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# SPOT *light*

Worldwide News & Information from Digital's Components and Peripherals Business Unit

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**digital**

## From the Desk of Larry Cabrinety



Welcome to **SPOTlight** from Digital Equipment Corporation's Components and Peripherals (C&P) Business Unit. **SPOTlight** is designed to provide you with

C&P's worldwide news about the people, products and services that help meet the expanding needs of customers and enable them to thrive in any business environment — from the small office-home office to the global corporation.

Today, C&P accounts for more than \$1 billion in annual revenue worldwide. Over the last year, we have been recognized as a bright spot within the corporation. **SPOTlight** represents this positive contribution and celebrates our accomplishments.

To enable our success, C&P remains committed to providing comprehensive, advanced solutions that leverage the power of network computing, as well as Digital's history of leading edge technology development and quality engineering. Some of our industry-leading offerings include the Multia MultiClient Desktop device, powerful computer systems, Alpha single-board computers, terminals, printers and accessories, bar code readers, system components, and worldwide consulting, design, manufacturing and support services.

In 1994, C&P received a number of prestigious industry awards for some of these products. Our printers garnered top honors from *Byte* and *PC Magazine*. And, I am very excited to tell you that Multia, our latest

groundbreaking product, received Best of Show at Fall Comdex, for best system. **SPOTlight** will provide you with information on these events, as well as explain changes in staffing and enhancements to our distribution and marketing strategies that have made doing business with C&P easier for our partners and customers.

And that's not all. This first issue of **SPOTlight** features an overview of the show-stopping events we held at Comdex this year, new product data, and an application story that illustrates how the University of Pittsburgh is benefitting from using Digital network printers. We have also inserted an abridged C&P organizational chart to make it easier for you to find out who's behind our successes.

Digital is committed to helping customers succeed. Whether it's designing products that adhere closely to industry-standards, so that tomorrow's technology will complement customers' existing solutions and not render them obsolete, or developing quality services and support programs to ensure customer satisfaction. I hope you will find the information in **SPOTlight** beneficial and look forward to hearing from you.

Sincerely,

**Larry Cabrinety**  
Vice President, Components and Peripherals Business Unit

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# SPOTlight

Worldwide News & Information from Digital's Components and Peripherals Business Unit

## Marketing Worldwide

The Marketing Mix: Digital's Industry-Leading Marketing Team



Joe Cannizzaro, vice president of worldwide marketing, Components and Peripherals

"Marketing" has many definitions and many implementations. To achieve continued success, Components and Peripherals defines marketing as:

**mar•ke•ting** (már kî tîng) *1. n. a team of Digital professionals directing focused efforts on demand generation, product awareness and sales leads through innovative programs, plans, forecasts and just plain hard work, for the benefit of Digital Equipment Corporation, the Components and Peripherals Business Unit and each Line of Business (LOB).*

### Recipe for a Marketing Plan

A winning marketing plan requires the correct combination of dedicated experts working towards the worldwide success of the corporation and the Business Unit. A focused team, including LOB product marketing managers, C&P marketing program managers, territory marketing managers, and worldwide advertising and PR agencies, joins forces to focus on the LOB's marketing needs as well as contribute to this success. Also an essential part of the marketing team, cross C&P "Functional" managers are responsible for overseeing activities such as public relations, tradeshow events, training, seed units, and database and electronic marketing. This team effort was integral to C&P's ability to achieve double-digit revenue growth this year and will enable the continued success of C&P's business plans in today's dynamic marketplace.

### The Marketing Plan Process



As illustrated in the diagram above, the marketing process is based on a number of key ingredients. To begin with, each LOB

within C&P must develop a business plan. Utilizing the business plans, each LOB Product Marketing group and the international groups develop a "Worldwide Marketing Plan." The Worldwide Marketing Plan is then reviewed by C&P's marketing, sales and merchandising functions and developed into a "Worldwide Marketing Programs Plan" with C&P's worldwide advertising and marketing agency DDB Needham. After final review by the marketing, sales and merchandising groups, a dynamic, compelling and coherent plan is ready for execution in all the geographies.

### The Ingredients

The following activities — tradeshow, advertising, public relations and the people who manage them — are some of the key ingredients of a successful marketing plan.

**Worldwide Product Marketing Plan** — The strategy that drives an effective marketing program.

**Tradeshows** — Cost-effective venues for introducing new products and providing customers and industry influencers with a hands-on look at C&P's high quality, industry-leading products.

**Advertising/Integrated Marketing** — DDB Needham, a leading worldwide advertising agency, developed the "Whatever It Takes" campaign to deliver an aggressive and focused portrayal of Digital's return to industry leadership.

**Public/Consultant Relations** — Two top, high-tech PR agencies, The Weber Group and Sterling Hager Inc., develop and strengthen media and analyst/consultant relations, promote all LOBs and their products, and strengthen the Business Unit's and Digital's corporate image, internally and externally.

**Events** — Forums to strengthen and develop relationships with C&P channel partners and deliver new product and business strategy information.

**Direct Mail** — Designed, targeted mailings conducted to maintain awareness of Digital and promote new C&P products and events to a focused audience.

**Training** — In-depth sales skills and product training to strengthen and maintain the competitive edge of C&P sales force, distributors and VARs.

**Seed Units** — C&P products, such as printers, delivered to publications and industry analysts for reviews that will generate positive coverage.

**In-house Professionals** — C&P's Worldwide Marketing team. Consisting of approximately 100 dedicated, hard-working LOB Product and Functional Marketing personnel, operating in conjunction from various bases around the world.

## Global Goals

Sales is a tough job. It is an area that demands strategic planning, intestinal fortitude and vision. To let you know what 1995 holds in store for Digital, some movers and shakers within C&P's worldwide sales units were asked how they see Digital's global sales strategy evolving in 1995.



**Merchandising** — Pat Sullivan, vice president, is responsible for C&P's worldwide merchandising efforts, including managing C&P's existing distributor channels and expansions into retail.

"On a global basis, I see our sales strategies and philosophies cohesively evolving to one basic model with some variants utilized according to the laws, duties and market conditions of that specific geography. The basic philosophy and strategy is to utilize distribution partners on a level playing field, driving the dominant share of our business. This will give us a wider market to shoot for with a lower cost model to achieve our aggressive growth plans in FY 1995 and beyond."



**Americas** — Dennis Albano, vice president, is in charge of developing new and existing business for all the Lines of Business within the Americas, including the United States, Canada, Latin and South America.

"The Americas Sales teams will focus on increasing marketshare through key distribution partnerships. Our distributors will see competitively priced products supported by joint market development plans and effective lead generation programs. We will develop reseller demand through advertising, promotions, and direct marketing from a national sales force of trained channel specialists. C&P's business policy and practices will create a level playing field enabling our business partners to achieve competitive margins with minimum conflict from Digital's direct sales force. As a result, end-users will pay a fair price for C&P products whether they buy direct, through one of our partners, or from one of our retail outlets. Customers can choose their method of purchase and delivery to get continued quality service from C&P's channel development sales force. The combination of quality products, increased brand awareness, effective programs, and business relationships that make money, will drive Digital's C&P products as a force to be reckoned with in 1995."

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~ continued on page 3 ~



—Global Goals continued—



**Europe** — Jonathan Pyenson, vice president, is responsible for sales and marketing activity, operations, logistics, technical support and product management for all four Lines of Business.

"In Europe, C&P's product emphasis will continue to be sales through indirect channels. The design and skill set of C&P Europe complements this strategy by focusing on partner recruitment and management coupled with significant demand creation activity via product sales specialists and marketing communications. In early 1995, retail will emerge as a key enhancement to our channel roadmap. In contrast to the Printers and Video Lines of Business, the Technical OEM segment will be driven by our direct, dedicated and specialized sales and support team. Our strategy is to focus on significant opportunities in target markets like process control, automation and communications, where we can successfully position Digital's strong product portfolio."



**Asia Pacific** — Frank Brown, general manager, heads the sales, marketing and product management activities within the Asia Pacific rim, including such primary countries as Australia, Japan and China, for each Line of Business.

"The strategy for Asia Pacific is to provide C&P products that satisfy our existing customers and leverage the large market opportunity through the expansion of resellers. We are looking to provide competitive products for our customers and resellers through newly developed partnerships, such as HuNan in China, which will position Digital with a unique product offering to the Asia Pacific market. In 1995, our concentration will be on expanding the reseller base to reach and build a solid foundation of marketshare and revenue. The opportunity is enormous — the Asia Pacific peripheral market is estimated at \$15 billion according to ASM Computer Group Research. Digital intends to be there at the forefront, aggressively growing in a highly competitive market for years to come."

## C&P At Work

### University of Pittsburgh Finds Cost-Efficiency and Compatability With Digital PrintServers



University of Pittsburgh, Cathedral of Learning

With a staff of 10,000 and more than 30,000 students, University of Pittsburgh needed a printing solution that allowed users to obtain quality output from its 610+ personal computers, Macintosh computers and workstations. The school's UNIX/VMS network had grown to more than 30,000 active accounts making the printing process cumbersome. University of Pittsburgh looked at all the alternatives, found the solution with Digital, and have installed fifteen PrintServer 32s and a PrintServer 17/600 over the past two years.

The PrintServer 17/600 and PrintServer 32 are reliable, rugged printers designed for large environments, like University of Pittsburgh, to easily manage and operate. The PrintServer 32 is Digital's highest-volume departmental printer. Printing up to 32 impressions-per-minute, it is intended to serve departments with output up to 150,000 pages-per-month, and complex jobs such as complicated graphics, multi-font text, electronic forms, and mail messages. The PrintServer 17/600 offers power, openness and functionality in an economical, desktop-sized package. It has a 17 page-per-minute print engine and powerful controller.

"We looked at many printers and found Digital's PrintServer 32s and 17/600s were ideal for our situation. With the PrintServers we were guaranteed a smooth installation, plug-and-play capability, and hardware and software compatability," explained David Schatz, assistant to the director for computer labs at the University of Pittsburgh.

University of Pittsburgh's former system utilized Digital's PrintServer 40s. Since the system had worked efficiently for years, when it came time to upgrade, the University considered the PrintServer 17/600 and 32 among its choices, according to Schatz.

"These PrintServers are fast, efficient and produce the best quality output on campus, which our staff and students appreciate," said Schatz. "Now we can track the printing of documents much easier and control billing better. What's more, since PrintServer 32s are capable of printing double-sided pages, we are utilizing less paper."

All of PittNet's users can utilize the University's personal computers (245 of which are Digital PCs) to create everything from simple outlines and letters, to complex reports with detailed charts and graphs. Through PittNet, users can print documents at any of the PrintServers located in public computing labs situated on campus. Each print job has a banner page with the user's name on it so it is easy for the operators to sort, distribute and bill each job directly to the user's account.

According to Schatz the new PrintServers have also increased system efficiency — decreasing downtime to 3%, down from 12-14%. PrintServers enable low downtimes because staff can now change drums and perform periodic services themselves.

"We are glad to continue working with University of Pittsburgh and are pleased to be able to provide them with an ideal printing solution. To make the purchase more economical, we allowed the University to trade in its PrintServer 40s towards the purchase of the new PrintServers," noted Bernie Alimonte, channel development manager for Digital's printing products. "This is a good example of Digital's ability to offer customers products that meet their needs today and tomorrow."

"We are very pleased with the new PrintServers and will continue to look at Digital's printers in the future," said Schatz.

## Light Spot



"Look! There is intelligent life here."



# Product Spotlight

## MULTIA MultiClient Desktop



C&P's Multiclient Desktop segment of the Video Business was celebrating a highly successful launch last fall. Digital's marriage of powerful Alpha and Windows NT technologies resulted in the Multia MultiClient Desktop. Multia is the ultimate client, enabling end-users to simultaneously access and integrate multivendor PC, UNIX, and legacy applications from a single device over any network protocol. In addition, Multia's configuration manager software allows system administrators to customize and manage the Multia end-user environment from a single remote location.

"Every day, new data emerges from customers worldwide that illustrates the pressing need for a next-generation solution for the problems facing today's end-users, MIS organizations, and business managers," said Larry Cabrinety, vice president of the Components and Peripherals Business Unit. "By drawing upon the most fundamental requirements of emerging client/server architectures, Digital has developed the world's first multiclient desktop and has redefined the 'client' in client/server computing."

"The Multia MultiClient Desktop was designed to meet the needs of businesses utilizing multi-platform networks," said Vic Bellemare, business manager of C&P's Multiclient Desktop Group. "For example, an engineering office might store design programs on a UNIX server, financial information on a mainframe and financial spreadsheets on individual personal computers. Multia allows a user to open windows on all of these resources simultaneously, and easily cut and paste between them."

### Spanning The Globe

Multia's successful introduction in November was executed via one-on-one interviews with more than 50 key analyst and press contacts within the United States, generating coverage in over 50 top-tier business and computer publications worldwide, including *The New York Times*, *Wall Street Journal* and *Computerworld*. The launch of Multia surpassed the development and marketing teams' expectations and helped to add to the overflowing traffic at C&P's booth during Fall Comdex.

Complementing U.S. activities, Multia's international launch was coordinated simultaneously in the UK, France and Germany. Multia generated headlines such as:

*DEC Tries a New Form of Networking*  
— *International Herald Tribune*

*Digital Invents a New Way of Working*  
— *Le Monde Informatique*

Based on publication circulation numbers, articles from the Multia launch resulted in more than 6.4 million positive impressions for Digital worldwide and the product received praise in five key industry analyst reports.



Larry Cabrinety, vice president, Components and Peripherals Business Unit, presented with Visionary of the Year Award for Multia.

### An Award-Winning Triumph

During Fall Comdex, Multia garnered prestigious industry awards. The device won *Byte* magazine's Best of Show award for best system. This award, sponsored each year by *Byte* and the Interface Group, highlights the new generation of products that will be critical to the effective growth of the computing industry. Also, CMP Publications' president Michael Leeds presented Larry Cabrinety with CMP's Visionary of the Year award for bringing this unique product to market.

### Future Plans

The Multiclient Desktop Group is currently busy preparing to announce an extension to the Multia family. The new product will be integrated with Digital's high-performance X11.R6 server software and 3270 terminal emulator.

"The whole team is excited by the success of Multia," said Dave Kurtzer, Multia's product marketing manager. "Our dedication and hard work continues in earnest and will result in the newest addition to the Multia family in April. But we're not stopping there. There's even more that can be done with Multia. As far as we're concerned, the sky's the limit!"

### Notable Quotes

*"Overall, we think that the Multia is a hot property. The ability to remotely configure systems will have PC support managers jumping for joy. IS planners ... will find the Multia a blessing."*

— Client/Server Today

*"System administrators will find a hidden gem inside DEC's new Multia multiclient desktop..."*

— Computerworld

*"Multia ... could provide a structure that bridges the gap between terminals, PCs, and workstations and represents the best of all worlds."*

— International Data Corporation

*"It is time for a new-generation desktop computing platform to emerge in order to support a new generation of applications. The multiclient desktop, as defined by Digital's Multia Desktop, is that new platform."*

— Patricia Seybold Group

# Blue Ribbons

In 1994, C&P products were recognized for great achievements. Congratulations to those involved in these accomplishments.



DECcolorwriter 520ic — Byte magazine's Best Quality/Best Overall Printer



DECcolorwriter 1000 — PC Magazine's Editors' Choice Award



Multia — Byte magazine's Best of Show/Comdex

### —Marketing Worldwide continued—

"C&P Marketing effectively mixes all the necessary ingredients together to deliver a dynamic, unbeatable, globe-spanning marketing program," said Joe Cannizzaro, vice president, Worldwide Marketing, C&P Business Unit. "None of our wins or successes could have been possible without the hard work of these first-class professionals."

### C&P Marketing/Merchandising and Sales — The New Distribution Model

The Components and Peripherals Business Unit currently generates approximately 70% of its revenue through resellers. To support this critical channel, C&P is refining its "commercial (two-tier) distribution" business model to continue generating end-user demand while supporting the needs of C&P's commercial and industrial distributors, VARs and retailers. For example, C&P developed Marketing Development Funds to assist distributors and retailers in promoting Digital products.

"C&P's strategy is to continue to effectively penetrate worldwide markets by developing innovative avenues for promoting itself and the corporation," added Cannizzaro. "The marketing team will continue to work closely with the LOBs, merchandising and sales organizations worldwide to enable C&P to meet the demands of a constantly evolving industry."



# What's Going On...

## Xerox Partnership

Digital and Xerox Corporation recently signed a \$4.3 million contract to provide Anchorage Telephone Utility with Digital's VAX 4600 systems and a Xerox 4890 color printer. The partnership resulted from the Enterprise Production Printing (EPP) Strategic Alliance, which provides joint sales, marketing, customer support and cooperative engineering development to enable Digital and Xerox to better serve customers.

## HuNan

The Video Terminals Line of Business signed a \$20 million contract with HuNan Computer Factory, China's leading manufacturer and supplier of text terminals. Under terms of the agreement, over the next three years HuNan will manufacture 100,000 text terminals with Digital's ASIC, monitors and keyboards, and HuNan logic boards. This new partnership is expected to employ other Digital technologies in the near future.

## Scan-Tech '94

The Video Line of Business showcased its BTL (Between-the-Lines) family of bar code readers and the DECTouch touch screen device at Scan-Tech '94. Scan-Tech, the largest tradeshow serving the automatic ID



From left to right, John Gaucher, Product Manager and Jim Zeisler, Digital Technology Sales Support

industry, was held in Chicago during November. DECTouch was featured in the show's New Product Showcase — a high-profile display dedicated to exciting new technologies. Jane Gallagher, marketing manager, Video Terminals Business reported that the trade press was impressed with the product lines as well as Digital's plans for future devices. "One editor remarked that these devices are key to Digital's total computing solution," said Gallagher.

## Expansions In Retail

Strengthening its channels of distribution, C&P's Merchandising team added 560 Sears and Circuit City outlets to Digital's growing list of retail partners in late October. Under the agreement the stores will sell the DECcolorwriter 520ic color ink-jet printer.

C&P's impressive list of leading retailers now includes 1300+ outlets nationwide. Included are, CompUSA, Fry's Electronics, Lechmere, OfficeMax Inc., Sun TV, Tops Appliance, BrandsMart, Roberds, American TV, Elek-Tek, Ultimate Electronics, The Good Guys, and Target Stores.

## Warranty Program

During Fall Comdex, C&P announced its Authorized Warranty Service Provider (AWSP) Program, for retailers and VARS. Aimed at enhancing customer support through better relations with resellers, AWSP enables resellers to be reimbursed directly as Digital customers. Products currently covered by the program include printers, text and X Window terminals, as well as the new Multia MultiClient Desktop device.

## IBM Agreement

The Realtime Engineering Group joined forces with IBM to expand the group's capabilities to produce microkernel-based solutions for the embedded, real-time, desktop and next generation environments. Under the terms of the agreement, Digital adapts IBM's microkernel technology for use in real-time and embedded applications and is able to provide users with product advantages, such as a richer software development environment and faster time-to-market. The Digital and IBM union helps both companies open their computing platforms to third-party suppliers.

## Radius and Tadpole Contracts

New agreements have been signed by the Global Contract Manufacturing Services of the Component OEM Line of Business with Radius, Inc. and Tadpole Technology enabling Digital to build Radius' graphics accelerator cards for the PC market, and Tadpole's communications cards.

"Radius is leveraging the full range of Digital's value-added services," according to Mary Godwin, Radius' director of operations. "Digital has played an integral role in virtually every stage of the manufacturing cycle — from implementing design for manufacturability to providing repair services."

## Bager Electronics

Bager Electronics, a leading southwest manufacturers' representative with more than 15 years of electronics service and sales experience, has joined the expanding list of Digital's key business partners. Bager will market Digital's contract manufacturing services to OEM prospects in metro areas in California, Arizona and New Mexico. "As an OEM offering contract manufacturing services, Digital understands and is able to meet the needs of our OEM targets in the Southwest," said Mike Baghranian, president and founder of Bager Electronics.

## Corel Partnership

In an innovative marketing move, Digital partnered with Corel Corporation to bundle two of its printers with Corel Corporation's leading PC graphics software package. The DECwriter 500i printer will be available with CorelDRAW 3, the DECcolorwriter 1000 printer with CorelDRAW 4. Upon proof of printer purchase, Corel will forward the appropriate software package in a 3.5 inch diskette or CD-ROM format.

"Users will see the difference a high-quality printer makes when CorelDRAW graphic designs begin rolling off Digital's printers," said Dr. Michael Cowpland, president and chief executive officer, Corel Corporation.

# New Hires Around The World

## Jonathan Pyenson, vice president, C&P Europe



Jonathan Pyenson has been named vice president of C&P Europe to direct the Europe office in meeting business and profit goals. Pyenson will be responsible for sales and marketing activity, operations,

logistics, technical support and product management for all C&P Lines of Business in Europe. Until his appointment in September, Pyenson was with M/A-COM, Inc. where he was worldwide director of sales and marketing for its semiconductor products division.

