The Wainhouse Research Bulletin

ONLINE NEWS AND VIEWS ON VISUAL COLLABORATION AND RICH MEDIA COMMUNICATIONS

This newsletter is much longer than our usual. Quite frankly, we're exhausted from writing it. Hope you're not too exhausted to read it.

The answer's to last week's Conferencing Millionaire quiz are at the end of this bulletin.

Please feel free to forward this newsletter to your colleagues. To be added to our automated distribution list, simply visit http://www.wainhouse.com/bulletin.

Andrew W. Davis, andrewwd@wainhouse.com.

PictureTel and Nortel License Broadband Audio Technologies

PictureTel and Nortel have licensed to each other the patents which each party holds to ITU standards G.722 and G.722.1. Nortel Networks will also be licensed under PictureTel's Siren™ broadband audio technology. Financial terms of this agreement were not disclosed.

In short, PictureTel gains a license for G.722; Nortel gets G.722.1 and the ability to implement Siren as well.

PictureTel's patented Siren wideband audio compression algorithm is an enabler for audio conferencing, videoconferencing, Voice over IP, and Internet streaming. Siren was chosen by the ITU as the new G.722.1 international standard for audio coding. G.722.1 provides 7 kHz of audio bandwidth (3 kHz is considered "normal") at bit rates of 24 and 32 kbps. PictureTel's Siren is a technology that you can think of as a superset of G.722.1. Siren is scalable from 7 to 14 kHz; PictureTel has implemented the technology at 16, 24, and 32 kbps.

Here's What I Wonder

Nortel is mum about two issues. The first is what they're going to do with Siren. My guess is we'll see in in some VoIP product. The second is what they're going to do about pursuing their patent infringement claims. I hear rumors that most vendors of videoconferencing gear (not PictureTel of course) who support G.722 might be liable.

Siren is a nice complement to IDEC, another algorithm that PictureTel has licensed to several vendors (but not Nortel). IDEC provides noise reduction, echo cancellation, and gain control. Combine IDEC and Siren and you have the basics for some pretty powerful audio conferencing!

snowd@pictel.com (Dave Snow)

Lucent Licenses TriMedia

Lucent's Microelectronics Group has licensed the TM32 VLIW processor core from TriMedia Technologies. . Lucent will integrate the 32-bit VLIW embedded TM32 processor core into its system-on-a-chip portfolio to power network access devices such as residential gateways and set-top boxes.

"Why do I write about this," you might ask. Well, the TriMedia architecture has become the force majeur in the videoconferencing world. TriMedia does all the audio/video heavy lifting inside Polycom's ViewStations, PictureTel's 900 Series, and virtually all of TANDBERG's current product lineup. The Lucent effort is likely to lead to more powerful versions of the TriMedia - single chips that integrate TriMedia with other signal processing cores. And because Lucent is targeting high volume applications, the new system-on-chip products should be lower in cost. So, my hope is that videoconferencing and visual collaboration products and services will benefit from the free ride.

cjhartley@lucent.com (Charlie Hartley)

Microsoft Unleashes Conferencing Server

Christine Perey, cperey@perey.com

Microsoft has just made it easier than ever for network managers to build and manage conferencing capabilities in their enterprise IP network infrastructure. After a year of development effort, the software giant released final code for Exchange 2000 Conferencing Server.

Here's how it works. When you have an Exchange 2000 Server client access license for use in your network, your Exchange 2000 Conferencing Server will, at no extra cost, support: point to point and multipoint data conferencing, including white boarding and live application sharing via NetMeeting 3.0; audio and video conferencing; and schedule management, via Outlook.

Of course, the data, audio, and video conferencing portions of this could happen in a peer to peer (2-person) mode using NetMeeting or another application today (if you're permitted to install such tools on the corporate desktops), but for groups of three or more, multipoint doesn't happen all by itself. With your settings and permissions properly set by the network manager in the Conferencing Server's management console, IP Multicast turned on in the routers, and possibly the help of additional mixing through gateways and multipoint control units, you can invite an unlimited number of participants on your corporate network to a virtual meeting!

And, what's more, you could join a conference that had been enabled to share a desktop application, someone else could come in and communicate by telephone, and the three of you could include others via an IP-based (H.323 compliant) videoconference. This multiple-conferencing capability is not, to my knowledge, available in any other solution on the market today.

