone. Few manufacturers took precautions such as implementing standard test procedures, quality programs, or programs to eliminate electrostatic discharge (ESD). Such precautions were not part of the plan. The manufacturers' real product was software, not hardware. The computer was simply the package used to deliver the application.

Most early adopters of these CT solutions found that cheap clones worked fine for their low-density needs. They were as reliable as any other PC in the customer's data network. The customer could tolerate failures from time to time—or so everyone thought.

Over the last few years, the picture has changed dramatically. Processors became more powerful, leading to newer operating systems that could support more applications in the same computer. Companies like Dialogic began to develop higher-density CT components, increasing the number of calls a PC can process.

Along the way, open CT solutions began competing with high-capacity proprietary designs. They needed a more reliable platform that would let them deliver equal or better reliability and performance. Today's powerful CT software demands equally powerful hardware designed specifically to meet its needs.

Customers Expect PSTN-Level Service

Because telephones have traditionally been so reliable, customers expect anything associated with dial tone, regardless of the application, to work as reliably as a simple telephone. It is a myth that end users will tolerate occasional communications failures. Early adopters of CT solutions found it too expensive to implement redundant components to cover single points of failure such as power supplies, hard drives, or fans. In low-density system, a power outage impacted few users.

Today's technology supports many more calls per system. Therefore, reliability and uptime are a requirement – not a luxury.

Build a Better "Basket"

The more eggs you put into one basket, the better-built the basket must be. Moreover, for best results your "basket" must be designed from the ground up specifically for the job.

A typical PC is designed to run desktop applications and to support the demands of the peripheral devices needed for data. Modems and NIC cards neither consume much power nor generate much heat. Normally, you only need one of each, so capacity is not much of an issue.

Implementing today's mission-critical CT applications requires a communications system designed from the ground

RESELLER SPOTLIGHT

up to provide redundant features and an operating environment optimized for CT devices loaded with digital signal processors (DSPs). DSPs are high-throughput processors that consume vast quantities of power and generate vast quantities of heat.

Open communications systems designs need to focus on power, cooling, and serviceability. Overheated components can behave erratically and fail prematurely. For the system to work correctly and reliably, its power must be matched to provide an ample amount of current to all devices installed in the system. Power supplies can be pushed beyond their design specifications to a point, but they will run hot and fail before their time. This is often the reason CT platforms fail. Look for Hardware Compatibility and Certified System Configurations

The system hardware must be compatible and truly certified to work with the application software it supports. Today's complex communications systems require extensive testing by experts with extensive expertise integrating the devices, making so the devices do not interfere with each other.

When system faults appear, even the most knowledgeable end user cannot separate the software application from the system on which it is installed. The most reliable software applications—and the reputations of their developers—are quickly compromised if the system supporting the application is unreliable.

End-to-End Quality is Essential

Many field failures in CT systems come from improper handling of static-sensitive components. ESD protection should be worn during all service operations. Most importantly, the entire manufacturing process should be free of static.

Packaging also plays a crucial role. Once a system has been integrated and fully tested according to quality assurance (QA) procedures, the system must be packaged in specially-designed containers built to support their weight. Standard computer packaging is designed to support the computer's basic weight, but not the added weight of the CT components installed.

Good Design Means Good Marketability

In short, the best designs, reliability, and quality translate into solid customer references for resellers. In the highly competitive CT market, choosing the right hardware platform is something concrete you can stack the odds of success in your favor. ■

CTL



FACSys Fax Messaging Gateway is more than the industry's leading fax server solution. It's the only fax-messaging platform designed to integrate the full range of workflow processes and tools across the enterprise. FACSys enables you to integrate e-mail, voice-mail, workflow management, imaging and database resources into powerful business solutions that boost productivity and extract maximum value from your corporate information assets. By adding FACSys to your environment, not only will you eliminate the inefficiencies of manual faxing; you'll fully exploit all the investments you've made in your company's information infrastructure. For more information please visit our web site www.facsys.com or please contact us at sales@facsys.com via email or 732.271.9568 by phone.