## Jeb Hurley, director of marketing and business operations, Printer Business



Jeb Hurley joined Digital last spring to supervise product and marketing operations of Digital's printing products and accessories. His responsibilities include shaping the marketing strategies and developing innovative sales programs.

According to Hurley, "the position offers the chance to leverage incredible technology into a very successful business." Prior to Digital, Hurley was director of product management and planning for Okidata Corporation.

## SPOTlight

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SPOTlight is published by Components & Peripherals Business Unit, Digital Equipment Corporation, Marlboro, Massachusetts.

Those interested in submitting material to SPOTlight should send it to Joe Cannizzaro, Editor-in-Chief, via E-Mail — MROA::Cannizzaro or he can be reached at — DTN 297-6874

## Looking for Literature?

For those in need of additional information, check your local literature center or order through the Main Literature Center via the Digital Network (VTX):

1. Log on
2. At the "C" prompt type in 'VTX-LOS'
3. Answer the questions that follow

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# In The News... Special Report: COMDEX '94

## Digital's Honeymoon In Vegas!



Components and Peripherals' Booth at Comdex '94

A bright star was shining at Fall Comdex 94 in Las Vegas, NV and its name was Digital. Comdex, the industry's most influential tradeshow, was held at the Las Vegas Convention Center from November 14-18 and proved to be the most successful exhibit C&P had in recent years. As proof that the industry is taking note of the "new" Digital, there was heavy booth traffic, which produced record-setting leads.

"The interest generated at Fall Comdex was incredible," says Gwyn Thakur, marketing support programs manager, Worldwide Marketing, C&P Business Unit. "An innovative booth design displayed our full line of industry-leading products and helped us generate 25% more responses than anticipated."

### Booth Activities

The Components and Peripherals Exhibit located in the North Hall, overflowed with visitors straining to view C&P's product demonstrations, especially Multia, the ultimate desktop client. Also generating tremendous interest were Digital's advanced printing solutions, such as DEClaser 3500, DECcolorwriter 520ic and DECwriter 90ip; members of the Dorio and VT500 family of text terminals; the entire BTL family of bar code readers; and, Digital's latest industry-leading product, FullVideo Interactive MPEG Playback System — a family of board-level PC enhancement hardware products that provides full-screen, full-motion, TV-like video to desktop systems.

The Printer Business netted over 50% of the show leads, while the Video Business pulled in more than 35%, with Multia accountable for half of those inquiries. The record-setting number of leads was double from the previous year.

### Off The Show Floor

Special events began and ended the busy days. A customer gathering at Liberace's Villa featured appearances by Dolly Parton, Marilyn Monroe, Michael Jackson and Liberace look-a-likes. This night-time event helped clinch major deals for C&P, as well as provided Digital customers with an opportunity to further open communication channels with their Digital representatives.

Another high profile event, the Multia VAR breakfast hosted by C&P and CMP Publications, drew a crowd of 500 existing and potential customers. Presentations were given by Curtis Franklin, technology editor of *VARBusiness*, Michael Goulde, consultant with Patricia Seybold Group, Brian Fitzgerald, vice president of Video Business, and Patrick Sullivan, vice president of Merchandising. Topping off the presentations was the Visionary Award presented to C&P's vice president Larry Cabrinety by CMP president, Michael Leeds. The award was in recognition of Cabrinety's foresight and engineering expertise in developing Multia.

### Publicity

Its outstanding products also enabled C&P to generate excellent press coverage and schedule meetings with over 60 analysts and editors. Televised previews of the Digital booth, as well as interviews with C&P representatives, appeared on Comdex TV during the show. Spots featured a tour of the C&P booth with Joe Cannizzaro, vice president of C&P Worldwide Marketing, an introduction to Multia with Dave Kurtzer, product marketing manager, and a special viewing of the VAR breakfast.

Industry Report, an independent TV news magazine, interviewed Pat Sullivan about Digital's new printers for a cable TV spot. The half hour program will air on the USA Cable Network, as well as via satellite, to 750 television stations, in more than 70 million households in early 1995.

Thanks to the planning and foresight of Digital C&P's Comdex planning committee, in one fell swoop, Digital strengthened relationships with customers, resellers and key influencers, while impressing its aggressive attitude upon the industry. As one reseller said, "Digital is back."

# In The News...

## FullVideo Interactive MPEG Playback System

Late this fall, C&P burst into the retail multimedia PC market with its new FullVideo Family of Products. The FullVideo Interactive MPEG Playback Systems are full-screen PC enhancement kits that target the home entertainment and business markets. The system enables users to access educational and reference materials, interactive games, movies and music videos directly from a personal computer. The system also provides access to interactive corporate training, video information kiosks, video demonstrations, and CD catalogs. The FullVideo product line is currently available through retailers such as BrandsMart, Fry's Electronics and Lechmere.

- FullVideo Interactive MPEG Playback System, a complete multimedia upgrade solution for a PC with 16-bit stereo sound and CD-ROM controller, internal double-speed CD-ROM drive and stereo speakers includes 15 titles.
- FullVideo Elite, an MPEG video decompression playback card includes 13 titles.

Additions to the FullVideo line are scheduled for Fall 1995.

## OEMbedded First Program

The Component OEM Group launched the OEMbedded First Program, an aggressive incentive program that allows OEMs to access Alpha AXP 64-bit RISC technology at all levels of integration. Designed to minimize the investment risk of OEMs, as well as attract new markets, this program offers the industry's most competitive price/performance. Three support programs include:

1. Rapid technology acquisition
2. Integration and contract manufacturing services
3. Market development resources

## Expansions to Printer Family

### DEClaser 3500

The Printer Line of Business took its first step into the multi-function printer market with the release of the DEClaser 3500. This 12 page-per-minute network printer features an international faxing capability. Targeted to small-to medium-size workgroups who need to print and fax professional-looking documents quickly and affordably, the DEClaser 3500 provides outstanding resolution and superior reliability to the rapidly growing global workforce.



### DECcolorwriter 120ic/DECwriter 110i

Grabbing headlines by aggressively challenging Hewlett-Packard, the Printer Line of Business introduced the industry's lowest cost color ink-jet printer, the DECcolorwriter 120ic, and the lowest-cost color capable ink-jet printer, the DECwriter 110i, in late October. Providing color "Write Out-of-the-Box," the DECcolorwriter 120ic does not require users to purchase a separate color kit. Both printers also feature the speed and quality output required by home and small office users.



### DECwriter 90ip

The Printer Line of Business also successfully introduced the industry's smallest, lightest-weight portable ink-jet printer, the DECwriter 90ip printer, at Fall Comdex. The DECwriter 90ip increases productivity by enabling workers to quickly generate quality output such as last minute slides for a presentation or additions to proposals, in virtually any environment — on the road, in the office and at home.



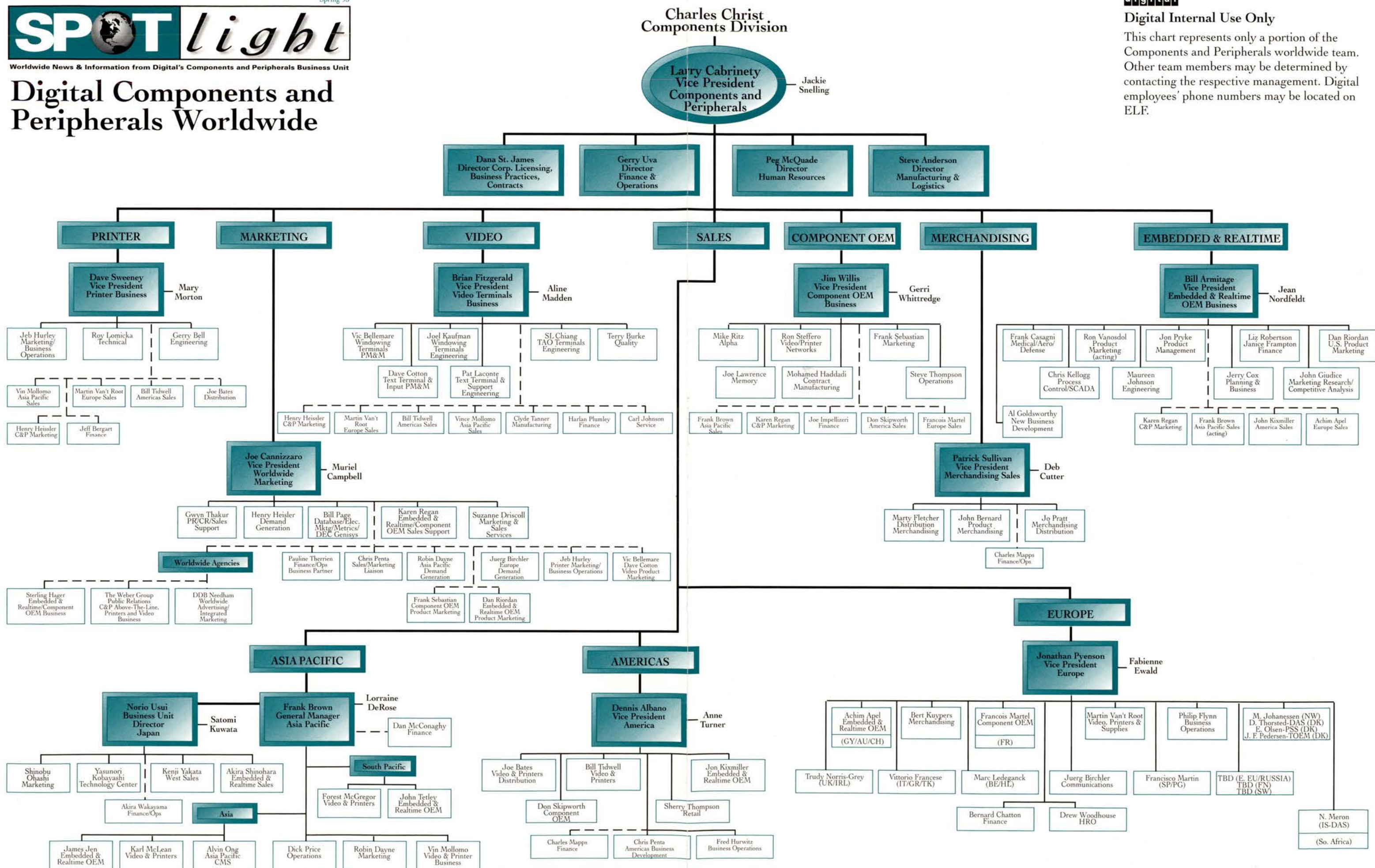


# Digital Components and Peripherals Worldwide

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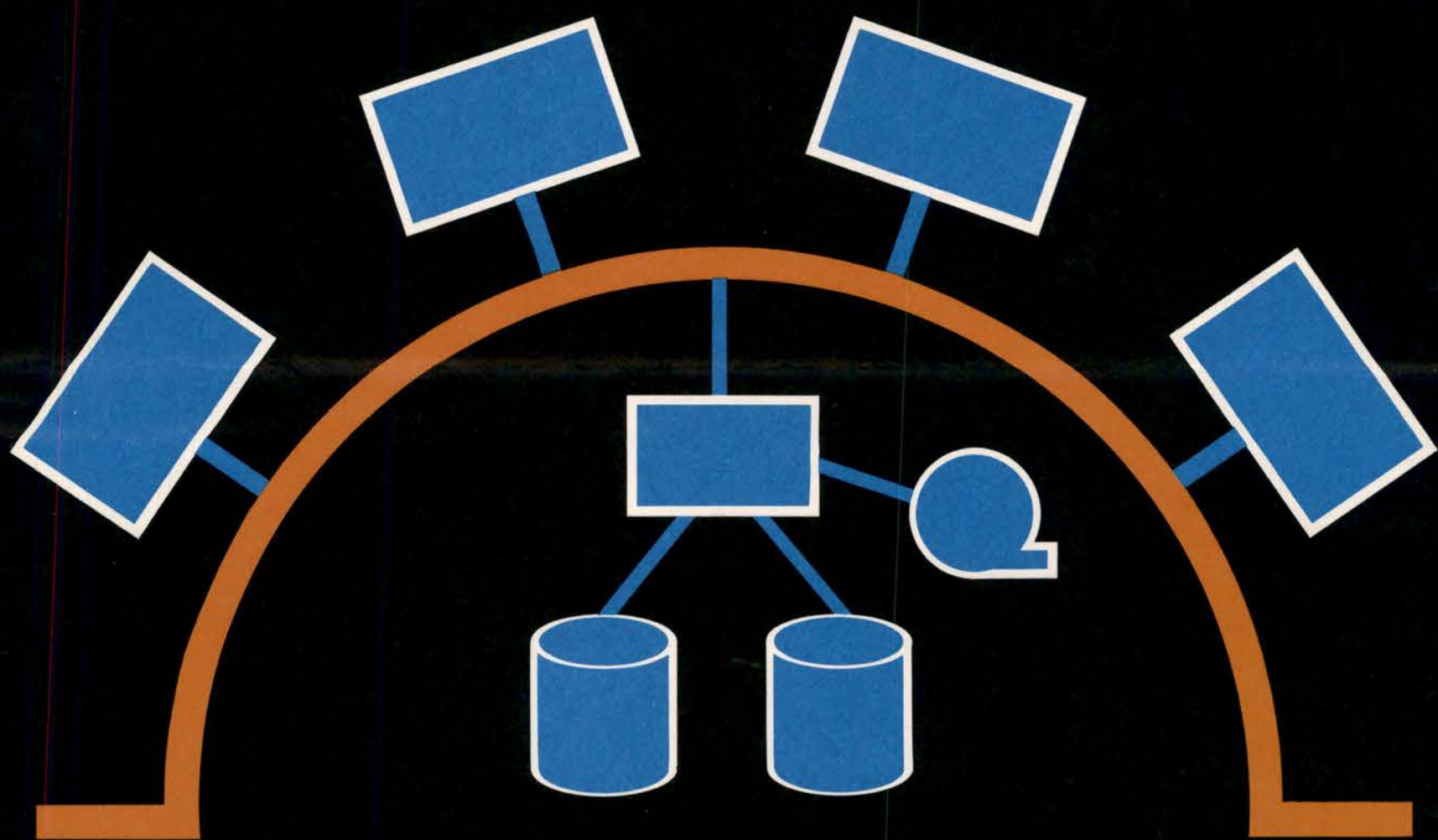
Digital Internal Use Only

This chart represents only a portion of the Components and Peripherals worldwide team. Other team members may be determined by contacting the respective management. Digital employees' phone numbers may be located on ELF.



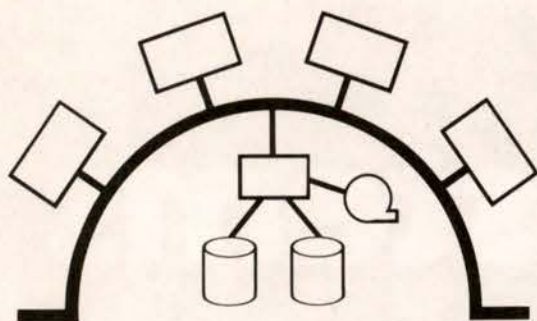


## VAXcluster Systems



## The New Way to Grow Systems





**Sell the  
Concept—  
the concept  
will sell the  
systems!**

## ■ Concepts

The intent of *The Concepts Newsletter* is to present the conceptual information required in conducting your day-to-day sales activities. The information is presented in a clear and concise manner. It is easy to read and easy to retain. *The Concepts Newsletter* is NOT intended to replace or mirror any present publication.

This first issue of *The Concepts Newsletter* addresses the various questions that may arise when preparing a VAXcluster Pre-sales presentation. There is no specific article covering all the items. Instead you will find different areas covered throughout the issue.

### **Sell VAXclusters As A Team**

The Team approach is especially important today, given the various issues that can arise when dealing with VAXclusters. Together, Sales, Field Service, Software Services and Educational Services have the ability to respond to the broad spectrum of customer needs.

Sell VAXcluster as a concept in high-end computing. If your customer buys the VAXcluster Concept system and add on orders will follow. The VAXcluster concept is unique; Only Digital and *you* have anything like VAXclusters.

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# VAXcluster Systems Products and Program

The VAXcluster Systems Announcement encompasses both a product announcement and a program announcement. As stated by Dave Chanoux in the *Sales Update, Special Issue, April 25, 1983*, VAXcluster systems will help customers solve today's problems while helping them plan for the future.

The full capabilities of the VAXcluster system are being implemented over a period of time, using a phased approach. The first phase deals with those products that are available immediately or in the near future: CI780, CI750, HSC50, SC008, VAX/VMS 3.3, and VAX/VMS 3.4. Future phases of the program will include enhanced versions of VAX/VMS and will increase the functionality of the VAXcluster system and provide many additional benefits.

## VAXcluster Systems Products for Today's Needs

The Product Segment of the VAXcluster System Announcement provides immediate solutions to meet today's customer requirements. The products will benefit those customers concerned with:

- Many users needing shared access to common data files.
- Degradation of system response time.
- Loss of user/programmer productivity due to accidental interrupts or misuse of system commands.
- Ease of adding users without the need to add additional systems.

Some features/benefits of the VAXcluster system that address these concerns follow.

### Modular Growth

VAXcluster systems permit expansion of the configuration as needed without interruption of the existing systems or programs. This expansion can range from adding users to adding an entire processor (node).

For today's multiple VAX customers this growth could begin immediately by configuring a VAXcluster system with a CI780-SA Starter Kit. Detailed information on all the VAXcluster system components and prices can be found in the *Sales Update, Special Issue, April 25, 1983*, Appendix A and the *VAXcluster Announcement Package*.

### Common Information Access

The VAXcluster system allows sharing of disk data by giving all CPUs of the VAXcluster system direct access to the files. This is accomplished by using the latest technological advances in hardware and software.

There are certain restrictions with VMS 3.3 and 3.4, so it is important to check the *Sales*

*Update, Special Issue, April 25, 1983*, pages 15-25. It is also important to begin working early with your local Services Support Representative.

### Increased Capacity

Over 10 gigabytes of disk storage per HSC50 is possible with a VAXcluster system. This, coupled with the newly announced capability for 32 megabytes of main memory on the VAX-11/780, creates a VAXcluster system with huge amounts of main memory, data storage and compute power. A configuration with over 100 gigabytes of disk storage on a single system is also possible. This is more storage than is available on any single super mini computer system.

These features/benefits are only a small sample of how a VAXcluster system can meet today's requirements. Additional application examples can be found in the *Sales Update, Special Issue, April 25, 1983*, pages 42-54. There is also an interesting and informative customer testimonial by NASA Ames in the May issue of *Sales Journal* (Corporate Sales Training).

## VAXcluster System Building Blocks

The VAXcluster is the new way to grow systems, and VAXcluster Building Blocks provide the new flexible way to configure systems. The system Building Blocks approach lets customers tailor the VAXcluster to better meet their needs. It provides a series of menus to select from, including Processor, Load Device, System Device, Terminal, Communication Interface, and Software Warranty. A summary of the VAXcluster system Building Blocks prices and availability is presented in the *Sales Update, Special Issue, April 25, 1983*, pages 62-65. In the same *Sales Update*, pages 32-37, is an article covering the various menus and software warranty issues. Additional information on system configurations can be found in the *Press Release Article* elsewhere in this issue.

## VAXcluster Systems— A Program for the Future

The program element of the announcement provides the time needed for both you and your customer to learn about and plan for VAXcluster systems. It is designed to provide the necessary lead time to effectively integrate the VAXcluster system into your customer's long range computer strategies. Some of these benefits are:

### Higher Availability

Redundant hardware features and sophisticated VMS software enhance the system

operation and provide continuous access of data while protecting its integrity.

A list of these features can be found in the *Sales Update, Special Issue, April 25, 1983* Overview Article and the *VAXcluster Technical Summary*.

### Growth with Protection of Current Investment

The current investment is preserved because the existing system can be expanded beyond its individual (architectural) limits with a VAXcluster system. Add only as much processing power or storage as needed.

A new customer can begin with a single system and add to it without fear of it becoming obsolete.

### Data Integrity

Future releases of VMS will provide increased data integrity and increased file access. The many features/benefits of these releases are summarized in the *Sales Update, Special Issue, April 25, 1983*, pages 15-25.

## VAXcluster Systems— What About Them?

The VAXcluster System Announcement will raise many questions, such as:

- Does a VAXcluster system offer 100% one stop computing?
- How do VAXcluster compare to LAN?
- Will all existing VAX/VMS functionality operate cluster-wide?

These and more common questions and their associated answers have been collected and can be found in *Sales Update, Special Issue, April 25, 1983*, Appendix C.

## Sales Materials and Aids

There is an excellent VAXcluster System Customer Slide Presentation available. It was developed to help in presenting the various features and benefits of a VAXcluster system. Information on what is contained in the Slide Package and where it is most applicable can be found elsewhere in this paper. The Order Number and ordering instructions will be published in the June 20, 1983 issue of *Sales Update*.