What's needed: There has to be client software loaded for the conferencing capabilities to have a user interface. Those desktops running Windows 98 or earlier will have to turn to either NetMeeting 3.1, a third party software application that either understands H.323 (such as CUseeMe) or a third party hardware accelerated device (even a ViewStation). In the not-too-distant future expect to find server side applications designed to support Microsoft's special brand of call set up using the NetMeeting SDK.

If you're a Windows 2000 user, you get to take advantage of the latest and greatest operating system's built in "services." In conjunction with the full Exchange 2000 Server, the Conferencing Server leverages the Telephony API (TAPI) 3.0 for quality of service and IP-based multicast technology for your audio and video traffic. And, to help users to find one another, Conferencing Server makes heavy use of the Active Directory technology to dovetail with directory servers that may be in the network.

Those who want to maximize the functionality and reach of the conferencing servers will have to add one or more third party options. Microsoft says that Latitude Software, Centra Software, Accord Networks and CUseeMe Networks have already developed additional software (Microsoft calls the third party extensions "Conference Technology Providers" which is a little confusing).

Let's drill down and take a closer look at CUseeMe Network's Conferencing Option for Microsoft Exchange. When loaded in a network with Conferencing Server, this option will make CUseeMe Network's MeetingPoint product seamlessly appear available to registered users throughout an Exchange 2000 network. MeetingPoint extends the functionality of Exchange 2000 core conferencing capabilities by enabling H.323-based multipoint conferencing without going through a gateway. With this option any H.323 conferencing client can participate in a mixed NetMeeting/H.323 session. When used in conjunction with Outlook 2000, users will also have the ability to schedule, start, stop, manage, update and connect to MeetingPoint videoconferences from within their standard desktop interface.

At the center of Exchange 2000 Conferencing Server is something that Microsoft calls the "Conference Management Service." It's not a gatekeeper, but has a number of the same functions. According to the on-line brochure, this is where an administrator can control and configure clients with different conferencing technologies, as well as control the access these clients have to limited corporate conferencing resources (such as bandwidth, wide area connectivity).

Is this significant? Well, it's no secret that data network managers are reluctant to permit any size (much less "unlimited" size) virtual meetings on their networks. Centralized and reliable control over conferencing traffic and resources is a key ingredient that has been missing.

It's been a long time coming, but I think that the Conferencing Server is a giant step towards combating this problem with a concrete, stable solution. Given session (as well as end point) manageability, bandwidth management, integration with instant messaging and calendaring infrastructure, network managers should be more responsive to user requests for collaboration services in the future.

So, where is this headed? When Microsoft released its technologies for conferencing in the past (NetMeeting), the user community responded with great interest. Companies trying to sell software clients were adversely affected, but a greater number of vendors (with end point as well as server side offerings) incorporated NetMeeting support and data conferencing interoperability rose across the board.

I expect the release of the Conferencing Server and the Web Store SDK will inspire independent software vendors to follow in CUseeMe's footsteps and come out with more complementary IP-based conferencing technologies in the months to come.

Ezenia! to Provide Support for Microsoft Exchange 2000

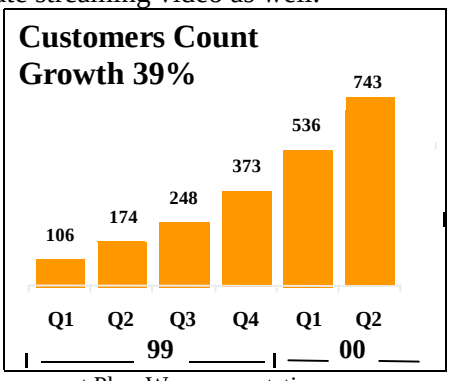
Ezenia has announced that its Encounter real-time collaboration products will be integrated with Microsoft Exchange 2000 Conferencing Server. Integrating the Encounter family with Exchange 2000 Conferencing Server will enhance users' collaboration capabilities by allowing them to leverage their corporate infrastructures by using Microsoft Outlook to schedule meetings and to share voice, video and data over the corporate network.

Mfinnerty@ezenia.com (Meghan Finnerty)

More Web Conferencing from PlaceWare

Web Conferencing is here to stay. In my own humble opinion, I think it is one of the best values in the conferencing industry. The prototypical web conference today has people connected via an audio conference over the public phone network

while they are also connected to a common URL via the Internet to see slide presentations. Other combinations are possible also, including interactive voice and data over the IP network in real time, and streaming voice and data over the Internet in both real time and store-and forward mode. The message is compelling, and the connection is low cost. As time moves forward, we can expect to see web conferencing vendors integrate streaming video as well.