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Call Center Solutions	http://www.ccsmag.com
CIO	http://www.cio.com
Communication Systems Design	http://www.csdmag.com
Computer Reseller News	http://www.crn.com
Computer Retail Week	http://www.crw.com
Computer Telephony	http://www.computertelephony.com
Computer World	http://www.computerworld.com
CTI	http://www.ctimag.com
Data Communications	http://www.data.com
Enterprise Computer Telephony Forum	http://www.ecf.org
Frost & Sullivan	http://www.frost.com
Global Gateway Group	http://www.gcubed.com
InformationWeek	http://www.informationweek.com
Info World	http://www.infoworld.com
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Solutions Integrator	http://www.solutionsintegrator.com
Sounding Board	http://www.soundingboardmag.com
Tele.com	http://www.teledotcom.com
Telecommunications Industry Association	http://www.tiaonline.org
Teleconnect Magazine	http://www.teleconnect.com
Telephonyworld.com	http://www.telephonyworld.com
Telezoo	http://www.telezoo.com
The Ipsite.com	http://www.theipside.com
TMC Publishing	http://www.tmcnet.com
United States Telephone Association	http://www.usta.org
VARBusiness	http://www.varbusiness.com
Windows Magazine	http://www.winmag.com

Organizations

International Standards Organizations

International Organization for Standardization	http://www.iso.ch
International Telecommunications Union	http://www.itu.int

Regional Standards Organizations

Alliance for Telecommunication Industry Solutions (ATIS)	http://www.atis.org
American National Standards Institute	http://www.ansi.org
Australian Telecommunications Authority (AUSTEL)	http://www.austel.gov.au
Committee T1	http://www.t1.org
Electronic Industries Association (EIA)	http://www.eia.org
European Telecommunications Standards Institute (ETSI)	http://www.etsi.org
Telecommunication Industries Association (TIA)	http://www.tiaonline.org
Telecommunications Technology Association of Korea (TTA)	http://www.tta.or.kr

Regulatory

British Approvals Board for Telecommunications (BABT)	http://www.babt.co.uk/public/index.htm
Canadian Standards Association (CSA)	http://www.csa-international.org/welcome.html
Federal Communications Commission (FCC)	http://www.fcc.gov
Underwriters Laboratory (UL)	http://www.ul.com
The UK Office of Telecommunications (OFTEL)	http://www.oftel.gov.uk

Videoconferencing Standards Organizations

International Multimedia Teleconferencing Consortium (IMTC)	http://www.imtc.org
International Telecommunications Union — Telecommunication Standardization Sector	http://www.itu.int
Working Group T1A1.5 of Technical Subcommittee T1A1	http://www.t1.org/t1a1_a15-hom.htm



Fora

Broadcast

The World Digital Audio Broadcasting Forum (WorldDAB)	http://www.worlddab.org
General Networking	
ADSL Forum	http://www.adsl.com
ATM Forum	http://www.atmforum.com
Frame Relay	http://www.frforum.com
Multiservice Switching Forum (MSF)	http://www.msforum.org

Internet

Computer Emergency Response Team — Coordination Center (CERT/CC)	http://www.cert.org
Internet Engineering Task Force (IETF)	http://www.ietf.cnri.reston.va.us
Internet Society (ISOC)	http://info.isoc.org
Internet Telephony Consortium	http://itel.mit.edu
Internet2	http://www.internet2.edu
IP Multicast Initiative (IPMI)	http://www.ipmulticast.com
World Wide Web Consortium (W3C)	http://www.w3.org/consortium

Telephony Network

National ISDN Council	http://www.bellcore.com/NIC
North American ISDN Users Forum	http://www.niuf.nist.gov/misc/niuf.html
North American Network Operators Group (NANOG)	http://www.nanog.org
Pacific Telecommunications Council (PTC)	http://www.ptc.org
SONET Interoperability Forum (SIF)	http://www.atis.org/atis/sif/sifhom.htm
United States Telephone Association (USTA)	http://www.usta.org
Vendors' ISDN Association (VIA)	http://www.via-isdn.org