An Announcement Package has been distributed to each sales person via the local Literature Contact/Sales Communication Center (SCC). The contents of the Package and other available material can be found in the *Sales Update, Special Issue, April 25, 1983*, Appendix B.



# Press Release 1

Two Press Releases were issued on April 26, 1983 and chances are you may be contacted to explain some of the contents. Below is a copy of the Press Releases and some comments to help you respond to calls and direct you to literature that will help you and your customer understand this new "cluster" concept as it applies to VAX Products.

## Digital Announces New 'VAXcluster' Concept for Computer Systems

MAYNARD, Mass., April 26, 1983 Digital Equipment Corporation today introduced a new concept in high-capacity computing for VAX computer systems, offering greatly increased levels of computing power, storage capacity, user support, and system availability. Called VAXcluster, the new multisystem technology permits a configuration of up to 16 VAX-11/780, VAX-11/782, and VAX-11/750 computers and intelligent storage subsystems to function outwardly as a single, large, highly powerful system.

David Chanoux, VAX Systems Product Manager, called the new VAXcluster system concept "the most innovative, efficient, and achievable path to high-performance, high-capacity computing in the industry. This new systems approach offers cluster-wide data sharing and software tools to ensure data integrity and higher system availability. It is, in simplest form, the new way to grow systems."

**1** VAXcluster systems will enable users to access data stored anywhere in the cluster as if they were local, avoiding the delays and software overhead of conventional network transmission.

**1** This means that no matter where the disks are attached, either to any of the VAX host processors or to the intelligent mass storage device, the data is available to any user connected to any of the VAX processors, as if the storage were local. The system level protocol of a VAXcluster system is much more efficient and responsive than a Wide Area Network Protocol since it deals with a limited number of processors and storage controllers that are hardwired on the redundant CI cables with a maximum of 90 meters distance. (See Sales Update, Special Issue, April 25, 1983, pages 15-19. Send customer VAXcluster Technical Summary and VAXcluster Product Brochures.)

**2** Cluster configurations will also support external and internal communication through DECnet interfaces and local-area, multiple-device access across Ethernet links.

**2** This means that under Digital Network Architecture (DNA) any of the currently available methods or anticipated methods to link to other hosts, foreign or the same vendor, or other clusters is supported. For example, you can use DMR's, DMF's, DUP's to interface to any one of the VAX host processors or you can configure all VAX host processors on an Ethernet whether they are part of a VAXcluster or not. A user can logically connect to individual processors in the VAXcluster or in the Wide Area Network.

In addition it should be noted that terminals can be connected to the VAX host by using conventional methods, such as DZ's or DMF's, or you can front-end the VAX host processor with a communication switch.

In summary you have access to all the data in a cluster, no matter where you connect to it.

(See Sales Update, Special Issue, April 25, 1983. Send VAXcluster Technical Summary and the VAXcluster Product Brochures.)

VAXcluster systems are designed for interactive and batch applications in commercial and educational fields involving large databases and timesharing for large numbers of terminal users. In engineering and scientific areas VAXcluster systems will improve performance in data acquisition and reduction, statistical and structural analysis, and multi-user, interactive design projects requiring large programs, storage capacity, and much compute-intensive activity.

### VAXcluster Components

Hardware components of a VAXcluster system include VAX-11/780, VAX-11/782, and VAX-11/750 processors; a dual-path

Computer Interconnect (CI) bus; an intelligent CI interface for each processor; a Star Coupler for physical interconnection of processors and storage subsystems; and a mass storage controller, which consists of an HSC50 intelligent subsystem with associated disk storage devices.

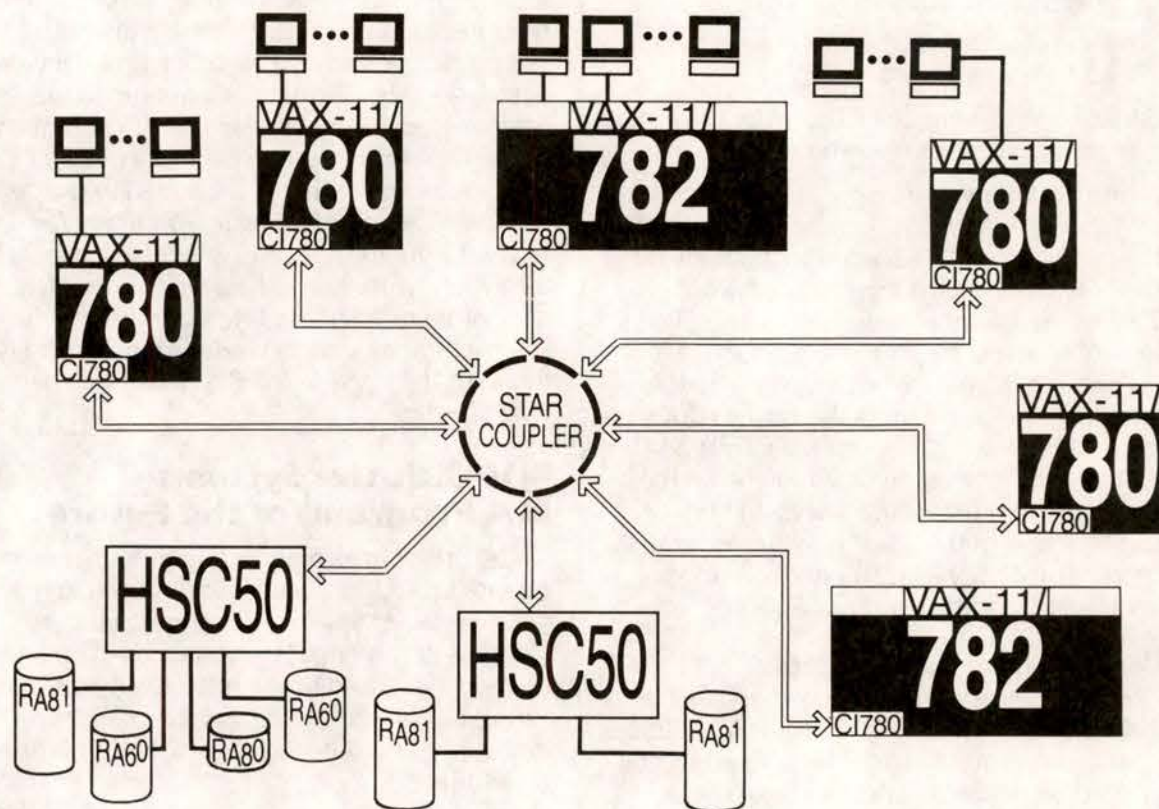
**3** Cluster operation will be managed under new versions of the VMS operating system to be released beginning this spring. The first phase will include two releases of VMS software: the first release supports clusters of VAX-11/780 and VAX-11/782 processors and HSC50 subsystems with RA60/RA80/RA81 disk storage; each HSC50 controller supports up to four processors.

### 3 VAX/VMS (May, 1983)

For example, you could build a cluster with twelve (12) VAX-11/780s and three (3) HSC50s for a total of 15 nodes.

Later offerings of VAXclusters will provide storage access for more than four (4) processors per HSC50.

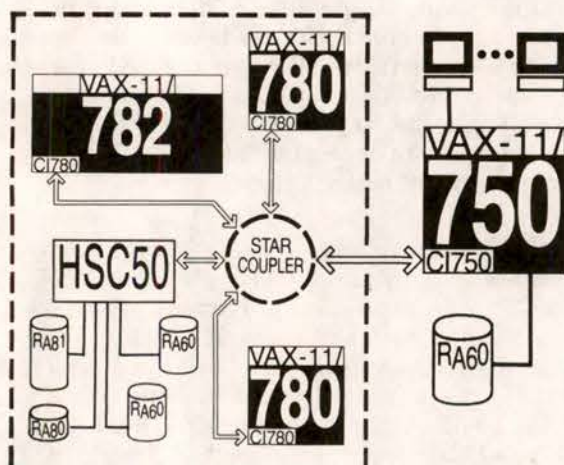
(See Sales Update, Special Issue, April 25, 1983.)





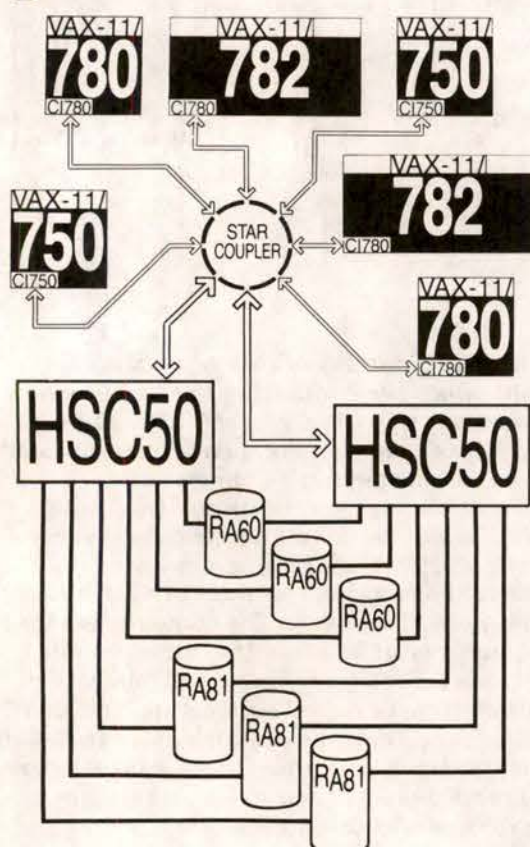
**4** The second release extends support to the VAX-11/750 processor.

**4** VAX/VMS (August, 1983)



**5** Future releases of VMS software will take full advantage of the VAXcluster potential for data protection and fault tolerance. They will provide the capability to survive and reconfigure around the failure of individual nodes, as well as facilities to ensure that data stored in a cluster remains in a known state. The combination of these features will allow users to develop environments with high levels of both availability and integrity of data files.

**5** Future VAX/VMS

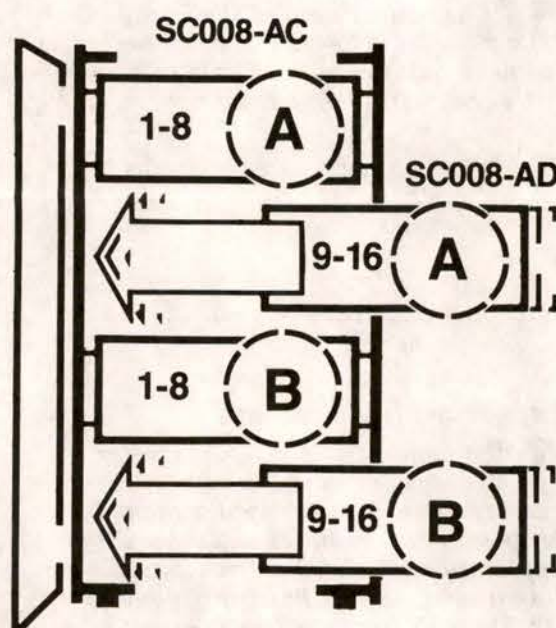


### Prices, Delivery

**6** The CI780 interface for the VAX-11/780 and VAX-11/782 systems is priced at \$19,500; CI cable sets vary in price according to length. The Star Coupler, equipped to receive eight nodes, is priced at \$7,500; an upgrade kit for expansion to 9-16 nodes is \$5,500. All of the above components are in current shipment.

### 6 Star Coupler (SC008)

Provides support for 16 nodes in one cabinet. (See VAX Computer Interconnect Products Brochure.)



Both 'A' and 'B' provide the redundant feature of the "Star coupler".

The Star Coupler forms the hub of the VAXcluster system and as such could be viewed as a possible single point of failure. It is the design of the Star Coupler (passive device with dual CI path and electrical isolation between nodes) that prevents such failures.

**7** The CI750 interface for VAX-11/750 systems, including cabinet, is priced at \$18,500; deliveries will begin in September. Price for the HSC50 intelligent storage controller is \$32,500, with disk channels set at \$7,100 each. First deliveries are scheduled for June.

**7** The VAX-11/750 requires the addition of an expansion cabinet to house the 10½" CI750 interface.

(See Sales Update, Special Issue, April 25, 1983. Send VAX Computer Interconnect Products Brochure.)

**8** A series of "system building blocks", including VAX-11/780 or VAX-11/782 processors, basic VAXcluster components, and a choice of disk options, is offered to simplify configuration procedures and for flexibility in choosing mass storage devices. Each "building block" configuration includes a VMS operating system license; as required, customers can obtain documentation and media for \$2,640 and a package including installation, 90-day warranty, and training credits for \$7,360.

**8** This provides the ability to add diskless VAXs to a VAXcluster system. VAX-11/780's and VAX-11/782's do not require a local system disk, the system disk which is owned by the processor can be on the HSC50 and the system is booted from this disk. In the case of the VAX-11/750, a local disk is required for booting VMS. This restriction will be lifted in the future.

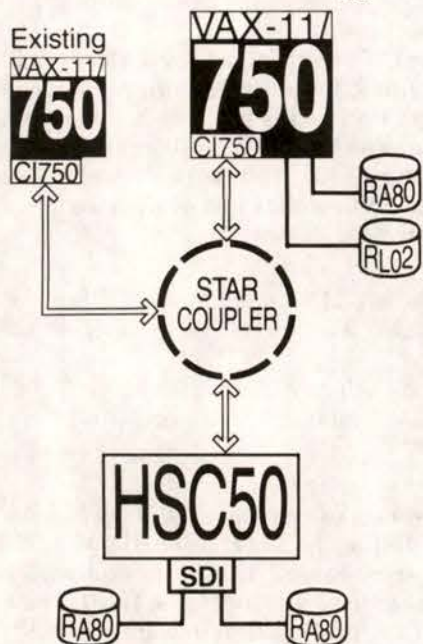
(See Sales Update, Special Issue, April 25, 1983. pages 32-37. Send customer VAXcluster Technical Summary and VAXcluster Product Brochure.)



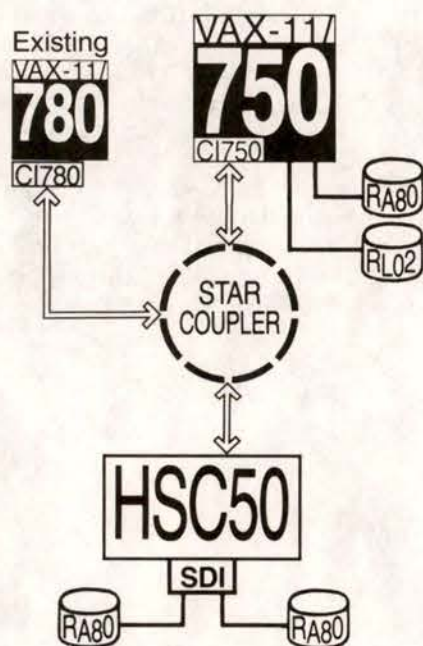
**9** Existing VAX-11/780 or VAX-11/750 configurations can be upgraded to VAXcluster systems for prices beginning under \$200,000. An entry-level, VAX-11/750-based VAXcluster system can be purchased for less than \$300,000.

VMS Version 3.3, which provides hardware support for clusters of VAX-11/780 and VAX-11/782 processors and shared access to the HSC50 subsystem with RA60, RA80, and RA81 disk storage, will be available in May. Version 3.4, which extends support to include VAX-11/750 processors, will begin delivery in August.

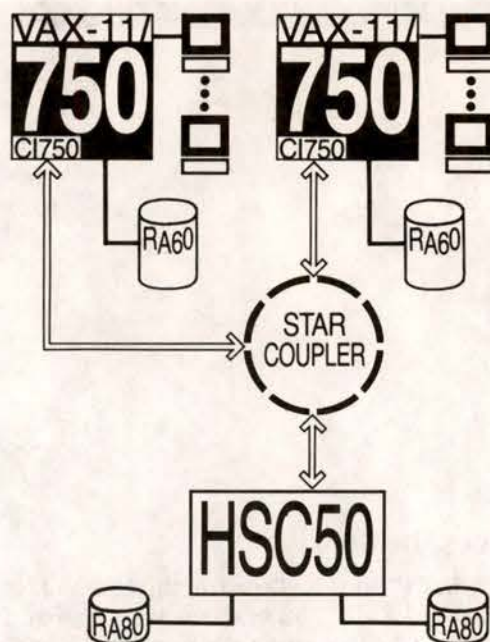
#### Cost Breakdown VAXcluster Upgrade



CI750 STARTER KIT	39.5K
HSC50	31.5K
SDI	7.1K
2xRA80	28.0K
750 RA80/RL02	84.9K
	191.0K



CI780	19.5K
SC	7.5K
CI750	18.5K
HSC50	31.5K
SDI	7.1K
2xRA80	28.0K
750 RA80/RL02	84.9K
	197.0K



**9** Entry-level configuration for Digital's new VAXcluster system for the VAX-11/750 will incorporate two (2) VAX-11/750 processors running under VAX/VMS Version 3.4. The configuration includes CI750 interfaces and local, 205-megabyte RA60 disk drives for each processor, CI cables, Star Coupler, HSC50 mass storage controller, and two (2) 121-megabyte RA80 disk units.

**10** Announcement of the next phase of the VAXcluster program, including the next major release of VMS software, will occur within nine months.

**10** The next phase will be announced in 6-9 months and at this time the availability and functional content of the next release will be defined.

(See Sales Update, Special Issue, April 25, 1983 VAXcluster Feature Support page 25. Send customer VAXcluster Technical Summary.)

#### Preserves Investments

**11** Chanoux said that VAXcluster technology offers both new and present customers vastly increased support for large user communities, databases, and applications without sacrificing existing investments in VAX hardware or software.

"The VAX family offers the most popular and proven hardware and software products in the superminicomputer field," he said. "The VAX-11/780 computer is regarded as the standard for superminicomputers for a wide variety of technical and commercial disciplines. VAXcluster systems now build on the solid and successful investments in VAX technology that both Digital and our customers have made."

**11** Adding a CI780, Star Coupler, and another VAX provides the extra power of another processor with access to the existing files and programs on the existing VAX.

(See Sales Update, Special Issue, April 25, 1983 pages 32-37. Send customer VAXcluster System Building Block Excerpts.)

**12** "Currently installed VAX-11/750, VAX-11/780, and VAX-11/782 processors and MASSBUS disk systems can be configured in a cluster," Chanoux said. "The customer can begin with a single processor and one disk on an HSC50 controller

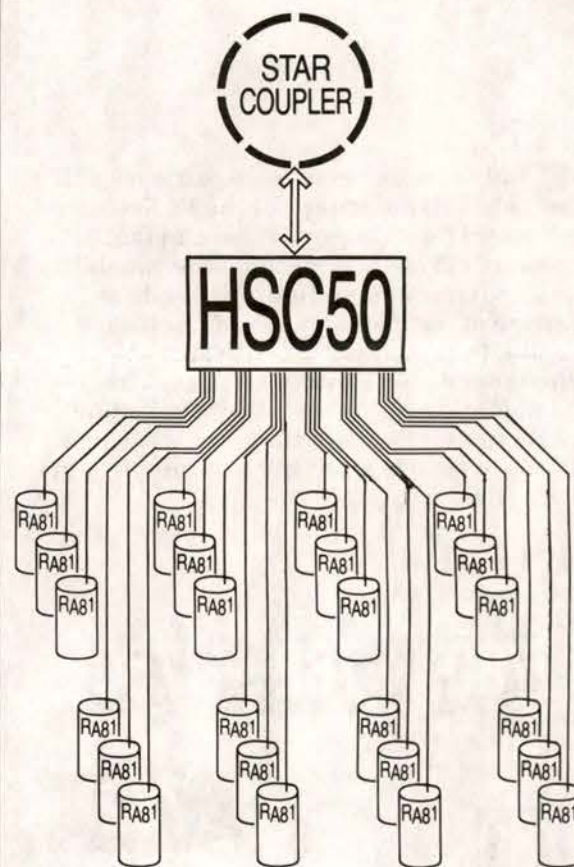
and then grow with additional processors, disks, tapes or multiple HSC50s for enhanced performance, capacity, and availability."

**12** Add memory, storage or processors as your user demand increases. A system manager can plan the system's growth based on the user community characteristics.

**13** "A VAXcluster system can hold more than 10 gigabytes of disk space on each HSC50 controller, and configurations with more than 100 gigabytes of disk storage are possible. Also, with 64K RAM memory now available on the VAX-11/780, each processor can accommodate up to 32 megabytes of main memory.

**13** A disk channel supports four (4) disks and six (6) channels can be attached to an HSC50, so with an RA81 at 456 megabytes more than 10 gigabytes can be attached to any HSC50. These can be housed in 8 disk storage cabinets.

(See Sales Update, Special Issue, April 25, 1983 page 29-31. Storage Systems Slide Presentations EA-24452-18. Send customer HSC50 Brochure.)



Multiple systems of this capacity offer many times the computing power of a single processor with far greater efficiency and much less cost than independent systems of equal total capacity," Chanoux said.