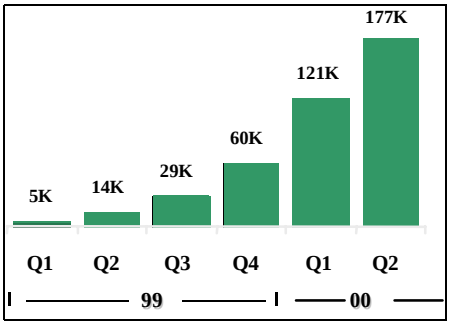
Data from recent PlaceWare presentation

One of the leaders in this emerging field is a company called PlaceWare. The company made two significant announcements recently.

1. Major enhancements to its flagship service, PlaceWare Conference Center 2000. This service is oriented toward large scale events. The new software behind the service features larger content viewing areas, streaming media support, and outlook calendar integration among many others. PlaceWare also introduced a new companion service for event management called PlaceWare Forum that automates the creation and management of online events such as web seminars, sales training sessions and new product launches. Forum covers such functions as event listings, automated registration, confirmation, audience profiline, and email reminders with a whole range of post-event functions.

2. While the company has concentrated on events, it has also introduced MeetingCenter 2000 and MyPlaceWare Professional – two services that focus on interactive meetings with support for document sharing and self-administration tools and a long list of other meetings-oriented features.

I think virtual meetings are really going to take off. Web conferencing technology is a dynamite way to supplement in-person meetings, to conduct one-on-one sales calls and client presentations. Most people aren't going to want to set this up themselves; they're going to want to use a service bureau. PlaceWare's statistics support me on this point.



Data from PlaceWare showing the number of "seat-hours" of web conferencing service use.

kathryn@placeware.com (Kathryn Romley)

BT and Motion Media Team Up

I can't figure this one out. BT and Motion Media have announced (Oct. 2, 2000) that they have joined forces to pilot videophone technology in the home. BT will loan Motion Media videophones to about 120 families with young children. According to the press release, "Affordable technology will enable people to see each other at the same time as speaking to each other."

Well, since the Motion Media videophone has been around for several years, and since I know they've had POTS service in the UK for over a decade, I have to conclude that ISDN in England is new!!! Pretty soon I expect our British cousins to discover the Internet. (See next story.)

trudis@motion-media.com (Trudi Scantlebury)

Cable & Wireless & IP

I thought this news item was another sign of the times to come. Cable & Wireless (C&W) has struck a $1.4 Billion deal for a new IP network that Nortel Networks will build and maintain. This will migrate C&W voice customers in the

UK, Europe, Japan, and the US to a new IP network. Customers should expect enhanced voice services such as unified messaging and videoconferencing, according to a C&W spokesperson. C&W, operating in 70 countries, is one of the world's largest voice and data communications service companies, competing with the likes of AT&T, Sprint, WorldCom, and Global Crossing. The company is also becoming an ISP powerhouse.

Here's What I Think

The question of IP is a question of WHEN, not IF. I believe the transition from circuit-switched to packet-switched is a 10-year migration story, so don't believe the vendors that claim you must be on IP by next year in order to compete; and don't believe those who say IP will *never* provide the quality of service needed or business communications. The problems with IP today are all basic engineering and political problems; no rocket science or amazing breakthroughs are needed to solve the issues. The C&W announcement is further evidence.

Operating a packet-switched service is likely to produce a 20-40% savings for the service providers, compared to circuit-switched. In addition, of course, it opens the way for converged, enhanced, or integrated services, whatever you want to call them.

Nicola March 020-7315-4031

Dollars & Sense

Polycom's 3rd Quarter - On A Roll!