Wireless

3rd Generation Partnership Project (3GPP)	http://www.3gpp.org
3rd Generation Partnership Project 2 (3GPP2)	http://www.3gpp2.org
Portable Computing and Communications Association (PCCA)	http://www.pcca.org
The Wireless Application Protocol Forum (WAP)	http://www.wapforum.org
The Wireless Data Forum — Cellular Digital Packet Data (CDPD)	http://www.cdped.org/cdpd
The Wireless Lan Alliance (WLANA)	http://www.wlana.com
Wireless Data Forum (WDF)	http://www.wirelessdata.org

Miscellaneous

Audio Engineering Society (AES)	http://www.aes.org
Cable Labs	http://www.cablelabs.com
Cross Industry Working Team (XIWT)	http://www.xiwt.org

Data Over Cable Service Interface Specification (DOCSIS) — cable modems	http://www.cablemodem.com
Department of Defense — Defense Information Systems Agency (DISA)	http://www.itsi.disa.mil
Digital Audio Video Council (DAVIC)	http://www.davic.org
Enterprise Computer Telephony Forum (ECTF)	http://www.ectf.org
Home Phonenumber Networking Alliance	http://www.phonelan.org
IEEE standards	http://standards.ieee.org
INTELSAT	http://www.intelsat.com
International Teleconferencing Organization (ITCA)	http://www.itca.org
Moving Picture Expert Group (MPEG-2)	http://www.mpeg2.de/doc/index.htm
Personal Communications Industry Association (PCIA)	http://www.pcia.com
Smart Card Forum	http://www.smartcrd.com
The Ordering and Billing Forum (OBF)	http://www.atis.org/atis/clc/obf/obfhom.htm
The Unicode Consortium	http://www.unicode.org
The 1394 (Firewire) Trade Association	http://www.1394ta.org
Universal Serial Bus (USB) Forum	http://www.usb.org

Trade Publications

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Call Centre Focus	Internet World	Telecom Investor
Canadian Telecom Magazine	InternetWeek	Telecom News Magazine
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Computer Telephony	Responsive Database Services Limited (RDSL)	TeleSpan
Computerworld	Revista Nacional de Telecomunicacoes	Total Telecom
CTI	Satellite & Cable TV	VARBusiness
Data Communications	Smart Reseller	Wireless Access Technologies
Dr. Dobb's Journal	Solutions Integrator	Wireless Design & Development
Enterprise Partner	Sounding Board	Wireless International Magazine
Hitek	Spread Spectrum Scene Online Magazine	Wireless Systems Design
IEEE Communications Information Week		Wireless Week



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Allied Business Intelligence, Inc.	Opinion Research Corporation
Asia Pacific Research Group	Opinion Search Inc.
Babb Strategic Planning Group, LTD	Probe Research, Inc.
China Research Corporation	Strategis Group, Inc.
Driscoll-Wolfe	Team Telemedia
Frost & Sullivan	Technical Marketing Services
Gartner Group	Technology Futures, Inc.
InfoCom	WinterGreen Research, Inc.
Insight Research Corporation	World Info Technologies Inc. (WIT)
M.J. Scheele & Associates	Yankee Group
MagNetiX Web	

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Bailly, G., C.Benoit and T. Sawallis. Talking Machines.
Bayer, Michael Thomas. CTI Business Solutions: How to Put Computer Telephony Integration to Work.
Bezar, David D. LAN Times Guide to Telephony.
Bodin, Madeline. Maximizing Call Center Performance.
Bodnar, Don. How to Write an RFP for a Telecommunications Cabling System.
Briere, Daniel D., Patrick J. Hurley, and Rebecca Wetzel. Internet Telephony for Dummies (with CD-ROM).
Brosch, Ernie. How to Cable the Home Office/Small Office.
Brosnan, Michael and John Messina. The Telecom Professional's Complete Guide to the Internet.
Calhoun, George. Wireless Access and the Local Telephone Network.
Carden, Carlton. Understanding Computer Telephony.
Coscia, Stephen. ■ Customer Service Over the Phone. ■ Tele-Stress – Relief for Call Center Stress Syndrome.
Dawson, Keith. ■ Call Center Handbook. ■ Call Center Savvy.
Dawson, Keith and Madeline Bodin. Call Center Dictionary.
Deixler, Lyle. Which Phone System Should I Buy?
Edgar, Bob. PC Telephony: The Complete Guide to Designing, Building, and Programming Systems Using Dialogic Systems.
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GO-MVIP. The MVIP Book.