Digital Equipment Corporation, headquartered in Maynard, Massachusetts, is second in the world in computer sales based on reported operating revenues of \$3.9 billion for its 1982 fiscal year. The company is a leading supplier of information management systems for office, factory, and laboratory automation, personal computing, and small businesses. Digital maintains more than 400 sales, service, manufacturing, and engineering facilities in 39 countries and employs more than 67,000 worldwide.



# Press Release 2

## New Hardware, Software Products Boost VAXcluster Performance

**A** MAYNARD, Mass., April 26, 1983  
The new VAXcluster system introduced today by Digital Equipment Corporation is a loosely coupled multiprocessor system with globally shared data that combines advanced hardware and software technology for high performance, improved availability, increased user access, and cost-efficient storage. A VAXcluster system contains as many as 16 VAX-11/780, VAX-11/782, and VAX-11/750 processors and storage subsystems, linked by a high-speed, dual-path Computer Interconnect (CI) bus.

**A** Basically this means that DIGITAL provides the hardware and software components to permit the assembly of a very powerful system that appears to the user as a single system and to the system manager as a controllable, tunable cost effective resource to satisfy the needs of a large, changing user community.

**B** The loosely coupled multiprocessor design was chosen to achieve Digital's goals of easy, modular system growth, support for more users, and increased availability and survivability in the event of component failure. The use of a message-oriented interconnect facilitates the building of cost-effective systems over a wide range of numbers of processors and storage systems. Also, the use of multiple copies of the operating system in a loosely coupled configuration enables the VAXcluster system to survive a host computer, disk controller, or disk disruption.

**B** The system manager of a VAXcluster will have software tools within future releases of VAX/VMS that makes the system management task in a multiprocessor environment far easier. The VMS Operating System has been extended to manage a multiprocessor environment.

### VMS Features, Directions

VMS operating system software is integral to the operation of the new VAXcluster system, and is a key component of the cluster architecture.

**C** VMS software implements facilities that provide enhanced system availability, multisystem file and record sharing, and the ability to accept new processors and mass storage to the cluster as needs arise.

**C** Processors, mass storage controllers and disks can be added or removed from the system without interrupting the operations of the system.

**D** Future releases of VMS software will contain sophisticated facilities for ensuring cluster-wide data access, integrity, and availability, even in the event of a system failure. VMS software will provide global data sharing through a distributed file system that extends file-level access to all disk storage, a distributed lock management facility that synchronizes file access, and a mass storage protocol that gives cluster access to locally connect mass storage. VAX-11 RMS (Record Management System) will use the facilities to permit cluster-wide record access.

**D** In addition the customer may be specifically interested in the Job Queueing in a cluster as described in the VAXcluster Technical Summary. It will be possible to balance the shared batch and print workload across the cluster.

(See Sales Update, Special Issue, April 25, 1983 pages 15-25. Send customer VAXcluster Technical Summary and VAXcluster Brochure.)

The distributed lock management facility synchronizes shared file/record access by providing a namespace in which processes can lock and unlock resource names. Processes can be queued in a "wait" state for access to locked records. The lock manager detects and prevents deadlocks caused by mutual locking of resources by a set of concurrent processes.

The common journaling facility records all changes in the state of a file, providing an audit trail and a means to "roll back" or "roll forward" files to a stable state. The recovery unit facility specifies sets of database operations to be processed as units in order to retain database consistency; if a failure occurs within a unit, files can be restored to the state immediately preceding that unit.

Checkpoint/restart protects lengthy computational tasks against host computer failure. Using application-specified checkpoints, the facility restores files and restarts the application at the most recent checkpoint, avoiding an entire application rerun.

### VAXcluster Components

**E** The CI bus is a dual, redundant data path that consists of two transmit and two receive cables, each with a 70-megabit-per-second bandwidth. It accommodates up to 16 nodes in a computer room environment; each node may be either a VAX processor or a subsystem consisting of an HSC50 intelligent mass storage controller with up to 24 disk drives. Processors are connected to the CI bus through microcoded, intelligent controllers—the CI780 interface, introduced last year, and the new CI750 interface for VAX-11/750 processors.

Each CI interface is connected to both paths of the CI bus and uses whichever path is available. Cluster throughput is enhanced when utilizing both paths; if either path becomes unavailable, traffic is automatically shifted to the remaining path.

**E** The throughput throughout the VAXcluster is a function of processor to processor traffic, and processor to secondary storage traffic. Each site, application and user community may be handled differently to optimize VAXcluster performance.

(See Sales Update, Special Issue, April 25, 1983 pages 58-59. Get Support Services involved early in the Sale's Cycle.)

**F** The Star Coupler is the common connection point for all nodes in a VAXcluster configuration, accommodating CI cables with a maximum length of 45 meters in a radial or star arrangement. The Star Coupler will be delivered in an eight-node version with upgrade capability for an additional eight nodes.

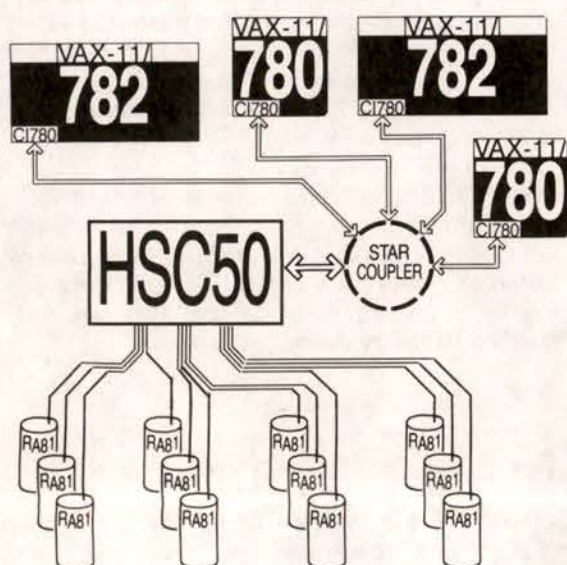
**F** The eight (8) node upgrade assembly mounts are accommodated within the existing cabinet, so sixteen (16) nodes do not require any more floorspace for the Star Coupler than eight (8) nodes.



## Intelligent Storage Controller

**G** The HSC50 (Hierarchical Storage Controller) is a self-contained, intelligent, mass storage subsystem that serves as the interface for VAX host computers and a set of disk devices. The HSC50 can handle multiple, simultaneous operations on several drives and will optimize physical operations (seek, rotational position) to maximize throughput. In addition, it can relieve the host systems of utility operations such as volume shadowing and backup to disk or tape.

**G** Here are three (3) channels, with four (4) cabinets containing twelve (12) RA81s for a total of 5 gigabytes. This could support a total of four (4) VAX-11/780, or four (4) VAX-11/782s, or any combination of these equal to four (4) in VAX/VMS Version 3.3 and up more processors in the future.



(See HSC50 Brochure. Send customer VAXcluster Technical Summary and VAXcluster Product Brochure.)

Each HSC50 subsystem will support any combination of up to six disk channels. Digital currently offers support for up to four host processors per HSC50 controller; future support will be extended to include more processors as well as tape drives and channels. Each disk interface will support four disk drives (maximum 24 disks per HSC50).

Three HSC50-compatible storage devices are currently offered. They include the RA80 drive, a 121-megabyte Winchester device; the 205-megabyte RA60 unit with removable packs; and the RA81, A Winchester-type drive with a 456-megabyte capacity. All are housed in 10½-inch-high, rack mountable enclosures.

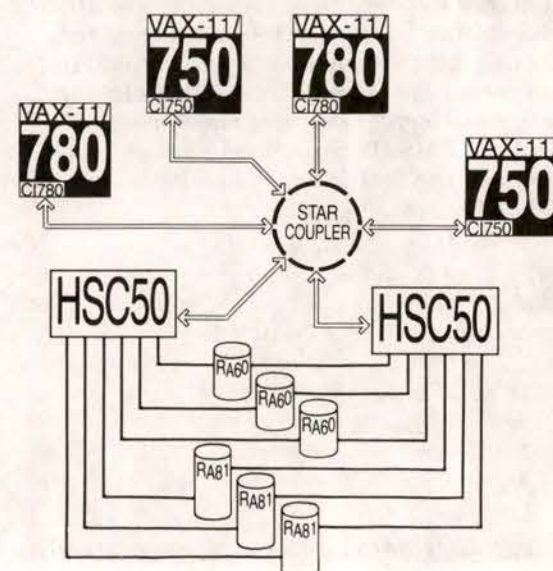
The HSC50 subsystem has extensive internal diagnostics and a level of internal redundancy, enabling continued operation despite disable disk interface modules with minimal reduction in throughput.

**H** Both CI cable and storage device connections use transformer coupling, so they can be removed and reconnected without disrupting other device or cluster operations.

**H** Up to three (3) of these mass storage products can be located in the same cabinet, so if you choose to have removable and fixed storage in the same cabinet it can be provided.

The HSC50 is an intelligent disk and tape server that incorporates self checking mechanisms and provides information on any problems that may occur. Its operation can be monitored by the system manager and any identified problem devices can be removed without taking the system down.

**T** Typical VAXcluster systems configured for high availability will include two HSC50 subsystems, with dual-ported RA60, RA80, and/or RA81 disk drives connected to each HSC50. This provides a second path to stored data and will enable switchover of storage devices in case of a subsystem failure, thereby sustaining user access to data.



## Software, Communications

VMS version 3.3 and 3.4 will serve as a software foundation for cluster operation and will establish basic cluster functionality for multiple processors and shared storage. Version 3.3 supports a mix of VAX-11/780 and VAX-11/782 processors and HSC50 storage controllers with shared disk support.

**J** Each processor is connected through a CI780 interface to a single CI bus; VMS software supports dual-porting disks between two HSC50 controllers for increased fault tolerance.

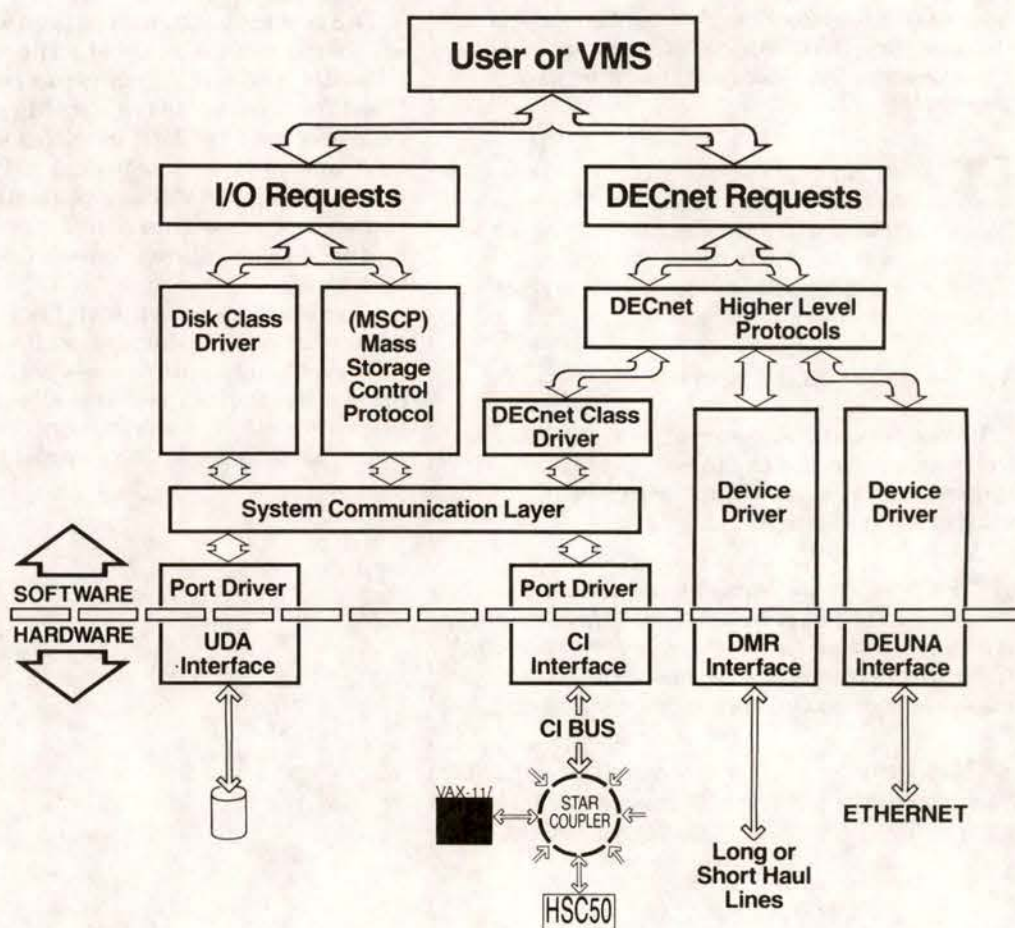
**J** A CI Bus is four (4) coax cables (two transmit, two receive).

Version 3.4 of the VMS operating system extends Version 3.3 features to the VAX11/750 processor. Advanced software capabilities for cluster-wide data access, integrity, and availability will be contained in future releases of VMS.

**K** DECnet-VAX communication software is compatible with VAXcluster system software, and enables a VAXcluster processor to function as a node in a long-distance DECnet network. The DECnet-VAX interface can also be used within a VAXcluster system with the CI bus as the main communication link.

**K** Communications between processors can use the CI, Ethernet, or conventional DMR hardware.

Communication between processors and HSC50 is a very efficient system level protocol to provide high bandwidth data interchange and does not use DECnet protocols.





# Team Selling— VAXclusters

by Rod Sutherland

The importance of VAXcluster concepts to your customers and their COMPUTING STRATEGIES cannot be undersold.

The far-reaching effects of the VAXcluster announcement are of such significance that we, as ACCOUNT TEAMS, all must understand the overall benefits and associated guidelines to be considered when offering VAXclusters to our respective accounts.

Indeed, our accounts will be able to establish an overall COMPUTING STRATEGY to their benefit with such an approach. And since this COMPUTING STRATEGY affects their overall organization, we must bring our very best spectrum to the planning table. This demands a total TEAM APPROACH to the planning and selling of VAXclusters.

Pay particular attention to the implications of the VAXcluster announcement and its importance to your account. Then plan together how and when you, as an ACCOUNT TEAM, all will address this announcement with your accounts.

# Software Services/ VAXcluster

by Mo Bakr

A customer who is considering the purchase of a VAXcluster is making a major decision. It is a large investment and will require some changes in the customer's mode of operation. The Field Account Team is responsible for providing the customer with all the information necessary to make the right decision.

The Software Specialist is particularly responsible for helping the customer find answers to the following questions and issues:

## ■ Why Choose VAXclusters?

VAXclusters could be the answer for customers who are looking for one or more of the following characteristics:

- Incremental Growth
- High Availability
- Data Integrity
- File Sharing

The Software Specialist, in conjunction with the other members of the Account Team, will study the customer's needs and develop the best overall plan. A number of tools and services are available for use by the Software Specialist. Some of these cover the areas of Performance Management and Decision Support.

## ■ Which VAXcluster Configuration?

A VAXcluster system is a customized solution. There are many different configurations of hardware and software available. The proper configuration is one that matches the customer's particular needs. It must also provide the customer with the right balance of desired features. The Software Specialist, working with the Account Team, will help the customer select the correct set of VAXcluster Components and the best way to configure them.

## ■ Installation, Tune-up and Training

A quick and successful installation will increase customer satisfaction and decrease Digital's cost. To do this, the Software Specialist will develop a Software Installation Plan and will also assess the customer's software needs and recommend appropriate start-up services. The Software Specialist will advise the customer on ways to install the software and tune the system for optimum performance. The Software Specialist will manage the actual VAXcluster software installation and assist in other areas as needed. Working with Educational Services, the Software Specialist can recommend a training program that matches both the customer's and their staff's level of expertise.

## ■ On-going Operation and Support

A large number of Software Services are currently available for the customer. These include:

- DECstart
- Capacity Planning
- Decision Support
- Self Maintenance
- Basic Service
- DECsupport

As new phases of the VAXcluster program become available, new Software Service offerings will be introduced that take advantage of the latest technology. The Software Specialist will be able to aid customers in choosing the Software Support Plan most appropriate for their mode of operation.

## ■ Applications Development

The VAXcluster introduces new technologies and features. The Software Specialist can assist customers by helping them take full advantage of these new technological advances.

## ■ Future Growth

The VAXcluster is geared toward customers with growing computing needs. In developing a VAXcluster configuration, future growth has to be taken into account. As more of the VAXcluster program phases are introduced, many new features will become available. These features will underline and enhance the role that Software plays throughout the life cycle of the system:

- Pre-sales
- Start-up
- On-going operations
- Upgrade/expansion

This makes it very important to get the Software Specialist involved early in the Pre-sales phase.

The Account Team can help customers find the most appropriate and cost-effective solution for their present-day business problems while keeping an eye on future technological developments.



## Field Service/ VAXcluster

by Jeff Gardiner

VAXclusters will present a unique opportunity for increased sales into new markets and will enhance the functions of many current customers' capabilities. VAXclusters may also create a lot of headaches if proper planning is not done. The variety of VAXcluster configurations and the variety of interconnections and cabinet positioning can present the customer with many questions. An effective team of Sales, Software and Field Service should be able to understand and present the best solution to the customer.

Configuration planning of the hardware is a significant need. The ability to interconnect and position the hardware components in many different ways requires a hardware/software solution. The Software consultant will understand the hardware components needed to fulfill the customer's application, and the Field Service representative can then recommend the best hardware configuration.

Working with the customer will be necessary to properly prepare the site for a VAXcluster. The Site Planning procedure will become increasingly important as the VAXcluster grows. Environmental considerations must be taken into account to ensure the reliable operation of the VAXcluster.

Before the arrival of the hardware, a comprehensive Installation Plan and schedule should be prepared by the Field Service and Software groups so that installation takes a minimum amount of time. Smooth Installation and Acceptance of the VAXcluster will ensure the minimal impact on the Digital Warranty.

Providing effective service will require access to the VAXcluster by a VAXcluster Support Team. The Remote Consoles of each node will be ordered, installed and tested during the Installation period. Remote Installation monitoring will ensure that as the hardware is being installed we can maximize manpower on site to do the physical installation, leaving the testing and acceptance activities up to the Remote Service Center.

Troubleshooting a VAXcluster presents unique problems. The cables needed to interconnect a VAXcluster will require detailed cable maps and configuration layouts. This should be done well in advance so that all cables ordered are the correct length and routed in the most orderly fashion.

Field Service involvement in the potential VAXcluster sale at the earliest possible time will ensure that all goes well with the order, the site, the installation and acceptance of the VAXcluster. Proper planning as a team will ensure a satisfied customer.

## Educational Services Training Is Key Component of VAX Customer Support

by Cynthia Ellis

Business and industry in the 1980s are quick to recognize training as both a valuable investment in human resource development and an essential factor in improving company performance and productivity, particularly where computer systems are concerned.

With a staff of more than 1700 professionals and 25 Training Centers throughout the world, Digital's Educational Services stands ready to help ensure that your customer's VAX system operates at maximum efficiency.

As declining costs make VAX systems available to larger numbers of people, today's VAX/VMS customer education market is demanding cost-effective end-user training as well as ongoing support for the highly skilled data professional.

The VAX/VMS training curriculums are designed to meet the growing needs of your commercial customer base, with emphasis on entry-level education for small systems like the VAX-11/730. At the high end of the spectrum, educational offerings focus on application design and system performance. The

intent is to design more job-relevant courses and provide your customers with increased flexibility in selecting the exact kind of training they need.

Educational Services offers comprehensive, quality training to support all Digital's major VAX/VMS products. Specific areas such as data management (DBMS, DTR, TDMS, FMS, etc.), system training (for new users, operators, programmers, system managers, etc.) and hardware training (self-maintenance education for VAX-11/780s, 750s and 730s) are addressed in a wide variety of formats.

These include computer-based instruction, lecture/labs, self-paced packaged courses and management and technical seminars. Courses can also be customized and taught on-site at a company's own facility. In addition, Digital Press publishes books written by experts in the field of VAX technology.

Educational Services marketing representatives are your contacts for more information relating to all aspects of VAX/VMS training.

## DECUS Helps Increase Sales Effectiveness

by Mary Oskirko

DECUS is the acronym for the Digital Equipment Computer Users Society. If your experience with DECUS is limited, you may not put much stock in the above statement. The fact is DECUS is a very useful and valuable selling tool—a much more useful selling tool than can really be written about in this brief article.

You and all the field personnel are more knowledgeable about the needs and desires of your customers/prospects. Through the facts noted here it is hoped that you will be able to add DECUS as a selling tool to benefit both your customers and DIGITAL.