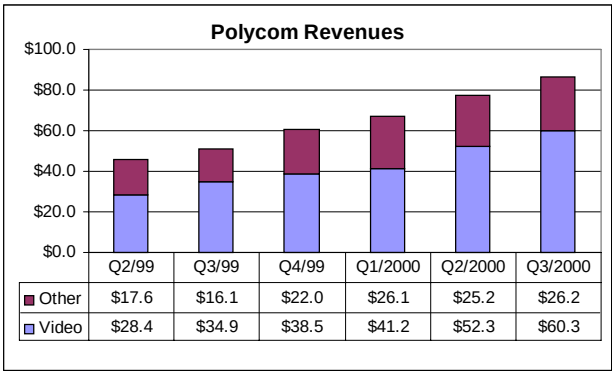
Andy Nilssen, andyn@wainhouse.com

Like a picture straight out of an overly optimistic textbook business plan, Polycom roped in yet another phenomenal quarter. Overall revenues grew 65% to $86.5M compared to Q3-99; and the videoconferencing business, which contributed $60.3M or 70% of Polycom's total revenues, grew 73%(!) over Q3-99.

Safe to say on a roll? I think so.

But there's more: Polycom reported shipping 11,222 ViewStations in the quarter – itself a staggering number – but like the icing on an already bulging cake, Polycom claims 10,741 of their new USB-connected ViaVideo desktops were also shipped to the channels in this being ViaVideo's inaugural quarter. When one considers the shipments of hardware-assisted IP-only desktops for all of 1999 was probably about 11K units (our estimate), this is a HUGE number – which leaves us to wonder if they are replacing competitive gear, growing the market, or filling the channels – only next quarter will tell for sure.

Oh, and for those who may be interested, Polycom claims to now own 70% of the speakerphone market as well.



	Q2/99	Q3/99	Q4/99	Q1/2000	Q2/2000	Q3/2000
Other	$17.6	$16.1	$22.0	$26.1	$25.2	$26.2
Video	$28.4	$34.9	$38.5	$41.2	$52.3	$60.3

PictureTel Unloads Starlight Networks

AxessPoint has acquired Starlight Networks from PictureTel's 1414c subsidiary. Under the terms of the agreement, 1414c will retain licensing rights to harness Starlight's core streaming technology to deliver its streaming services. In addition, the two organizations have signed a co-marketing agreement for Starlight's eVAS, a Web-based software streaming solution that empowers companies to create, automate, and manage streaming media Webcasts over the Internet and corporate intranets.

AxessPoint delivers distance learning and knowledge management solutions to corporations, universities, and government agencies using proprietary technologies.

The value of the deal is a bit hard to determine. AxessPoint has agreed to pay PictureTel $300,000 and an amount, up to $3,500,000, based on 50% of AxessPoint's net profit over the next 2 years. In addition, PictureTel has been granted warrants to purchase up to 2% of AxessPoint's outstanding common stock at any time prior to December 31, 2002. The exercise price of the warrants will be set by formula in the future. PictureTel noted that sale of the Starlight assets to AxessPoint will reduce its ongoing expenses by approximately $1,800,000 per quarter. PictureTel expects to incur a charge of approximately $3,000,000 related to this transaction. This charge will primarily consist of the write-off of any remaining capitalized software and certain retention and lease payments that PictureTel remains obligated to make.

This move by PictureTel is the company's top management delivering on what it has promised the street. One of the biggest benefits is that it will reduce the company's monthly operating expenses.

takalar@pictel.com (Ralph Takala)

Madge Unloads Video

Madge connect, a subsidiary of Madge Networks has sold its video networking business to York Telecom. This is part of the re-focusing, streamlining efforts of struggling Madge. York, headquartered in Eatontown, New Jersey, designs, installs, and supports videoconferencing and distance learning applications. The company focuses on government and Fortune 1000 companies.

I see this as another affirmation of just how hard it is to make a go in our industry. Madge has tried to make a dent in the video market, first on its own, then by acquiring Teleos.

Dave.Elliott@madge.com

Got a question? Got an answer?
Take a minute & contribute
The Wainhouse Research Web Forums
See you there!

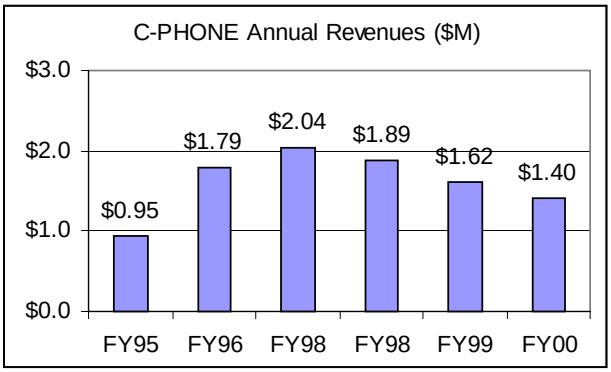
C-Phone Reports In

C-Phone has reported net revenues have increased 78% from $380K in the second quarter of their last fiscal year to $676K in the same quarter of this fiscal year. The company attributes the sales increase to one customer of older generation products. A new platform is due to be announced later this year, targeting the security industry. The new product will be POTS-only. C-Phone's product line up today is comprised of set-top boxes that connect via ISDN and POTS. I do not remember the last time C-Phone reported a profitable quarter.