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Grigonis, Richard. Fault Resilient PCs.
Holly, Krisztina and Chris Brookins. Visual Basic Telephony.
Kane, Patrick. Computer Telephony on the Sun Platform.
Kauffman, Maury. Internet and Computer Based Faxing.
Keiser, Bernard E. and Eugene Strange. Digital Telephony and Network Integration.
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Laino, Jane. ■ The Telephony Book. ■ Telephony for Computer Professionals.
Langhoff, June. Telecom Made Easy (Third Edition).
Lazo, Luis and Daisy Ardois. Diccionario de Telecomunicaciones Lazo-Ardois.
Lenz, Mary. Complete Help Desk Guide.
Margulies, Edwin. ■ 337 Killer Voice Processing Applications. ■ 1001 Computer Telephony Tips. ■ Audio Teleconferencing — The Complete Handbook. ■ Client Server Computer Telephony. ■ SCSA: The Complete Reference Guide. ■ SCSA: Computer Telephony Building Blocks. ■ Secrets of Windows Telephony. ■ Understanding Java Telephony. ■ Understanding the Voice-Enabled Internet. ■ The UnPBX – The Complete Guide to the New Breed of Communications Server.
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Nash, Mariellen. A City, County, State Guide to Acquiring a Telephone System.
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Retske, Gene. The International Callback Book.
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Shapiro, Jeffrey. Windows Telephony.
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Thomer, Jan. Intelligent Networks.
Tittle, Ed and Dawn Rader. Computer Telephony: Automating Home Offices and Small Businesses.
Trowt-Bayard, Toby. Videoconferencing: The Whole Picture.
Tunmann, Ernest. Hybrid Fiber Optic/Coaxial (HFC) Networks.
Vogelsang, Ingo. Telecomm Pricing Theory and Practice.
Waite, Andrew. Customers: Arriving with a History and Leaving with an Experience.
Walters, Rob. Computer Telephone Integration.