### DECUS Aids in Making Contacts

- 65,000 Members Worldwide
- 150 Local Users Groups (U.S.) holding monthly meetings

By attending and supporting Local Users Groups (LUGs) you can

- Meet prospects
- Gain multi-customer exposure
- Increase sales/service visibility
- Open communication through an informal atmosphere—a competitive edge

### DECUS Products Help Leverage Sales

#### Symposia

- 3,000-4,000 attendees (U.S.)
- 15 per year worldwide
- Exhibit Hall open to prospects
- Technically excellent sessions in State-of-the-Art Computing

#### Software Library

- 1,800 user written software programs and packages
- Worldwide exchange
- Inexpensive

#### Publications

- Quarterly Society newsletter
- Subscription service for 21 Special Interest Group Newsletters distributed worldwide
- User to user technical support

#### DECUS Aids in Closing the Sale

- Reference to similar accounts
- Expansion of the mailing list
- Better forecasting
- Provides "futures" feedback

#### Your Customer Is Your Best Prospect

DECUS has lists available of the LUGs in your area. Contact the DECUS Office at One Iron Way, MRO2-1/C11, Marlboro, MA 01752, (617) 467-4166 (DTN 231-4166) for more information.



# VAXcluster Customer Slide Show

A VAXcluster slide set has been prepared to help you show your customers the various features and benefits of owning a VAXcluster. Selling a VAXcluster is much like selling a standalone VAX except that, in addition to selling particular system capability, you are selling a computing strategy—a *new way* to provide for an organization's computing needs far into the future. It is the flexibility and growth potential of VAXcluster that you are selling.

## Audience

The presentation is designed for the System Manager and his management. They are the ones who have to provide a computing service for other people—either within a single organization or across departmental boundaries such as in a corporate information system. They must provide benefits for their *users'* community in the areas of response, access, availability, and protection. They must *protect the organization* against premature obsolescence and against changes in their own competitive environment. They must also provide for themselves: flexibility, compatibility with existing and future technology, and provisions for sharing resources within their organization. Of prime importance is responding to their changing environment without disturbing their software application or user training. That is, they want *stability* as they grow. Digital, through VAXcluster, provides this stability in a way that no one else can.

## When To Use the Slides

Use the slides after your customer knows something about DEC and VAX. The customer should have expressed a need for high end computing. This means that one of three things should concern the System Manager:

- High number of users, many applications
- High disk capacity
- High availability
- High data integrity

## VAXcluster Is a Phased Program. Study Before You Sell It!

The presentation is a stylized representation of the VAXcluster. VAXcluster is a very sophisticated set of tools. The presentation simplifies its concepts and presents them so that the user, the System Manager, and the corporate organization will see benefits in using a VAXcluster concept as opposed to a monolithic mainframe approach. A slogan to keep in mind is: VAXcluster—The New Way to Grow Systems. It's this concept that you are trying to sell. If your customers buy into this concept, the only vendor they can go to is Digital.

As shown below, the presentation is broken into a front end, eight separate benefits areas (four for the user, four for the organization), followed by a very brief close.

The idea behind the presentation is to allow the presenter the flexibility to go into as much detail as they may want in a long presentation.

They may also shorten the presentation to allow a quick overview, and perhaps inclusion of the VAXcluster slide set in a larger presentation that would address the broader needs of a specific application.

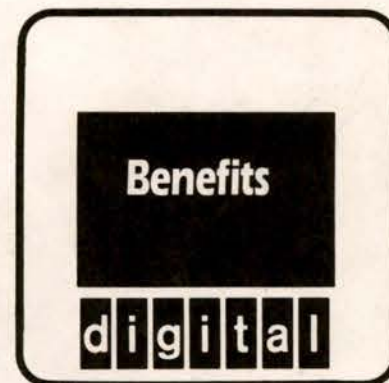
The presentation is structured and implemented in such a way as to allow you to delete slides (in cases where you don't want to go into the nitty gritty of particular benefits) or add additional slides to provide further detail on specific areas. For example, in the first segment Response, you could describe (using VMS-provided slides) the VAX architecture. Also, under Response, you could add slides to further describe the Digital Storage Architecture. In the second segment called Access, you can add additional slides to depict the Digital Network Architecture, to further explain the utility of distributed processing, and position VAXcluster Systems accurately with the distributed processing environment.

Remember, you are selling a concept in High End Computing. If your customer buys into that concept, the only vendor that supplies products that will work that way is Digital Equipment Corporation. So, sell the concept—the concept will sell the systems!

The VAXcluster Customer Slide Presentation is available through the Sales Communications Specialist (Literature Contact).

For additional information see Sales Update/Vol. 14 No. 26 June 20, 1983.

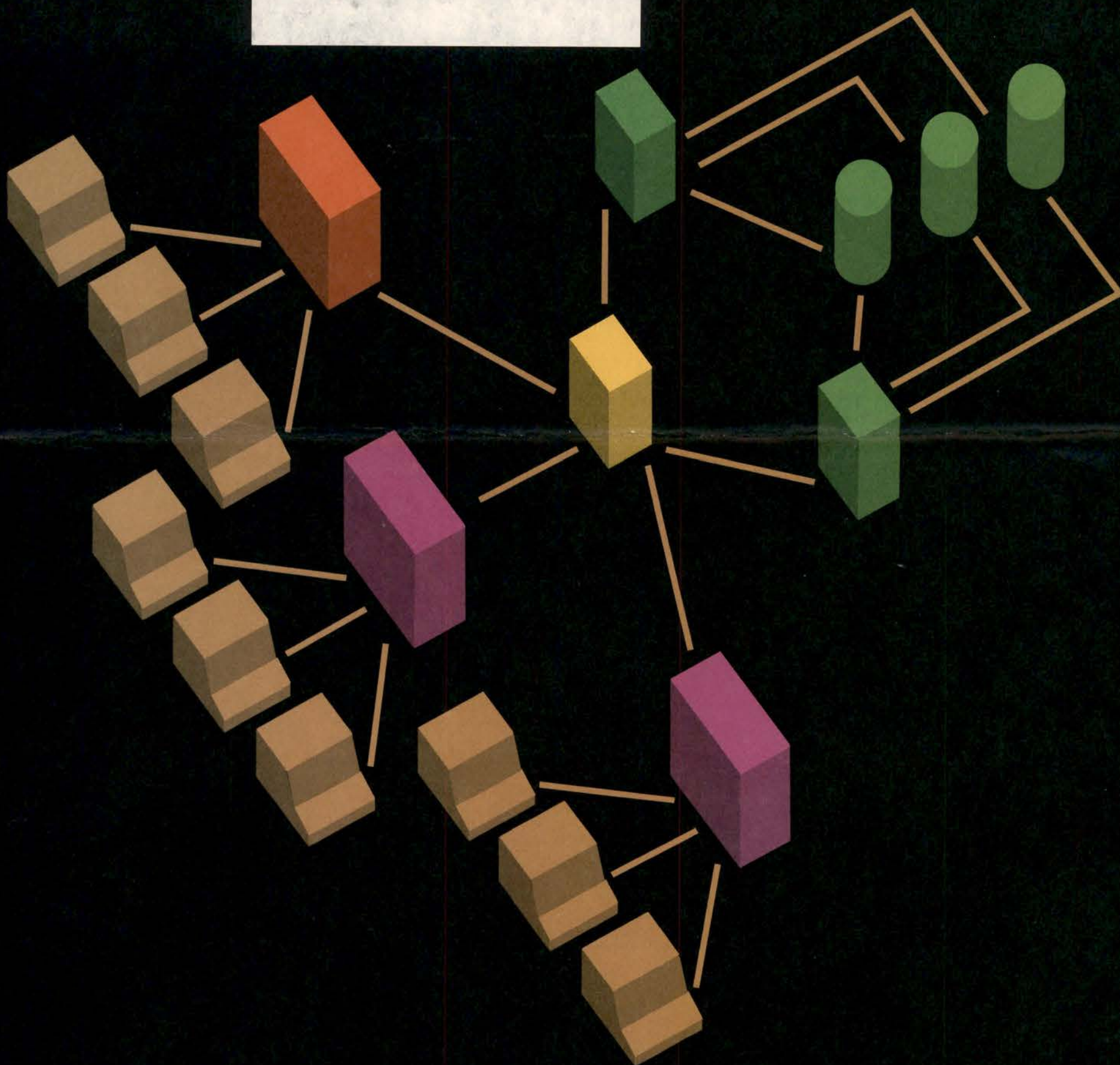
Heading ◊	Front End	User Benefits				Organization Benefits				Close
What Benefit ◊		Response	Access	Availability	Protection	Flexibility	Compatibility	Resource Sharing	Stability	





# VAXcluster

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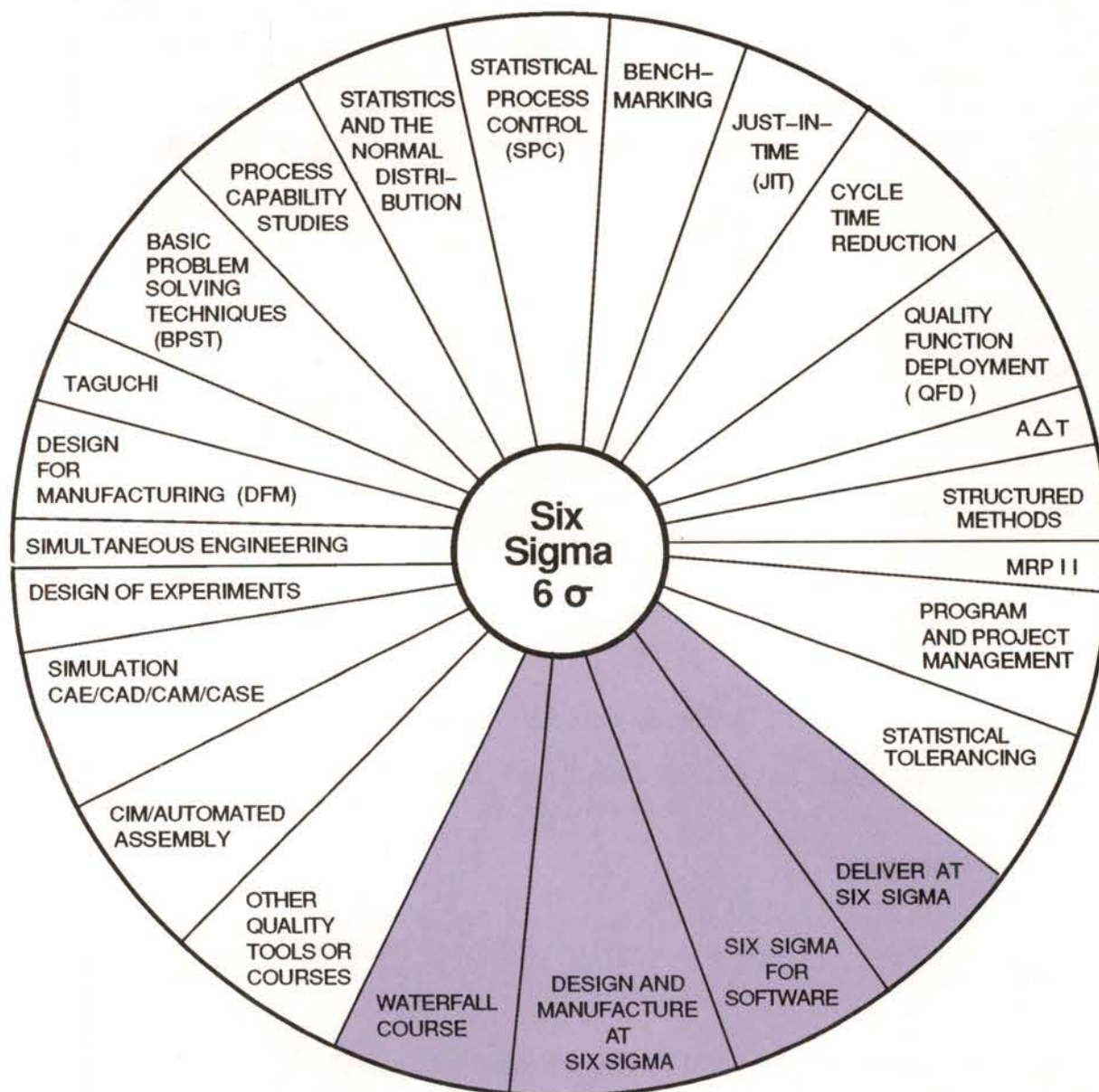


# FRONTIER

## STORAGE AND INFORMATION MANAGEMENT GROUP (SIMG) NEWSLETTER

Volume 3, Number 1 March 1990

### Programs, Tools, and Methods — All Part of Reaching Six Sigma Quality



\* THE NEW SIX SIGMA CORE COURSES

**S**ix Sigma is SIMG's method to achieve virtually defect-free products and work, leading to reduced costs, 'best in class' quality, and total customer satisfaction. Six Sigma involves many of the programs, tools, and techniques that have already been a part of SIMG's ongoing quality program.

All of the programs, tools, and techniques in the chart at left fit together in support of our unified effort to reach Six Sigma performance. Here are a few examples of how other key quality methods relate to Six Sigma.

#### Quality Function Deployment (QFD)

The first step in Six Sigma is understanding the customer's requirements and embedding those requirements in the early stages of product development. QFD is a tool that leads us to the critical dimensions we need to design for total customer satisfaction.

#### Design for Manufacturing (DFM) and Simultaneous Engineering

DFM and simultaneous engineering are at the core of Six Sigma because, fundamentally, Six Sigma designs for manufacturing. By designing products that will accept maximum variation in component parts and, simultaneously, developing manufacturing processes that will produce minimum variation in the final product, we can achieve Six Sigma quality.

DFM is crucial to our implementation of Six Sigma, along with its tool, Design for Assembly (DFA).

#### Just-in-Time (JIT)

JIT contributes to Six Sigma performance by eliminating waste, shortening time-to-market, and reducing cycle time. JIT is a philosophy for doing business that reduces not only the product time-to-market, but our response to customer demand as well.

(Continued on page 2)

### Disk Striping Driver Keeps Pace with High-End Systems

**T**he Architected Information Management (AIM) group premiered its first product, the disk striping driver, with the announcement of the VAX 9000 system. The disk striping driver was developed by AIM and High Performance Systems (HPS) to provide the high-performance disk subsystem capability needed in the markets and applications targeted by the VAX 9000 and high-end VAX 6000 systems.

AIM is a cooperative program among storage, database, and operating system groups, with a long-term goal of creating an integrated architecture that will help customers manage information in a distributed multivendor network across a corporation. In this future, distributed, heterogeneous environment, customers will need large amounts of storage. The AIM group is defining architectures to meet the demands of

managing this storage in the 1990s and beyond.

As a way to prepare customers and Digital's field support organizations for the new storage management environment of the 1990s, AIM has held Storage and Information Management seminars and symposiums. The seminars show customers the storage management products that are available today and help them plan for the future storage management environment, while the technical symposiums give AIM the opportunity to hear feedback from the field on near-term product plans.

Developing quick-time-to-market products, such as the disk striping driver, is an important first step for AIM in demonstrating its awareness of customer needs for improved storage management capabilities.

Bill Smoldt, AIM Product Marketing Manager, talks about this new product:

#### How Does the Disk Striping Driver Fit in With SIMG's Product Strategy?

Disk striping fills a gap in our product offerings for applications that require very high transfer rates. In the past, storage technology wasn't able to keep pace with the CPU's fast rate of growth in MIPS. But disk striping can now close the gap for applications needing to move a large amount of data quickly into memory.

The striping driver does this by spreading a file over several RA- or RF-series disk drives and reading or writing the file over several controllers simultaneously; the disk striper increases both I/O transfer rates (the amount of data transferred per unit of time) and I/O request rates (the number of data transfer services per unit of time).

A user, for example, wouldn't have to change a single line of code if eight

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# U.S., Europe PM&M Managers Trade Places, Gain Worldwide View of SIMG

As the trend towards greater internationalization of Digital's business continues, it is critically important for SIMG's plans and processes to strive for continued global integration.

To help SIMG Product Management & Marketing (PM&M) achieve this objective, John Woelbern, Manager of Product Management & Marketing in SHR, and George Eifler, Manager, Product Management & Marketing in Kaufbeuren, Germany (KBO), exchanged assignments for three months this past summer.

With John's increased exposure to our European business and the operation of SIMG-Europe (SIMG-E), and the experience that George gained while working in the U.S., both PM&M managers are able to be more effective in planning the worldwide introduction and support of products.

George was hosted by the Memory PBU in SHR, where he was given the opportunity to better understand SIMG PBU processes and operations, as well as observe the planning and delivery of the successful Summer School program. The Summer School program was delivered in Europe this quarter, and George played a major role in coordinating the SIMG effort.

While working at the KBO site, John's responsibility was to better understand our European storage business and functional linkages, as well

as identify opportunities for enhancing the roles and responsibilities of SIMG-E. John brought back from his assignment greater knowledge of the Storage business in Europe, and an appreciation of the factors that make SIMG-E a successful contributor to the European Area and SIMG results.

### European Business Differences

John notes that the European business environment is a complex one, consisting of differences in customer applications, business practices, pricing structure, and competition, as well as the obvious language and cultural differences. For example, the U.K. is characterized as a large system, end-user market, whereas the German market for Digital consists of more low-end technical customers. France, on the other hand, is a mix of both. Storage sales vary substantially by country, both in terms of product mix, and overall market and business penetration.

*Understanding the needs of our international customers and providing timely information, support, and feedback are crucial to the continued success of SIMG and Digital.*

On the whole, Europe may have similar basic needs for Storage products as the U.S. Area. However, the scale and emphasis may be different, such as fewer large clusters but more small-system demands. This will result in greater customer demand for entry-level cluster products and, in general, greater requirements for low-cost disk, tape, and memory options.

### SIMG-E Role and Structure

The business complexity of this multinational environment necessitates close contact with country market needs and close communication and feedback to SIMG product plans. To achieve this goal, the Kaufbeuren Storage Manufacturing plant was selected as the host management site for Storage Product Management & Marketing (PM&M) activities in Europe. As a functional member of European Systems and Services Marketing, SIMG-E PM&M is filling a critical need by linking Area Marketing, Account Management, Sales, and customers to SIMG and its products and technologies. With SIMG-E dedicated to supporting Sales and customers with product and competitive information, European Systems and Services Marketing is able to concentrate on developing major, Area-level, revenue-generating programs.

One way of establishing the communication between European customers and SIMG is to conduct customer visits periodically. During FY89, for example, SIMG-E hosted eight customer visits at the KBO facility, where customers and their sales reps are brought into the plant to learn about new SIMG products and technologies directly from technical contributors and product marketing representatives. These sessions were attended by 295 customers, representing 211 companies from 11 countries, and helped to close significant storage business for Digital.

### Close Functional Linkages and Timely Information are Essential

One of the keys for SIMG-E success is to maintain solid functional linkages with timely information. Having clear, up-to-date product and competitive knowledge is crucial to supporting Sales and customers. The functional linkages are already in place, so the biggest ongoing challenges, according to John, are to keep the information flow going and understand the required lead times. Timely information and proper planning, for instance, are critical to providing quality, global product announcements that include the local-language literature, configuration and positioning data, and

pricing and ordering information.

The successful worldwide launch of 25 new storage products last fiscal year, including the introduction of 2 new I/O interconnect standards and associated disks, tapes, and controllers, was a major challenge and accomplishment. Understanding the needs of our international customers and providing timely information, support, and feedback are crucial to the continued success of SIMG and Digital. A job assignment exchange between major international locations is one way to help achieve better integration though sharing our experiences in the complexities of doing business in other parts of the world.

## What's Next After the 'Waterfall' Course?

Over 6,000 SIMG employees worldwide have now completed the initial 'Waterfall' Course, an introduction to Six Sigma concepts. This first Six Sigma course was a success because of the commitment and leadership SIMG management demonstrated by learning the principles of Six Sigma and then teaching the concepts to their staffs.

After the 'Waterfall' Course, the next step is to take one of the three Six Sigma core courses: 'Design and Manufacture at Six Sigma' for design and manufacturing teams, 'Six Sigma for Software' for software engineers,

or 'Deliver at Six Sigma' for all other disciplines.

A train-the-trainer program has also been set up to ensure the expertise of internal faculty for the new Six Sigma courses. This program will train an internal faculty to teach the Six Sigma curriculum to SIMG and other Digital organizations.

Locating internal SIMG tutors across the business is the newest piece of the Six Sigma implementation effort. These tutors will be available to help people apply the Six Sigma course work to their specific business.

## FRONTIER

FRONTIER is published quarterly by SIMG, Education and Training. The aim of the newsletter is to promote communication on items of interest to the Storage and Information Management Group.

Suggestions and comments from our readers are welcomed. Readers are also encouraged to contribute news on the following topics:

- SIMG business and plant news
- Technological trends and product updates
- SIMG recognition and awards
- International SIMG news

Send hard- or soft-copy articles to the Managing Editor:

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Storage and Information Management Group  
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Art O'Donnell, SSVAX::ODONNELL

## Programs, Tools, and Methods

(Continued from page 1)

It is based on factors such as continuous improvement, simplicity, waste elimination, and full employee involvement in problem solving.