Ending Date			2/29/00	5/30/00	8/31/00
C-Phone	Q2-00	Q3-00	Q4-00	Q1-01`	Q2-01
Revenues	$0.38	$0.42	$0.22	$0.38	$0.68
Op Income	-$0.93	-$0.78	-$0.77	-$0.51	-$0.60

Must be fuzzy math

The North Carolina Technology Fast 50 Program, a national competition sponsored by Deloitte & Touche, has selected C-Phone to be one of North Carolina's top 50 fastest growing technology companies. You be the judge.



jmanski@kcsa.com (Joseph Mansi)

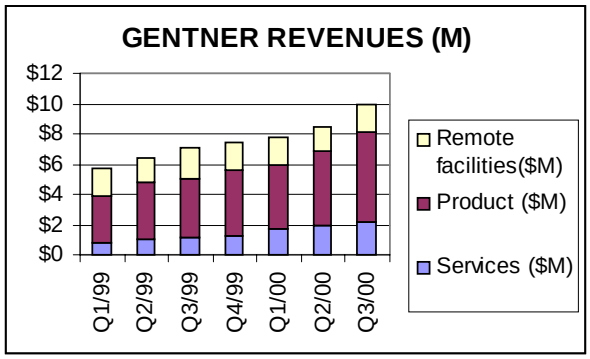
Gentner Reports In

Gentner has turned in stunning financial results for its first quarter fiscal 2001 period. Revenues overall are up 42%, and conferencing services revenues are up a whopping 116% from the same quarter one year earlier. International sales were

about 12% of the total. Gentner also has a private label relationship with XO Communications, the company formerly known as Nextlink.

Gentner	Q299	Q399	Q499	Q1-00	Q2-00	Q3-00
Revenues ($M)	$6.40	$7.10	$7.42	$7.90	$8.50	$10.03
Op Inc. ($M)	$1.50	$1.69	$1.65	$1.94	$2.00	$2.38

The company currently tracks three product lines: conferencing services, conferencing products, and remote facilities management, which is largely related to the high definition TV market. In the conferencing product space, Gentner has long been known for its audio enhancement products.



What I find kind of interesting is that Gentner recently acquired the assets of ClearOne and if my antenna are working properly, is really positioning itself to take a run at Polycom. Gentner is already moving the ClearOne conference room product at rates far higher than ever achieved by ClearOne itself and is working on finishing the videoconferencing set-top appliance begun by ClearOne as well. When I saw the ClearOne product in a demo quite a few months ago, it was a TriMedia-powered device with some interesting speaker-tracking and document sharing technology. But it had a long way to go to being a finished product.

Gentner is doing well, and CEO Fran Flood clearly has excellent management skills. But I have to wonder why anyone would want to get into the videoconferencing set-top box business today. Makes me nervous.

sstrohm@gentner.com (Susie Strohm)

VTEL Shares Do the Limbo

Here's an interesting story based on a call I received from one of the fund managers out there in cyberspace. Many of my friends have gotten rich from doing the exact opposite of what I do in the stock market, so I gave up financial analysis and stock recommendations long ago. But, look at these numbers (they're *mine*, not VTEL's) and tell me where I'm going wrong.

VTEL	Company ($M)	Per Share ($)
cash	$6.9	
short term investments	$29.0	
receivables	$23.4	
inventories	$14.7	
payables	$15.0	
Net cash	$59.0	$2.38
Market Cap on 10/13/00	$51.3	$2.07
Burn rate next 2 qtrs	$7.0	
Severance	$7.5	
Net cash value Q2/FY01	$44.5	$1.79
Piece Parts Value		
Est value of real estate	$12.0	
Est value of accord stock	$7.7	
Tax loss carry forward	$25.0	
Pierce Phelps Spinoff	$20.0	
OnScreen24 spinoff	$8.0	
Campustream/Articulearn	$1.0	
Total Additional Value to Unlock	$73.7	$2.97
Computed value in 6 months		$4.77
Value of stock on 10/13/00		$2.07

What my little table shows that on Friday the Thirteenth, VTEL was selling less than its cash value. And moving forward, things could be even more interesting.