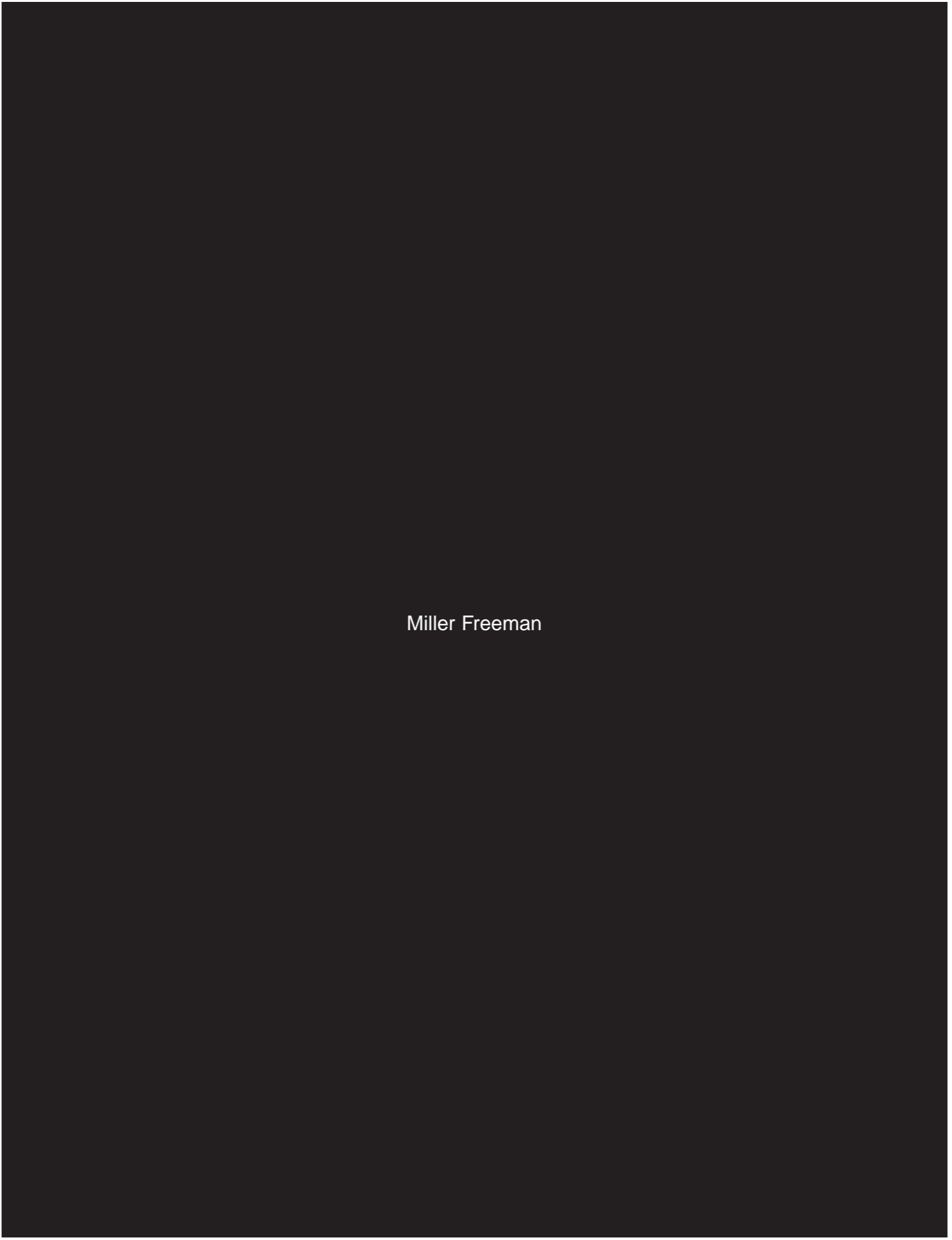
Telecommunications Trade Shows and Events

ACTA	1-407-332-9382
Agent Trade Expo	1-602-990-1101
ALTS	1-202-969-ALTS
Cable '99 (NCTA)	1-972-234-8750
Comdex	1-781-433-1500
ComNet	1-508-820-7528
Competitive Benchmarking and Growth Strategies for the Telecommunications	1-212-964-7000
CT Expo	1-212-691-8215
CTI World	http://www.ctiworld.ca/index_e.html
Conference on Lasers and Electro-Optics (CLEO)	
E-Business Expo	1-516-562-5767
European Conference on Networks and Optical Communications	41-61-686-77-11
Global ISDN and ATM	http://www.globalisdn.com — 44-0-1895-455538
Networld+Interop	1-781-433-1665
NewMedia	http://www.newmedia.ca — 1-203-882-1300
IEEE International Conference on Communications	1-613-599-3600, ext. 6694
IEEE International Workshop on Broadband Switching Systems	1-613-545-2934
Institute of Telecom Resellers in Europe	44-1604-832216
International Conference on Communications	1-514-870-3060
Internet Expo	1-978-470-3880
Internet Telephony Expo	1-508-620-9300
Internet World	1-800-500-1959
ISPCon	1-303-235-9510
PC Expo	1-800-829-3976, ext. 2207
SpeechTek	1-203-834-1122
SuperComm	http://www.supercom99.com
SuperComm Mexico	52-5211-8904
Telecom East	1-714-513-8400
Telecom Business	1-800-717-7469
Telecon	1-925-513-4243
TRA	1-202-835-9898
VON	1-516-293-3996 (fax)

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