### A Δ T

A Δ T is a method for cycle time reduction and elimination of waste in manufacturing as well as other areas. By comparing actual conditions (A) with a theoretical ideal model (T), the difference between them (Δ) can be analyzed and eliminated. A Δ T

can be applied to any process or system involving time or cost.

### Benchmarking

Benchmarking is essential to the overall Six Sigma effort because it is the step that compares our products, services, and practices with those of companies acknowledged as the 'best in class' for a particular area. When we apply Six Sigma methods, we can then adjust our processes to close the gap and move ahead of the competition.



# KDM70 Controller: Teamwork Leads to Performance Breakthroughs

The KDM70 controller, designed in Colorado for the XMI bus and manufactured in Enfield, Connecticut, represents a major victory for its design and manufacturing teams and marks a revolution in storage controller performance.

This new high-performance, single-host storage controller, which was announced with the VAX 9000 system, provides direct attachment for all RA disks, TA tapes, and the ESE20 device. The KDM70 controller bridges the price/performance gap between the KDB50 and the Hierarchical Storage Controllers (HSCs). Since the KDM70 module has more I/O handling capability than three KDB50 controllers, it is targeted at customers with I/O-intensive applications.

"The KDM70 has the best of both worlds. It's the first time we included the functionality and performance optimizations of a multihost controller

in a single-host controller," explains Clare Russ, KDM70 Product Manager.

Clare adds, "Controllers are the unsung heroes of Digital Storage Architecture (DSA). Some customers think you just take a tape or disk and plug it right into the computer. But it's the controller that allows the drives and the host to talk to each other. The controller offloads host activity, and provides a standard interface which allows customers to interchange DSA storage devices. This architected approach is unique in the industry."

During the development of the KDM70, the program withstood a number of changes. Originally, the controller was designed for the VAXBI bus, but after reexamining market needs, it was determined to be a better strategy to attach it to the XMI bus.

"Through the shift in strategy, the project team was great. They were able to successfully redirect their ef-

forts and become performance champions with the KDM70," says Clare.

Initially, the performance requirements for the KDM70 controller were defined as 300 I/O requests per second, but the team was able to meet the challenge presented by the High Performance Systems group to achieve 700 I/O requests per second and a sustained data rate of 3.4 Mbytes per second.

Explains Clare, "A big turning point in the project was when the performance numbers improved. Even though we are advertising 700 I/O requests, the engineers have exceeded 1000 I/O requests and 4.0 Mbytes per second in the lab. By optimizing the microcode, the engineers have improved performance to meet the HPS challenge."

The KDM70 module also marked the beginning of a new surface-mount manufacturing technology for future SIMG products. At the ENO facility, the KDM70 manufacturing team succeeded at developing a new surface-mount process. For the first time in SIMG, boards with active devices on both sides and incorporating 196-pin, 25-mil placement could be completely assembled using volume pick and place machines and IR/Convection Reflow technology. This supercedes Vapor Phase Reflow of 50-mil devices and

special heater-bar machines used for 25-mil device assembly.

This technology, according to Bob Young, KDM Manufacturing Project Manager, is more reliable and makes manufacturing easier than the previous double-sided surface-mount technique.

"At the time we decided to do this surface-mount process it was not a proven technology, but we took the risk. ENO has shown that they can successfully manufacture a highly complex surface-mount technology product and has qualified the process for Digital. The KDM70 will lay the groundwork for future SIMG products," explains Bob.

Close coordination between CXO and ENO engineering and manufacturing paved the way to a successful KDM70 prototype. In dealing with many nonstandard parts and procedures, good communication and mutual trust, balanced with careful risk-taking, were essential. Manufacturing and engineering had to understand and perform within each other's constraints, in a strong team effort, for the quickest possible turnaround times.

As Clare Russ concludes, "This product is a winner!"

## Striping Driver Increases Throughput

(Continued from page 1)

RA90s were striped to create an apparent 10-gigabyte disk with a 13.6-megabyte-per-second transfer rate.

In addition to increased throughput from the I/O subsystem, striping also helps load-balance data across drives. You can even out access to both a frequently accessed drive and a drive that isn't accessed frequently by placing the two drives into a stripeset.

### When Did Development for the Product Begin?

HPS engineers started the project a couple of years ago as an experiment to determine how disk striping might improve I/O performance, especially in large systems. When AIM was founded in January 1989, a joint effort between HPS and AIM was established to create a product from the prototype software.

Jim Flemming and Tim Litt from HPS engineered the product, with support from Jay Rubenstein in AIM, who will be responsible for future enhancements. Harlo Peterson and Keith Norman (CSSE), Tony Crugnola (Documentation), Henry Davis (HPS), Bill Munson (AIM Product Manager), and I (AIM Product Marketing) were the other permanent members of the product team.

### How Does the Disk Striping Driver Benefit our Customers?

Our customers, who have needed extra storage bandwidth in the past, can now get it on Digital's systems. Now their DEC system can provide the bandwidth required for certain applications. This means we will be able to compete in markets where we couldn't offer a solution before striping.

Customers will also find some situations where the load-balancing characteristic of striping will allow them to make more efficient use of their existing storage devices — as a result, they'll need less system management.

Although striping isn't a comprehensive load-balancing tool, it does

provide statistical load-balancing across drives, so the system manager doesn't have to redistribute files as frequently.

### How Will the Disk Striping Driver Benefit Digital?

The disk striping driver will leverage new sales of disks and controllers. Customers that need the extra transfer bandwidth are often able to pay for the extra hardware, they just haven't been able to get that bandwidth on a Digital computer. Striping opens up new markets for Digital drives, and because these applications require high bandwidth, that means one KDB50 controller per drive or one KDM70 controller per two drives — so it also means more controller sales.

### What Were Some of the Customer Reactions at DECUS Regarding the Striping Driver?

Striping was a real hit at DECUS, where we had a session packed with 450 attendees.

Rich Wrenn, Luis Praxmarer, Ed Pfromer, Ken Bates, Charlie Cassidy, and I constantly gave mini-sessions in the storage booth while demonstrating striping. Because Luis Praxmarer and I were wearing striping labels on our badges, we often gave striping sessions in the elevator on the way up to our rooms.

### What are AIM's Plans for Future Disk-Striping Products?

We certainly learned at DECUS that many of the people who are going to buy striping are going to use it in a cluster setting. Version 1 of striping isn't designed for the cluster environment but, rather, is adapted to it. You have to create a stripeset on one node and serve the stripeset to the other nodes. Distributing access within the cluster is a priority for a future version of striping.

Striping will always be a product that fills the need for high bandwidth; I see a place for it in our future storage environment. As we discover ways customers are going to use the disk striping driver, we'll also find out the additional feature needs of the product.

## IMI Participants Get Inside Look: Demos Showcase SIMG's Leadership

by Marty Banks  
SIMG Process Technology Group

Last quarter SIMG hosted more than 35 European customers interested in seeing how Digital uses its own tools in running a successful international business.

The visitors were all participants in the Senior Management Development Program sponsored by the International Management Institute (IMI) of Geneva, Switzerland. They represented a variety of large and well-known companies operating in Europe, including Fiat and SELM, to name just a few. Also accompanying the group were some of Digital's European-based senior management.

By visiting selected sites in the U.S., Japan, and Europe, the IMI program gives its participants a first-hand view of operations within companies deemed leaders in one or more aspects of the business and technology world. Digital, and SIMG specifically, was chosen because it is a pioneer in the development and manufacturing process of thin film heads and media.

In addition, the IMI group had an interest in SIMG's innovative management processes. Specifically, the group wanted to see how we've achieved the successful integration of high-technology components into our products, regardless of geographical boundaries. Although considered a new process today, the IMI participants recognized that SIMG's pioneering example of this capability is sowing the seeds for the 21st century manufacturer.

The visit was held at the Northeast Technology Center in Shrewsbury, and included demonstrations, a plant tour, and a presentation on the 21st century manufacturer. Says Charlotte Frederick, SIMG/Process Technology Group Manager, "The demonstrations were designed to show how we manage a global operation from anywhere, anytime. We were also able to demonstrate how our databases are used to distribute strategic information, enabling such tasks as problem prevention and resolution, corrective action, tracking, and monitoring."

Both demonstrations were based on using a live network to instantly communicate with SIMG sites in West Germany, Massachusetts, and Arizona.

"The first demonstration used electronic mail to show how communication via computers has become a way of life at Digital," says Charlotte.

"We showed that we've not only made global communications possible, but possible on an almost instant basis." The demonstration also touched on how Digital integrates messaging technology with its factory-floor processes and applications.

The second demonstration was more complex, featuring an on-line shared database. Explains Charlotte, "This demonstration gave us the opportunity to show how we can continuously improve our manufacturing competitiveness via immediate feedback from other Digital sites, suppliers, and customers. It also let us show our ability to analyze data no matter where it resides, an important factor given the global nature of our business."



# Recognition and Awards

## SIMG Participates in Summer Session Follow-Up for U.S. Sales Force

It was back to school again for the U.S. sales force. Digital University Institute of Technology, a follow-on to the successful Summer Session for sales representative training, was targeted at increasing the technical competence and product knowledge of the sales support specialists in the field.

The six 1-week sessions, which took place last quarter in Chelmsford, MA, were organized into multiple-track symposiums that focused on technology and products. The material was reinforced with applications and solutions training. Each symposium supported the information that was presented to the sales representatives at Summer Session.

SIMG engineers played an active role as technical presenters in the Systems & Software and TP/Database symposiums. Their expertise served as a valuable resource of technical information for the sales support specialists. During the engineering Question and Answer sessions, students had the opportunity to discuss dif-

ficult issues encountered in the field. Also, the sessions allowed for engineering to hear field input regarding product planning.

SIMG product demonstrations, as well as presentations, were an integral part of the symposiums. One demo, which was developed by SIMG technologists Charlie Cassidy and Ken Bates, was used as a teaching lab for participants to measure I/O performance of various disk configurations. It was also used to increase sales support specialists' understanding of the placement of 'hot' files on different devices to enhance the system's I/O performance.

"The engineering community needs to hear the message that this kind of interaction between engineers and sales support specialists is very valuable because it's an interaction that helps the company," says Dan Kastelein, of the SIMG Product Management and Marketing group.

A special thank you to Charlie Cassidy for coordinating the technical

content and the speakers for SIMG's training classes, and to Bob Jackson for coordinating Database Systems participation in the TP/Data Management Symposium Week.

A big thanks to the following SIMG

product managers, engineers, marketing and management who invested their time and effort in developing the content for DU-IT presentations, training sessions, demonstrations, and planned informal discussions:

Richie Lary	Jay Feenan	Donna Philbrook
Ken Bates	Nelson Hsu	Ken Morse
Luis Praxmarer	Andy Mahler	Chuck Stata
Charlie Cassidy	Claude Proteau	Chuck Kelley
Robert Bauman	Anne Thomas	Chuck Rozwat
Brad Morgan	Vickie Farrell	Jim Steiner
Don Anders	Dave Cameron	Barry Needleman
Mary Meeker	Larry Barnes	Hans Gyllstrom
Tom Burniece	Marco Emrick	Hal Berenson
Bob Jackson	Andrew Linnell	Mike O'Connell
Ken Ravitz	Mike Booth	Mike Gioielli
Cynthia Therrien	Mike Zigurek	Greg Smith
Sagam Pant	Lars Foldevi	Chuck Murray
Phil Royal	Brian Duggleby	Ashish Kumar

## Thanks to Internal ETR Faculty

A major part of the SIMG Education & Training (ETR) strategy has been to build on the internal faculty of SIMG technical leaders and managers. Over the last five years, many people from outside ETR have devoted their expertise and time to develop and teach a variety of courses that have been vital to our business. Some of the teaching teams have been working together for several years, and their substantial contributions helped build SIMG's technical competence and achieve SIMG goals.

We would like to thank our internal SIMG Education & Training faculty for their time and expertise:

Basic Magnetic Recording	Bob Johnson, Marc Hildebrant, Tom Jackson, Naseem Rahmat
Basic Problem Solving Techniques	Gary Neher, Richard Mather, Russ Patton, Anne Beer, Bob Hughes
Designing with Matrix X	Dwight Kinney, Paul Rennolet
Digital Storage Architecture	Paul Massiglia, Ken Bates, Rich Wrenn
Elements of Linear Control Theory	Mladen Luksic
Introduction to JIT	Tom Normoyle
Introduction to Thin Film Head Technology	Jim Tuttle, Hal Shukovsky, Karl Shelin, Jeff Barnum, Lori Duncan, Janice Laetz, Ken Martin, Debby Luskey, Charles Partee, Paul Scheffer, Mark Sousa, Keith Hussinger, Joan Chernova, Alex Cohen, Peter Gaudette, Karl Frey, Mike Daley
Magnetic Recording for Engineers	Bob Johnson, Marc Hildebrant, Bob Raymond, Bill Haines, Gary Rauch, S. Ramaswami, Toan Doan
MAXCIM/JIT	Pam Mayo, Dennis Normoyle
Project Management at CXO	Bob Rennick
Properties and Characteristics of the Normal Distribution	Tom Jackson
RA90 Automation Series	Steve Imke, Clavin Hoc, Jeff Sempek
RS/1	Greg Rippstein
Servo Systems	Mike Sidman
SPICE Course	Edward Guy
Statistics	Bill Eisele
Unigraphics	Denise Thomas
Introduction to SIMG	Key technologists and managers from all SIMG functions (see related story, FRONTIER Volume 2, Number 3)

## KFQSA Adapter Earns Target Award

We are pleased to announce that SIMG's KFQSA adapter was selected by *Digital Review* as one of the Target Award winners for 1990.

Target Award winners are selected by *Digital Review's* subscribers and are chosen for technological innovation, user friendliness, and price/performance.

The KFQSA adapter was nominated for the Target Award in the Storage Controller category. This adapter allows MicroVAX systems to connect up to seven storage devices to create a storage subsystem with a capacity exceeding two gigabytes.

Congratulations to everyone who was part of the KFQSA effort.

## RA90 Team Receives LEAD Award

SIMG has been selected as the winner of the 1989 LEAD award given by the Computer and Automated Systems Association of the Society of Manufacturing Engineers (CASA/SME).

Each year since 1981, CASA/SME has presented the LEAD award, the highest recognition in the field of Computer Integrated Manufacturing (CIM), to two professional teams representing industry and academia. LEAD is an acronym for Leadership and Excellence in the Application and Development of Computer Integrated Manufacturing.

Last quarter, CASA/SME presented the LEAD award to Digital at

AUTOFACT in Detroit, Michigan, for SIMG's RA90 Disk Drive Program. This program exemplifies Digital's long-term commitment to CIM.

The RA90 Disk Drive Program was an international effort that involved many Digital manufacturing sites and numerous worldwide suppliers, with focus on the Colorado Springs manufacturing facility (CXO) as a key CIM site.

SIMG's winning team included members from Colorado Springs, CO, Shrewsbury, MA, Tempe, AZ, Kaufbeuren, West Germany, San German, Puerto Rico, and many worldwide suppliers.



Digital Equipment Corporation  
333 South Street  
Shrewsbury, MA 01545-4112





# Digital This Week

Volume 16, Number 16

October 3, 1989

## Colby H. Chandler nominated to Board of Directors



Colby H. Chandler, chairman and chief executive officer of Eastman Kodak Co., has been nominated for election to Digital's 1989 Annual Meeting of Stockholders is scheduled to be held on Nov. 6.

In announcing the nomination, President Ken Olsen said, "Colby Chandler is a distinguished business leader with a global long-term vision and a focus on improving U.S. manufacturing quality and productivity. Digital and Kodak have worked together on projects for a number of years, and we've developed great confidence and admiration for Colby Chandler."

Mr. Chandler began his Kodak career in 1950 as an engineer at Kodak Park. He subsequently held management positions in quality control and technical services before being named in 1962 as recipient of a Sloan Fellowship to study at the Massachusetts Institute of Technology.

From 1963 to 1971 Mr. Chandler held various management positions in the Color Print & Processing Organization. In 1974, he was named general manager, U.S. and Canadian Photographic Division, elected a member of Kodak's board of directors, and an executive vice president of the company.

He was elected president of Kodak in 1977, and became chairman and chief executive officer in July 1983.

A native of Farmington, Maine, Mr. Chandler received a B.S. in engineering

*continued on page 12*

## Digital unveils advanced technologies for VAX mainframe, future systems

Digital has detailed technical breakthroughs it has achieved in the application of semiconductor processing for multichip packaging that can more than double computer performance when compared to conventional circuit board technology.

The advances, announced last Monday in Cupertino, Calif., result in circuit packaging densities as much as 30 times greater than previously available with printed circuit board technology. Higher densities allow shorter cycle times to achieve overall higher performance.

Included in these developments, which are protected by numerous patent filings, is a fundamental advance in semiconductor packaging that offers an alternative to conventional printed circuit boards commonly used in computer systems. Printed circuit boards have long been a barrier to exploiting the full speed potential of today's advanced semiconductors.

"We've created the first generation of a new computer design technology that can evolve into the next century," declared Bob Glorioso, vice president, High Performance Systems. "These developments will be implemented in our upcoming VAX mainframe computer and will provide Digital customers a technology that will result in price/performance and reliability benefits over a wide range of future distributed computing products."

### Advances in Semiconductor Processing and Packaging

The fundamental advance involves the use of new materials and manufacturing techniques to create the interconnections between semiconductor chips. This interconnection technique, called the High Density Signal Carrier (HDSC), is produced using copper and polyimide and results in the

*continued on page 10*

## Sharon Keillor named CSS vice president



Sharon Keillor

Engineering organization, a position she has held since 1983.

Sharon is chartered to help create and support the Enterprise Integration Services (EIS) organization and to better integrate these functions in support

of that group. In this capacity, she will also report to Russ Gullotti, vice president, Corporate EIS.

Sharon joined Digital nine years ago as Corporate Software Service Training manager. Later she assumed management responsibility for Digital Management Education (DME).

Prior to coming to Digital, Sharon held positions at several universities, including the University of Massachusetts. She has an MBA from Ohio State University, a Ph.D. in Mechanical Engineering from the University of London, England, and a B.E.Sc. in Chemical Engineering from the University of Western Ontario, Canada. ●

**digital**™



# Participation in Direct Deposit Program hits 80%

Corporate Payroll announces that Digital has reached the 80% participation level for direct deposit of payroll checks. This figure is 10 times the average rate of participation among U.S. industry. According to U.S. Government statistics, only 8% of the 2.16 billion salary payments made in the U.S. in 1986 (the latest year for which statistics were available) were made via direct deposit.

Says Leonard Haug, manager, Corporate Payroll, "Both employees and the company have benefited from direct deposit. It has brought higher levels of service to our employees and national recognition to Digital as a leader in electronic payments."

A Quality Assurance survey jointly conducted by Corporate Payroll and the Quality Assurance Group of Educational Services recently measured employee satisfaction levels with the program. Respondents gave Payroll a 3.8 performance rating out of a possible 4.0. Employees say they like direct deposit because it's convenient, reliable, secure, and flexible.

Harry McKnight, Corporate Operations controller says, "Direct Deposit is good for Digital because it uses Digital's network, technology, products and services. It simplifies payroll procedures and adds greater control and



Some of the "key players" who support Digital's weekly Direct Deposit program are (first row, from left) Trudi Rasmussen, Operations manager; Anna Lipofsky, Administration supervisor; Dawnne Santos, Direct Deposit administrative assistant. Second row, from left, Kevin Mulvey, Output Consultant; Dan Landry, Direct Deposit administrator; Tim Dorian, FAIS Operations supervisor; Ken Bourgeois, Production Control administrator.

reliability while reducing cost to the corporation."

Digital's Direct Deposit program was recently showcased as a model program by the National Automated Clearing House Association (NACHA) in its nationwide publication, "The Corporate Connection."

Adds Leonard, "We are proud of our professional staff who administer this

program and we are grateful to everyone who participates in the program."

If you would like to participate, pick up an Authorization Form from Personnel and forward it to Corporate Payroll. If you need further information about the Direct Deposit program, call Payroll at DTN 223-2463. ●

## Eight writers in Corporate User Publications named consultants

Eight writers in Corporate User Publications have been approved by the Consulting Engineer Promotion Board (CEPB) to receive the title "Consulting Writer." This new job title was created during the Job Evaluation and Classification project. It was modeled after the corresponding consulting titles for engineers, and better defines the career progression for writers.

The eight are:



### Digital This Week

**Editor: Kathleen Nelson**

**DTN 251-1307**

**ENET: @CFO or BARTLE  
::NELSONK**

**Marketplace: Dawn Swindell**

**DTN 251-1308**

"Digital This Week" is published every other week by the Corporate Employee Communication Department of Digital Equipment Corp. for its employees in the Greater Maynard Area.