Is it buy low, sell high, or buy high, sell low? I can never remember.

jdabbs@kercheville.com (Jeff Dabbs)

Centra Reports 3rd Quarter Results

Centra Software, one of the original pioneers of web conferencing, reported Q3-2000 revenues of $6.3 million, which represents a 133% increase over Q3-1999. Centra's product licensing revenues have stayed at a fairly constant percentage of revenue, which is counter to web conferencing's current trend towards outsourced services – and perhaps a reflection of Centra's particular Global 2000 customer base. The company's operating loss increased to $5.75M during the quarter primarily due to increase marketing, sales, and R&D expense.

Centra $M	Q3/99	Q4/99	Q1/00	Q2/00	Q3/00
License Revenues	$2.35	$2.48	$3.15	$4.05	$5.19
Service Revenues	$0.37	$0.53	$0.64	$0.96	$1.15
Total Revenues	$2.72	$3.01	$3.79	$5.01	$6.34
Operating Income	-$1.47	-$3.18	-$4.03	-$4.57	-$5.75

Andrew Installs PictureTel 900 System (Part 2 of 2)

In WRB #12 I described my difficulties in installing the software on the PictureTel 960 Series System; my frustrations with any software product that begins with the word Microsoft; and my physical network connections. Several of you have called me to find out "what happened?" Here's my quick update.

I ended Day One, as described in WRB #12, after multiple re-installs and numerous boots, and thought I was running OK, although I could not make a successful IP call.

Day Two: My system boots with the familiar "driver failure" error and my NIC is not working. After nearly three hours of frustration and over two hours of technical support help (to no avail), after re-installing software and rebooting numerous times, I quit for dinner.

Day Three: The tech support escalation team at PictureTel calls me first thing in the morning. I turn on the machine, and it boots fine. No error messages; all systems working properly. I have not touched the machine, LITERALLY, since the day before. I am reminded of how really bad toothaches can suddenly vanish when you enter the dentist's office.

Bottom line of the story: Since then, I have booted the PictureTel system 3x a day for over a week, and it has run perfectly every time. My drivers have miraculously repaired themselves! Bill Gates has done it again! I'm ready to move on, but the nagging thought persists that since I didn't fix the problem, maybe the problem isn't fixed. On the other hand, the problem HAS disappeared.

In the past week I have called people (and had them call me) over both IP and ISDN and have connected with other PictureTel 900 systems, a Polycom ViewStation, Tandberg 6000, Zydacron comCenter, Intel TeamStation, and a VCON MediaConnect. Every single call has gone through. Color me amazed!

Some Random Comments

I have a 200 kbps DSL connection. The PT960 comes with a default IP bandwidth setting of 768 kbps. I needed to change this (very easy to do in the configuration menu). Once I did this, my IP calls worked perfectly. If you call me over IP at a data rate higher than 200kbps, the call still goes through, but the audio/video quality are terrible. Somehow, this seems to me to be a weakness in the H.323 standard. In fact, I think my quality is best at 128 kbps, since it leaves more "headroom" for the DSL connection.

PictureTel's high bandwidth audio is noticeably superior to any of the alternatives.

When making a call between PT900 systems, the audio/video quality is superior to any of the "inter-vendor" calls I tried. Although some of the "inter-vendor" calls are better than others. Far end camera control (FECC) has worked with some systems, but not all.

I've yet to read the PT900 operator's manual, so I'm sure I've got lots to learn. But I suspect my habits (read the manual later) are typical.

During my first call to a PT900 system NOT inside PictureTel, I learned that you can configure the system for "auto-answer with audio mute." Neither I nor my remote colleague knew this, and we were stumped when we had two-way video and one-way audio. Neither of us had read the user manual (who knows what RTFM means?), and the fix was a simple check-box in the system configuration.

One other point, PictureTel tells me that something like 1000 systems have shipped, and less than 1% have had problems. Naturally, I'm part of the 1%. I could have told them that before they shipped me a system. The feedback I've received from other readers however would support the company's claim.