Dick Buttlar, who was recognized for his work on the SMP documentation in particular;

Andrew Gent, for his writing contributions as well as his contributions to documentation tools;

Michael Fallet, for his noteworthy accomplishment in initiating and developing the SDT layered products documentation architecture;

Dick Howard, for continuing contributions in producing excellent documentation, as well as his activities to promote quality in writing;

Joyce Isen, for her documentation contributions over the long term and for her contributions to the Prolog and Ops5 documentation projects;

Marcia Swezey, particularly for her contributions in the area of internationalization of documentation;

Donna Tramontozzi, for significant efforts in designing and implementing VMS 5.0 online;

Mary Utt, for her innovative, interdisciplinary approach to developing

software from which to build books, and for her contributions to the design of the DECwindows Bookreader.

The CEPB agreed to include writers and editors in the approval process early this year. During the rigorous review process, candidates had to show "evidence of principal contribution to shaping base technology or validated decisions leading to an advance in the usage of base technologies." Candidates also had to show unique technical expertise and demonstrate leadership in the recent development of a successful documentation product or a documentation process having measurable results on current or future business.

Said Sue Gault, CUP manager, "The first eight consulting writers are a resource pool of writing expertise for the corporation. I look forward to seeing that pool grow as others within Publications earn recognition for their contributions." ●



## Hispanic Heritage Week celebrated



*"Hispanics: Breaking Barriers Through Education" was the theme of Digital's recent Hispanic Heritage Week celebration, and the theme of this panel discussion that featured Dr. Edward F. O'Connell of the U.S. Department of Education; Dr. Jose Batista, Digital; Dr. Juan Rodriguez, University of Lowell; and Carolyn Simmons of Digital's Minority and Women's Education and Development Program.*

## Digital Competency Centers established

"To succeed in the 1990s we must provide integrated solutions to customers' critical business needs," explains Bill Ferry, vice president, U.S. Enterprise Integrated Services. "This requires that we improve our ability to use our products, technology, applications, and service capabilities to deliver integrated solutions to our customers' mission-critical applications needs."

"In support of these goals we have developed a plan to establish Digital Competency Centers (DCCs) that will be responsible for developing our mission-critical applications plans and for supporting the selling and delivery of these integrated solutions to our customers. These DCCs will be directly connected to our Engineering and Product Marketing organizations and will be responsible for leveraging our products, technologies, applications, and services in a targeted set of industries and accounts."

The DCCs are a result of a team effort involving Product Marketing, Sales/Marketing, product business units and Enterprise Integration Services. They will be linked internationally and will support implementation of worldwide account strategies and global systems integration capabilities.

The following managers are responsible for implementing the first three DCCs:

**Bob Burke**, Enterprise Integration Services vice president, is responsible for implementing the Discrete Manufacturing and Engineering Competency Center. In this role, he reports to Bill Ferry and Don McInnis, vice president, Engineering Systems Group.

**Bob Russell**, Enterprise Integration Services vice president, is responsible for implementing the Finance/Services Competency Center. In this role, he reports to Bill Ferry and Bill Steul, vice president, Corporate Systems Group.

**Al Pink**, Enterprise Integration Services vice president, is responsible for implementing the Process Manufacturing Competency Center. In this role, Al will report to Bill Ferry and Dave Copeland, vice president, Computer Integrated Manufacturing and Product Development Group.

In addition to the above responsibilities, these managers will continue to be members of their current management teams.

Plans are also being developed for DCCs for Telecommunications, Federal Government and cross-industry applications, such as Office, Electronic Publishing and Accounting. ●

## Digital rates high for working moms

"Working Mother" magazine has once again named Digital as one of the top U.S. companies for working mothers. This marks the fourth time that Digital has appeared on the magazine's list.

"Working Mother's" annual survey, titled "The 50 Best Companies for Working Mothers," included Digital, Apple Computer, the Boston advertising agency Hill, Holliday, Connors, Cosmopolis, Boston's Beth Israel Hospital, Cambridge-based Polaroid, and IBM.

The survey represents "companies that are the most responsive to the needs of working mothers." Companies were chosen based on pay (compared with other companies in the same industry), opportunities for advancement, support for child care, and benefits. ●

## DCU accepting candidates for board positions

The Digital Credit Union (DCU) is looking for candidates to run for its board of directors. The board sets policy, establishes and approves budgets, approves expenditures, authorizes and reviews investments, plans for the credit union's long-term needs, and reviews financial and operational needs.

Prospective candidates may request an application package by beginning Nov. 1 by calling the Communications Department, DTN 223-6735 or (508) 493-6735, Ext. 207 or 239. The deadline for submitting an application is Nov. 30. Candidates will be interviewed by a nominating committee made up of Digital employees.

Candidates not selected by the nominating committee may run by petition, which will be available after Jan. 8, 1990. This year, 500 DCU member signatures will be needed to be a petition candidate on the ballot.

Ballots will be mailed on March 5, 1990 to all DCU members over age 16. DCU elections are supervised by the accounting firm of Peat, Marwick, Main & Co.

The election results will be announced at the annual meeting on April 26, 1990, and over the DCU hotline (DTN 223-3887). ●

## Shrewsbury flea market to benefit United Way

A flea market to benefit the United Way will be held Saturday, Oct. 14 from 9 a.m.-3 p.m. in the parking lot of the Shrewsbury facility (333 South St.). Rain date is Oct. 21. Two parking spaces' worth of selling space is \$12; you keep the profits. Bring your own table or sell from the trunk of your car. Everyone is invited to attend, but only Digital employees may sell items. For more information, contact Paula Scott at DTN 237-3875, or Rebecca Kneeland at DTN 237-2904. ●



## INSPECT: a tool for information security

INSPECT, a new software tool that tests Digital's computer systems for compliance with computer security policies and procedures, has been successfully piloted in the Manufacturing/Engineering/Product Marketing organization.

INSPECT, the Interactive Network Security Policy Examination/Compliance Toolset, addresses many of the policy's requirements for reliable, comprehensive monitoring of computer and network security. Running in the "background" as far as managers and users are concerned, INSPECT can monitor any and all of the following areas or subsystems: files, accounts, network, SYSGEN (system generation) parameters, and audit analysis. The checks are performed in great detail, and comprehensive reports on security conditions are generated. Furthermore, INSPECT actually recommends "fixes" to bring the system up to compliance with policy.

To ensure compliance with computer security policy, INSPECT automatically performs a required security inspection of the entire system once every 28 days. Its results are then automatically reported to a pre-determined business location.

INSPECT is meant to assist system managers in complying with the Computer Security Policy. A system manager can initiate additional inspections at any time, and of any size or scope. For example, a manager can perform a "spot inspection" of only the account subsystem, and, within that subsystem, of only the privileged accounts. Or, the manager may decide to have IN-

SPECT monitor every thing except SYSGEN parameters. The lockdown file — which contains recommended fixes to any security problems or non-compliances — is optional in all cases.

### Adaptable, easy to use

Besides being adaptable to specific system security needs, INSPECT is easy to use: a small set of menus and displays controls all discretionary functions. Under normal circumstances, running INSPECT will have little or no effect on system performance.

The primary goal of the compliance effort is the installation of the INSPECT tool on all M/E/M registered VMS nodes, so that the fundamental inspection requirements can be met. Says Jim Cudmore, vice president of Engineering Product Operations responsible for M/E/M security, "We will then ask each system manager to ensure that all the 'standards' documented in the computer security policy are implemented on each network node for which the manager is responsible." INSPECT is currently being installed on all M/E/M registered VMS nodes.

The first task in securing compliance, adds Jim, is to "create a worldwide Computer Security Policies and Procedures document and the supporting toolset (INSPECT) for node-level security. That's now complete. Both the policy and the toolset were announced at Spring IDECUS and have been tested at multiple M/E/M locations."

Jim says that the first four to six months of toolset installation will be

used as an educational process. Awareness, understanding, and ease of doing business are the goals. "At that point we will concentrate on policy implementation and will begin to monitor all nodes for compliance and take corrective action in case system owners fail to follow the policies and procedures."

Concludes Jim, "Having a network security policy is crucial in today's distributed information environments. At Digital, with our worldwide network, the need for a policy is especially important. The network is a vital part of our way of doing business. If it isn't appropriately secured, it can provide opportunities for unauthorized access. Having a policy, and having the procedures, standards, and tools to monitor compliance, is the foundation for protecting our intellectual property." ●

## In memoriam

Ann Clancy, Finance manager for the Advanced Semiconductor Development (ASD) Group, Semiconductor Manufacturing and Technology organization (SCMT) in Hudson, died suddenly on Aug. 1. She would have celebrated 20 years with Digital this month. Ann began her career at Digital in the Mill in one of the Accounts Payable groups.

She was a member of the Engineering Task Force and was a financial representative for Digital in the SEMATECH Consortium. She also was involved in Littleton's Theater Group.

Ann is survived by her husband and her mother. Memorial contributions may be made to the American Heart Association, Central Massachusetts Division, 23 Midstate Drive, Auburn, Mass. 01501.

John DiPietro, LESM Employment manager for Maynard and Boxboro, died on Sept. 6. John had been with Digital for the past 13 years and was known in the Employment community for his technical expertise and commitment to Digital's success.

John is survived by his wife, Mary, two children, and grandchildren. ●

## Dennis Pearce named Administration manager for Educational Services



Dennis Pearce

Dennis Pearce has been appointed Administration manager for Educational Services, reporting to Pat Cataldo, vice president, Educational Services, and to Mike Kalagher, U.S. Administration manager. In his new role, Dennis will be responsible for the manufacturing and distribution operation, pur-

chasing and U.S. Area administration. He will also manage Educational Services Registration and Facilities and will drive integration and synergy of MIS activities across all Educational Services' functions.

Dennis has been with Digital for 13 years. In his most recent assignment, he was Educational Services Manufacturing/Distribution manager responsible for worldwide distribution of Educational Services' products. He will be located in Bedford, Mass. ●



# The Marketplace

## How 'The Marketplace' works

"The Marketplace" is a free service provided by *Digital This Week* for Digital employees in the Greater Maynard Area. Ads are printed on a first-come, first-served basis, as space allows, regardless of category. If your ad is time-sensitive, keep in mind that ad volume is heavy, so you should allow four to six weeks for your ad to appear in print.

1. When submitting an ad, please include your full name, mailstop, and internal telephone number (DTN).
2. Please submit only one ad at a time. Multiple submissions will not be accepted. Ads will appear only once.
3. Ads must be submitted in writing (hard copy) and sent to Marketplace, CFO2-3/K23.
4. DTW does not print ads for services (babysitting, snow-plowing, etc.) or profit-making enterprises. Ads must be worded clearly, typewritten or printed, and in good taste. DTW reserves the right to edit for space.
5. Ads can be cancelled simply by calling the Marketplace office. If an item has been sold, please cancel the ad so that space can be opened for another listing. If you have any questions about the Marketplace guidelines, call the DTW office at DTN 251-1308.

## Seasonal Rentals

PROVINCETOWN, condo, 1bdr, directly on beach, deck, heated, \$600/wk, \$500/off season, Mary, 223-4053

N CONWAY, chalet, 3bdr, slp 8, wd stv, furn, priv bch on Saco Riv, hike, ten, canoe, wk/wknd, Bob, 297-4465

HILTON HEAD, condo, 2bdr, 2ba, pool, wk to ocean, fr tennis, r-bail, golf, \$475/wk, Pat, 223-8117

LOON MTN, townhse, slps 8, indoor pool/jacuzzi, fall/ \$325/wknd, Dec-Apr, \$5200, Bryan, 223-9940

ORLANDO FL, ultra lux condo, Vistana resort, 2bdr, nr Disney World, furnished, \$700/wk 51, Mark, 227-3326

ORMOND BEACH FL, 2bdr home, ful equip, ac, slps 6, nr all attract, beach, \$300/wk, \$1000/mo, Kate, 249-4219

LOON MTN, condo, slps 6, in/out pool, sauna, tennis, hike, Peggy, 223-8796

BREWSTER, Ocean Edge, 2bdr, 2ba, condo, Sept/Oct, off season rates, wk/wknd, Linda, 223-6863

SUNAPEE AREA, contemp, 3bdr, 2ba, prplc, mtn view, x-cntry/alpine skiing, Bob, 223-9150

WHITE MTNS, 1kfrnt, furn, frpl, slps 8, nr Loon/Cannon/ Montauq/Bretton Wds, chalt, \$500/wk, Marcia, 251-1440

KISSIMMEE FL, timshr, wk 7, slps 6, eqpd kit, a/c, pool, 5 min to Disney Wld/Seawld, \$1k/80, Kate, 251-1307

N CONWAY, new condo, mtn views, nr slopes, jacuzzi, 3bdr, 2.5ba, seasonal rental avail, Mike, 297-5940

OCHO RIOS JAMICA, beachfront condo, pool, from \$550/wk, Shelton, 297-2998

KILLINGTON, ski house, avail mid week, slps up to 14, great loc, \$150/night, Blake, 221-5879

WINTER PARK CO, 3bdr condo, 2.5ba, slps 8, ful equip, sauna, pool, avail 12/29-1/5/90, \$1400, Peggy, 283-7492

N CONWAY, 2bdr, 2ba, prime loc, call for details avail 12/15-4/15, Denis, 244-6919

LOON MTN, condo, slps 4, all amenities, nr foliage, hiking, skiing, wk/wknd rates, Linda, 223-5084

LOON MTN, studio condo, slps 4, pool, whirlpool, sauna, shuttl bus, nr shops, \$190/wknd, Lori, 296-4305

MARCO ISLAND FL, lux condo, 2bdr, 2ba, balcony facing ocean, all amenities, Rick, 289-1179

WHITE MTNS, overlook Loon Mtn, 3bdr, 2ba, condo, pool, ten, jacuzzi, frplc, grt view, Dick, 223-9695

LOON MTN, 2bdr townhse, slps 6-8, frplc, jacuzzi, clubhouse, sauna, indoor pool, George, 223-8713

ORLANDO FL, timeshare, nr Disney World, slps 6, fully equip, all amen, avail 12/16-23, \$485, Wong, 297-2788

BERMUDA, 2 rm suite, slps 4, balcony w/ocean view, tennis, pool, \$1250/wk, Dianne, 227-3357

N CONWAY, Linderhof chalet, 3bdr, fldstn frplc, liv rm, mod kit/ba, avail 12/1-4/15, Michael, 232-2665

ATTITASH MTN, studio, slps 4, kit, cable tv, pl/sauna, frplc, lmtd lft tckts, wk/wknd, Mike, 223-4946

LAKE WINNI, 3bdr townhse, scenic wk, nr ski + xc, frplc, amenities, wk/wknd, fall/winter, Alan, 297-2979

LACONIA, timeshare condo, 2bdr slps 6, 1 wk before Jan, \$500/wk, Dick, 297-4409

WHITE MTNS, Loon area, slp 6, 2bdr, 2ba, avail wk/wknds, ful equip, hiking, tennis, pool, Bill, 249-1390

WINTER PARK CO, 3bdr condo, slps 8, 2.5ba, ful equip, avail 12/29-1/5/90, \$1400, Peggy, 283-7492

BOCA GRANDE FL, gulf frnt condo, 2bdr, 2ba, pool, ten, boat slip, \$350/wk thru 11/18, Denis, 223-0927

N CONWAY area, ski chalet, nr major ski areas, slps 7, all appl, mtn view, \$175/wknd, Cornel, 226-5501

LOON MTN, condo, 1bdr, slps 4, indr pl, ski across st, restrnt, avail 2/25-3/3, \$650/wk, Jacqui, 297-3285

ST MAARTEN, Netherland Antilles, ocean front condo, all amenities, slps 4, Bob, 223-7557

LOON MTN VILLAGE, time share condo, float ski wk, 1 bdr, slps 4, 2 indr pls, \$600, Angelo, 296-3278

WATERVILLE VALLEY, condo, slps 6, includes access to sport center, Alex, 296-4358

## Appliances

RANGE HOOD, like new, \$50; REFRIGERATOR, Kelvinator, 18cu ft, white, 12 yr old, \$125, Elena, 293-5051

DISHWASHER, Whirlpool 5000, portable/can be built in, almond, 2 yrs old, \$250/80, Jeff, 226-6984

19" TELEVISION, Zenith, 1.5 yrs old, cable ready, \$160, Angela, 297-7577

ELECTRIC DRYER, Maytag, 5 yrs old, top of line, white, \$225, Ted, 223-1284

WASHER, C.E. Hotpoint, seldom used, exc cond, lg capacity, white, \$100, Lisa, 297-5281

MICROWAVE, Sharp carousel, prgrmb1, 25"Wx15"Hx17"D, 4 cook temps, used 5 times, \$150/80, Toni, 223-3130

## Cars

'86 BMW 635 csi, mint cond, 45kmi, automatic, leather int, \$30k/80, Anita, 251-1413

'79 TOYOTA COROLLA, 4 spd, good tires, hi miles, \$250, Lou, 249-1604

'80 TRANS AM, gold, 71kmi, ac, auto, loaded, new brakes/exhaust/alternator, \$4000, Jan, 244-6804

'84 BMW 318i, grey auto, exc cond, ac, am/fm/cass, snrf, alarm, \$7.5k, David, 296-5092

'85 DODGE LANCER, (ES) turbo, auto, frnt whl dr, loaded, 46k mi, \$4500, Dan, 225-4486

'82 CHEVETTE, hatchback, \$500/80, Lillian, 223-4427

'81 CHEVETTE, diesel, well maint, tuned, new exhaust, 44mpg, grt car, \$675, Deanna, 223-9759

'87 PLYMOUTH VOYAGER, 5spd, std, ac, 45k mi, white ext w/maroon int, \$8200, Cary, 291-9954

'86 OLDS CUTLASS, cruiser wagon, 52k mi, ac, am/fm/cass, pr dr, exc cond, \$6800/80, Linda, 297-5416

'87 VW JETTA GL, ac, thft prf ster cass, fctry snrf, 5spd, 34mpg, must sell, \$7500/80, Michael, 234-4750

'85 CHEVY SPECTRUM, grey, auto, 2dr hatch, fwd, grt cond, 65k mi, \$1000/80, Cathy, 262-8342

'75 PLYMOUTH VALIANT, slant 6, 3spd, 4dr, 108k mi, well maint, reliable, Anne, 225-6876

'87 CHEVY BLAZER 4x4, rd/wht, 5spd, ac, tahoe pkg, alpine, 44kmi, exc cond, \$9800, Andrea, 240-6213

'81 CUTLASS SUPREME, 2dr, 6cyl, am/fm/cass, runs well clean int, \$1450, Len, 234-4751

'86 PONTIAC T1000, 2dr hatch, auto, 29k mi, exc cond, \$2500, Fran, 247-2033

'84 DODGE CHARGER 2.2, 83k mi, Janet, 248-4128

'82 MAZDA 626, std, 4dr, very dependable, needs front tires, \$800/80, Paul, 244-6529

'85 PONTIAC TRANS AM, red, t-tops, ac, alpine stereo, pwr win/lck/seats, cruise, \$6900/80, Jackie, 297-2728

'85 MERCURY TOPAZ, 4dr, am/fm/cass, ac, auto, gd int/ext cond, nds motor, \$2000/80, Ernestine, 227-3000

'89 DODGE, pickup, 6" bed, 4x4, auto, 4cyl, sport tires, am/fm, well maint, 20kmi, \$13k, Jeff, 251-1218

'89 NISSAN, 4x4, extended cab, red/grey int, 15kmi, loaded, 5spd, \$11.5k, Ben, 273-5520

'85 VOLVO 740, turbo, silver, all power, am/fm/cass, ac, snrf, 70kmi, exc cond, \$13k/80, Colleen, 223-2985

'75 MG MIDGET, red, new paint, wire wheels, 10 mi, 80 over \$2000, Judy, 297-2693

'87 TOYOTA COROLLA FX16, vy gd cond, 53k mi, 5spd, snrf, 2 sec sys, am/fm/cass, \$6300, Steve, 223-2219

'79 TOYOTA COROLLA, new brakes/exhaust/shocks, 4dr, needs body work, \$500/80, Jamie, 229-7108

'64 CORVETTE ROADSTER, 327 engine, matching numbers original, \$20k/80, Dieter, 297-2019

'84 MAZDA RX-7 GSL, white, w/maroon lthr int, 5spd, Chapman lock, glass snrf, 69kmi, \$2600, Jan, 247-2293

'81 DATSUN 310GX, new alternator/starter/clutch/muffler, 80kmi, hatch, 5spd, \$650/80, Betsy, 262-8489

'82 MERCEDES 240D, white, blue lea int, exc cond, maint records, \$9100, Darryl, 224-1568

'87 ALFA ROMEO MILANO, platinum edition, 5spd, 52k mi, 6cyl, new tires, exc cond, \$9.5k, Judy, 297-4806

'85 NISSAN MAXIMA SE, fr whl dr, 6cyl, pwr steer/lck/win/snrf, air, 5spd, 63kmi, \$7000/firm, Deb, 226-5796

'87 MERKUR XR4Ti, 16kmi, runs grt, like new, auto, pwr drs/lcks, moonrfr, Chapman, \$12.5k/80, Mike, 226-2539

'82 SUBARU GL, wagon, ac, am/fm, 5spd, 110khiwy mi, many new parts, exc cond, \$975/80, Michael, 273-5244