So, where does this leave me. My conclusion today is the same as it was two weeks ago. There are some installation hurdles to overcome. And this is definitely not an appliance. But after you put in the effort, you definitely get to a higher plane of features and functions. And you can't beat PictureTel's user interface.

So, let's see if my driver problems return. And now, I'm off to try some collaboration!

The Wainhouse Research Bulletin is published by Wainhouse Research LLC, 112 Sumner Road, Brookline, MA 02445. Telephone 617-975-0297. Email to editor@wainhouse.com

People & Places

Tim Duffy has landed. -- incuVest LLC, a creator, developer and operator of leading-edge technology companies (read venture captial), has begun its overseas expansion with the opening of a European headquarters in London. Tim Duffy, former group vice president of PictureTel, heads the office.

Leo Hindery, of cable television industry fame, has resigned as CEO of Global Crossing after just seven months on the job.

James A. Valeo is now vice president of strategic operations and general counsel for Gentner Communications.

Robert B. Scott is now Chief Operating Officer for CUseeMe Networks. He was previously with CMGi.

James Griffin is now EVP of Product Operations at FVC.COM

Randy Acres is VP and CFO at FVC.COM

Allwyn Sequeira, founder of FVC.COM, has resigned as an employee and will remain as a member of the board and a consultant to the company.

Answers to the Millionaire Quiz (WRB #13)

Most of you who took the time to write me about the quiz in bulletin #13 complained that it was TOO HARD. Well, we're not about to lower our standards. Toughen up, and pay attention.

1. Which city can be called the videoconferencing capital of North America?
   a. Austin, TX

2. In 1997, several projects inside PictureTel attempted to take videoconferencing to the next level – which of the following was NOT a code name used by a PictureTel engineering team at the time?
   a. Pumpkin

3. In 1994 several companies banded behind a new videoconferencing standard introduced to replace H.320. Which company spearheaded the PCWG?
   d Intel

4. In 1994, AT&T introduced a service to connect any H.320-compliant system to any other H.320 compliant system on a dial-up basis. The service was known as:
   a. WorldWorx

5. One of the leading vendors for workgroup collaboration and videoconferencing software in the early days of the industry was InSoft with its Communique! product for UNIX workstations. InSoft was acquired and promptly killed by:
   a. NetScape

6. One of the original software applications for data collaboration dominated the market until Intel introduced ProShare 1.0. The market leader company promptly folded its tent. That company was:
   a. WorldLinx

7. The name of the market leading data collaboration software referred to in Q6 was:
   a. Vis-a-vis

8. One company had the industry in turmoil for many years with its videoconferencing patent infringement lawsuit. That company was:
   c. Datapoint

9. Which TWO of the following Japanese companies have not yet dropped out of the videoconferencing market
   a. Sony & d. NEC

10. One of the early vendors of Macintosh videoconferencing systems was:
   a. Nuts Technology

11. Netergy Networks was originally known as:
   a. Integrated Information Technology

15. The first H.320 software system ran on a Pentium-90. The operation was a success, but the patient died. The patient with the H.320 software product was:
   a. Vivo Software

16. Many believe the future of conferencing, visual collaboration, and data conferencing is tied to IP networks. IP stands for:
   d. Internet Protocol

17. Most videoconferences today take place on an ISDN connection. ISDN stands for:
   b. Integrated Services Digital Network

18. The function of an inverse multiplexer is:
   c. Combine separate low bandwidth channels into one high bandwidth channel

19. The most revenues ever recorded by a videoconferencing company in a single year was:
   d. $490.2 million

20. Continuous Presence is:
   b. The ability to see multiple conference participants in a multipoint call while hearing the speaker

Scorecard: Give yourself 5 points for each correct answer.

80-100: Conferencing Guru. You've been following the industry for years and paying attention. Your collection of industry T-shirts and mugs is impressive. Write us if you need a job.

60-79: Solid Conferencing Professional. You have promise and can kibbitz with the best of them. Keep reading the WRB and you can be a Guru.

40-59: Conferencing Amateur. Don't give up your day job. Oh, Oh. This IS your day job. Sorry.

20-39: Conferencing New Born. Don't despair. In 5 years, today's companies, products, standards, & buzzwords may all be part of antiquity too.

0-19: Conferencing Air Head. What, Me Worry?