'84 PONTIAC FIERO SE, exc cond, \$-negotiable, Letha, 249-4586

'83 BUICK REGAL, vy gd cond, new batt, 2 new frnt tires, 70kmi, \$4500/80, Millie, 240-6577

'86 PONTIAC GRAND AM, v6, auto, 2dr, am/fm/cass, snrf, 80khiwy, gd cond, \$4700/80, Robyn, 297-2860

'81 PONTIAC GRAND PRIX, 2dr, white, ac, am/fm, rear defog, ps/pb, hi mi, vy gd cond, \$1700, Mike, 273-5548

'87 NISSAN PULSAR NXSE, blk, t-tops, ac, ster cass, new tires, 30kmi, rmv hatch, \$9400/80, Steve, 244-6072

'87 MERCURY CUGAR LS, silver, blu plush int, loaded, 2dr, snrf, clean, nds wrk, \$5000/80, JoAnna, 292-2295

## Furniture

SLEEP SOFA, queen size, love seat, chair, navy w/beige flecks, colonial, \$1500, Anna, 289-1413

MAPLE TABLE, 3"8" x 30" \$120; SLEEP SOFA, \$120; WING CHAIR, \$90, ELENA, 293-5051

QUEEN ANNE CHAIR, emerald green velour, cherry legs, like new, \$150/80, Linda, 226-5901

2 CASTRO CONVERTIBLE, hassock style single beds, \$50/ea or 2 for \$90, Ruth, 279-3199

SPINDLED CRIB, exc cond, incl mattress/sheets, \$65/80, Holly, 297-7846

ANTIQUE OAK TABLE/CHAIRS, 48" round clawfoot expan table, 6 chairs, need refin, \$350, Brenda, 226-7314

WATERBED, queen sz, solid oak, attached night stands, exc cond, \$285, Paula, Mon/Wed, 297-7602

COFFEE TABLE, oak, oval, removbl glass top, med fin, like new, 44"x25", \$175/80, Sharon, 291-7703

RECLINER, extra lg, fabric cover, \$250; LIVINGROOM, sofa, loveseat, chair, \$350, Ralph, 244-7115

## Miscellaneous

WOOD STOVE, Noble, princess model, steel, firebrick lining, used 1 winter, \$250, Bob, 287-3240

10 KITCHEN CABINETS, mahog veneer, \$250; SHELVEING; CHINA, 12 sets, \$40, GUITAR, \$40, Elena, 293-5051

JENSEN WOOD/COAL BOILER, never used, connects to existing heat sys, \$1200/80, Debra, 282-1466

POOL, aluminum, 24" round above ground, walk around deck, filter, \$1500, Bev, 225-6139

BASEBALL CARDS, Floor-86/87, \$125; 87/88-\$30; 88/89-\$15; Topps, 74/75, 77/82, Roger, 247-2005

continued on page 6



## Miscellaneous

*continued from page 5*

ANTIQUES, CUSTOM FURNITURE, CHINA, LAMPS, QUILTS, PORCELAIN DOLLS, ANGELA, 247-2259

SHUTTERS,indr louver,4"7"x18",4"11"x18",4"7"x22",4"11"x22"8"6.5"x23,wlnut,hrdwr,\$25,Carol,297-2221

CAR STEREO, Pioneer supertuner III, KE-5353, Alpine 3505 amplifier, \$200, Pete, 234-4223

GLASS DOOR FIRESCREEN,antique brass,like new,sz 28-37"W x 24-32.5"H, \$60, Christine, 226-4496

FUR JACKETS, racoon, sz 10 or smaller, \$500; rabbit, dk brown, \$75, Kathy, 262-8262

PLAYER PIANO, white paint over cherry wood, \$1000, Anna, 223-5344

VHS VIDEO CAMERA, Sylvania, color, has title/date/time/function, \$500, Paul, 240-6563

ORGAN, Lowrey genie 44, recorder, headphones, microphone,instr tapes/books,\$500/80,Sy,223-8568

MAN'S DIAMOND RING, 14k gold, 1carat box mount, appr \$3k, \$1200/80, John, 297-3783

COAL STOVE,burns pea coal,Belgium made,Anthracite 20 50lb bags+600lbs loose,\$150/80,Sheila,234-4222

2 EVINRUDE OUTBOARD MOTORS,77 4.0hp,runs,\$125; 63 3.5hp fisherman model,\$75,Rod, 223-5201

TAPE DECK,Pioneer,70's vintage,\$35,Rod,223-5201

HAY,for mulch,\$250/bale,hay of Timothy/clover/alfalfa,\$325/bale,cheaper by ton,Lois,237-3363

CHAPPEE BOILER,burn wood/coal,\$800,Ralph,244-7115

2 SEWING MACHINES,Singer,older models,stands,need cleaning/adjusting,\$30/ea,\$50/both,Skip,297-6590

QUILTED JACKET, lg sz, pale gold/pink embroidery, waist length, \$50/firm, Rosemary, 234-4267

GUITAR,Fendor Stratocaster,57 vintage,reissue, blk/wht,vintage case,extras,\$625,Lou,237-2781

COLUMBIA U. GRADS, 10 Wedgewood plates, campus scenes, for gift?, \$250/80, Bamby, 223-6792

COAL STOVE,upright Penn,used 3 seasons,good shape, \$250, Mark, 291-9864

AIRLINE TICKET,Pan Am,round-trip,economy,US/Mex/Carib,by 12/15,incl Sat,\$225/80,Tandy, 234-4382

CALCULATOR, Hewlett-Packard, model 12C Business/Financial, like new, \$30, Al, 283-7477

WEAVING LOOM,12 harness,60"W Verga Ullmann,hwd mtchrch,deluxe loom bench,\$1700,Arthur, 297-3792

2 LAMPS,29", glass/brass, shades, exc cond, \$-negotiable, Letha, 249-4586

COMPUTER SYSTEM,Commodore 128D, many accessories, hardware, software, \$600/80, Bill, 287-3514

SNOW TIRES,Goodyear Eagle P215/65R15, mud/snow, raised white let, used 4 mos, \$150,Bill, 229-7957

FUR COAT,ladies sz small,car length,blue fox corduroy style,appraisal,\$500,Kim,223-7970

## Motorcycles

84 HONDA ASCOT 50, gd cond, low mileage, cover, 2 helmets, \$1500/80, Marco, 223-8444

87 KAWASAKI KX500, bought new 4/89, 15 hrs,full face helmet, gloves, \$2700/80, Darlene, 225-4345

82 YAMAHA VIRAGO 750,bought new in '85,14kmi, runs/look great,sissy bar,\$1200/80,Pete,223-6645

## Pets

SIAMESE KITTENS, sealpoint, ready end of Oct, booster shot, \$125, Jeff, 223-4560

ROTTWEILER PUPPIES,AKC reg,8 m/l f,born 9/5,ready to go 11/1,lg wd/fam/prot,\$500,Dana,223-6597

COCKER SPANIEL, f, 7mos, buff, nds gd home, lots of love/attention, \$300/80, Cathy, 228-5166

FREE CATS,2 neutered males,1 white/orange long hair,lgrey tiger,double paws,moving,Kobe,234-4033

FREE KITTENS, to good home, 2 f, black/white, avail Oct 10, Millie, 272-7020

## Real Estate

FRANKLIN/BELLINGHAM, new twnhse,3 flr,2bdr,1.5ba, oak kit,2mi-495,\$3k credit,\$103k, Marci, 276-9385

HARVARD,5bdr deekhse,2-ba,frplc,2 acre + barn, grt loc,\$263k/purch/\$1300/mo rent,Anne,296-4851

ATTITASH MTN,furnished studio condo,slps 4-6,kit, cable tv,frplc,sports club,\$69k, Mike,223-4946

LITTLETON, new 2300 sq ft gambrel, 4 bdr, 2.5ba, 2 car gar, cent air, \$339.9k, Joan, 273-5148

HUDSON,expansion cape,3-4 bdr,2 car gar,deck, breezeway,in ground pool,\$195k, Sally, 225-4510

DRACUT,spacious condo,2bdr,new kit,strg sheds, pkgng,huge yd,no fee,\$79.9k,Sheryl,289-1041

WESTFORD,land,8 acres,lg hammerhead lot,approved septic,all wooded,\$89.5k,Mike,293-5650

CHELMSFORD, 3/5 bdr ranch, 2ba, fin bsmt, frplc, owner pays \$3k closing, \$172k, Sheila, 287-3111

LINCOLN NH, Loon Mtn village, bldg lot, wooded, 4 season,has fl plan,exc view,\$51.5k, Ken, 291-9988

LEOMINSTER, 2fam, gd loc, nr rts 2/190/117, 2bdr units, off st pkgng, \$150k, Norma, 241-3788

FITCHBURG/LUNENBURG LINE,2fam,5rms/2bdr ea,1/4 acre,lg shed,res/comm,\$136.9k,Carolyn, 229-7410

FRAMINGHAM, 5rm condo, 2bdr, pool, ac, sunny corner unit, \$89.9k, Rich, 291-0421

N BELLINGHAM,Georgian col,brick frnt,3bdr,1ba,fam rm,hwd fls,2frplc,nr 495,\$154k,Diane,297-4178

TEWKSBURY, 4bdr garrison, on cul-de-sac, 1 acre, new oak/tile kit, pool, \$225k, Peter, 251-1345

SUGARBUSH, 1bdr, frplc, furn, tennis, pool, exc rentals,on-site mgr,financing,\$77k,Liz,226-4869

BOXBORO,2bdr condo,recent renov,new kit appl, carpet,\$108k/considr serious offer,Julie,276-9898

SPRINGFIELD, 5rm ranch, 3bdr, fenced yd, pool, deck, 1 car gar, rec rm, \$115k/80, Rene, 278-4421

HAVERHILL,2fam,sep util,fully appl,gas heat/appl, mod kits,2bdr/3bdr,many amen,\$133.9k,Dawn,223-7963

ACTION/NAGOG WOODS, twnhse, 2bdr, 1.5ba, frplc, deck, tennis, pool, \$148k, Susanne, 276-9191

CAPE COD TIMESHARE,use worldwide,3wks accumulated prem time,slps 6,avail,Best Offer,Jane,297-2927

N CONWAY AREA, beautiful large 2bdr condo,spectac Mt Wash view, low 90s, Terry, 291-8255

MARLBORO,4story twnhse,7+rms,1.5ba,ldry rm,lots of built-ins,ac,low fee,\$165k,Diane, 297-3829

AMHERST NH,3bdr cape,lacra,fam nghbrhd,nr DEC, \$10k rebate at close, \$149.9k, Bill, 297-4922

FRAMINGHAM, studio condo, central location, \$52.9k, Patty, 297-2277

SEBAGO LAKE,summer cottage,boat house,100'water front,slps 8-10,frplc,prch, \$115k,Clint,275-2162

WORCESTER,2fam,5rms ea,fl bsmt,dormer attic, hwd flrs,2car gar,exc loc,\$159.9k,Jackie,297-3773

MILFORD,garr col duplex,2bdr,1.5ba,e-1 kit,frplc, deck,fl bsmt,nice nghrbhd,\$123k,Bonnie, 291-0490

CLINTON,Ridgefield condo,2bdr,2ba,end unit,gar, frplc,ten,pool,exer club,\$139k, Colleen, 296-5754

SEBAGO LAKE ME,Frye Island,1/3 acre lot,12 bchs, golf,tennis,pool,ferry service,\$25k,Dan,291-7781

HOPKINTON,Lake Whitehall,8rm split, 3-4 bdr, gar, fenced yard, cul-de-sac, \$179.9k, Ernie, 296-5459

FRAMINGHAM,8 rm raised ranch,4bdr,2.5ba,frplc,2 car gar,nice neighborhood,\$235k,Paul,268-3568

MAYNARD,restored victorian,huge fam kit,3bdr 2ba,lg deck,new plumbing, \$240k,Holly,244-7465

BRADFORD,twnhse condo,2bdr,1.75ba,e-i-kit,sliders to deck,low fee,\$118k,Millie,240-6577

## Recreational Vehicles

78 VICTORIA BAYLINER, 350/260hp chevy eng, head, galley,loaded,a must see,must sell,Cathy,294-5721

87 VACATION HOME ON WHEELS,Coachman,27' motor home,12k mi,loaded, Rita, 508/278-3153

86 SUSUKI ATV, 4 wheel, 185, exc cond, \$1000/80, Letha, 249-4586

78 VICTORIA BAYLINER, 350/260hp chevy eng, head, galley,loaded,a must see,must sell,Cathy,294-5721

SAILBOAT, 11' Super Snark, unsinkable, great for young sailors, \$100, Barney, 297-4374

85 32' PRO-LINE,wlkarnd cuddy,84 Merc 150,trlr,3 insulated fish boxes,\$17.5k/80,Joan,244-6318

87 LAYTON CELEBRITY,29' travel trailer,fully equip,many extras,immac,\$12.5k,Karen,247-2738

## Rentals

OGUNQUIT ME,3bdr home,off seas rental,short walk to ocean,avail 10/1-5/20, \$475/mo, Paul, 297-4582

GARDNER,2bdr apt,lg bright lr,bay window,central location,avail 9/15,\$600+util, Laura, 226-7664

MERRIMAC NH,twnhse condo,2bdr,3rd fl loft,skylite 1.5ba,1140 sq ft,\$750+util,Kevin,225-6936

TYNGSBORO,2bdr condo,avail 11/1,ful appl incl wshr/dryr,\$750,option to buy,Pat,244-6547

ACTON,1bdr condo,pool,tennis,patio,wshr/dryr area 1trg rm,ac,\$695/mo,avail now,Bill,297-2666

GARDNER,ranch,quiet nghrbhd,1.2 acre,3bdr,deck, wlk out bsmt,\$825 + util,Tom, 296-4146

HUDSON,nr 495/290,3bdr,w/w,lg kit/new cabnbs,lg scrn prch,avail immed,\$1100,Kim,297-2324

LEOMINSTER, 1bdr, recently remodeled, avail 11/1, \$425 + util, Dieter, 297-2019

LEOMINSTER,2bdr apt,2nd fl,appliances,hookup,nr 2/190/shopping,avail Nov,\$585+util,Carol,273-5765

MALDEN,2bdr apt,Victorian home,3rd fl,lux kit,lot closet,ref req,avail 10/1,\$875+util,Rita,291-7756

CHELMSFORD,4bdr hse,lr,dr,fr,2.5ba,2 car gar,no pets/smkr,\$1200+util or sell \$229k,Jason,226-2660

N ANDOVER,stairs avail,daily turn out,indr arena, outdr fibar dressage arena,\$360/mo,Cathy,283-7476

WORCESTER, 4rm apt, hardwood floors, washer/dryer hookups, garage, Charles, 225-5433

STOW, nonsmkr, private bed/bath/living rm, shr kit, no pets, Jean, 251-1243

TOPSFIELD,housemate,2rm suite,ba,strg,pkng,shr kit/ldryr/garden,unfurn,\$600/mo,Nancy,223-6763

WESTBORO, 2bdr, 1ba, ground level condo, ac, \$725/heat + util, Eric, 297-3278

CHELMSFORD,1500 sq ft lux condo,29'mstr bdr,8x8 walk in closet,2bdr,2ba,2 balconies,Ann,223-2252

## Roommates

STONEHAM,f,nonsmkr,grt loc,nr 93/95,condo,2bdr, 2ba,pl,secur,pkng,\$430+1/2 util,Claudia,275-2181

BOLTON,m/f,shr 1820 colonial,lg yd,garden,new cntry kit,pets ok,\$390+1/2 util,Fred,292-2084

MAYNARD, nonsmkr, shr modern 3bdr duplex, 1.5ba, rural, off at pkgng, Rich, 269-2191

BOYLSTON, f, nosmkr, shr 5.5 rm condo, nr rt 290, off st pkgng, \$70/wk incl util, Mary, 297-2279

MARLBORO, f, prof, 25+, nonsmkr, shr lg 3 bdr apt, no pets, \$234 + 1/3 util, Wendy, 278-4451

MILFORD, f, nonsmkr,shr 2bdr condo,wshr/dryr, off st pkgng, yard, \$350 incl util, Annette, 297-4228

WORCESTER,m/f,shr 3bdr contemp twnhse,avail immed 5 min to 290/90, \$275 + 1/3 util, Ellen, 276-8653

NEWTON,f,shr 3 bdr home,Chestnut Hill area,vonv to 128,avail Oct,\$425 + util, Pat, 292-2577

## Sporting Goods

BOYS BMX JETTER DIRT BIKE,\$50/80;PING PONG TABLE, lg, access, \$50, Elena, 293-5051

LADIES SCUBA GEAR, wet suit, buoyance vest, sz med, \$400, Anna, 289-1413

ROWING MACHINE, Anna, 289-1413

SOLOFLEX, basic unit, 3 years old, like new, \$600, Jim, 234-4520

LASER ROWING SHELL, new cond, '88 recreational model, \$1050, Dave, 275-3216

RACING SHELL,Hurka "Equipe", for light or mid weight person,used 1 sea,\$2700, Cully, 291-9947

2 MEN'S BIKES, 10 speed, 26" wheels, good cond, \$50/ea/80, Walter, 225-4593

## Wanted

WATERTOWN VALLEY, winter condo rental, 2-3 bdr preferred, Bruce, 225-6235

ROOM WANTED, prof male, lives on cape, needs rm Mon-Thur, Hudson/Marlboro area, Dick, 223-6965

NORDIC TRACK or similar ski simulator, Judy, 297-2693

USED NORDIC TRACK 505, Sandi, 223-1972

BASEBALL CARDS, to add to 9 year old boy's beginning collection, Sophia, 249-4089

DRAFTING/DRAWING TABLE,adjustable,to be used by artist,no mechanical arms necessary,Bill,296-4270

MODEL HORSES,to purchase for collector daughter, Hutch, 268-3340

KILLINGTON AREA, ski house for seasonal rental, Rod, 223-5201

TOPPS FOOTBALL CARDS,any years,complete sets included waxed, Steve, 232-2443



# Educational Opportunities

## Technical seminars

This is an integrated calendar of the Technical Seminar Series (TSS). For a complete listing of seminar locations and contacts, consult LIVE WIRE, Digital's electronic news system.

Oct. 5, 9-11 a.m., MRO1-3

*"The Graduate Engineering Education Program (GEEP)"*

Lee Peterson, Digital

Oct. 5, 10-11 a.m., ZKO

*"Hermes: Constructing Highly Distributed Applications with Mobile Objects"*

Percy Tzelnic, Digital

Oct. 6, 10-11 a.m., ZKO

*"Scientific Data Visualization/Perception"*

Ronald Pickett & Georges

Grinstein, University of Lowell

Oct. 12, 9 a.m.-noon, MRO1-3

*"Fundamentals of Signal Integrity"*

Rick Dischler, Digital

Oct. 12, 9:30-11 a.m., DLB12

*"Using Models for Integrated Systems"*

Steve Lipka, Digital

Oct. 12, 9-11 a.m., HLO (MTW)

*"The Graduate Engineering Education Program (GEEP)"*

Lee Peterson, Digital

Oct. 13, 10-11 a.m., ZKO

*"Competitive Information"*

Charlie Frean, Digital

Oct. 16, 9:30-11:30 a.m., MRO1-3

*"Reliability Management"*

Joe Dzekevich, Digital

Oct. 25, 10 a.m.-noon, HLO (MTW)

*"Implementing JIT in Wafer Manufacturing"*

Madhukar Joshi, Digital

Nov. 1, 9:30-11 a.m., DLB12

*"Adaptive Learning of a Dynamic Process" (Machine Learning)*

Dr. Yoh-Han Pao, Case Western

Reserve University ●

## IST course offerings for fall/winter

DECnet/VAX Network Security (EY-A218E-LO), Oct. 30-31 and Nov. 20-21. This course is designed for anyone responsible for maintaining security in a DECnet environment.

VAX/VMS Internals and Data Structures (EY-4375E-LO), Oct. 30-Nov. 10, Dec. 11-22, and Jan. 15-26. This course would be of interest to anyone who requires an extensive understanding of the components, structures and mechanisms contained in the VMS operating system.

To register by phone, contact Central Registration at DTN 249-4670, or (617) 276-4670. You can also register electronically by sending mail to FSTVAX::BUOREG. Be sure to refer to the course number when registering. Both courses will be held at the Bedford Training Center (BUO).

For more information or a detailed course description, send mail messages to FPOVAX::KLEE. After Oct. 16, send mail to CECV01::KLEE. ●

## 'Managing Change' offered by DME

'Managing Change — Strategies to Achieve Organizational Goals' (EY-4012E-S0) is a four-day residential program in effective change management offered by Digital Management Education (DME). It is specifically tailored to enable mid-level managers to plan change and integrate the dynamics of change for organizational groups and individual levels.

The course will be offered Oct. 24-27 and Dec 4-7. Contact the registrars at DTN 249-1880, -1881, -1882 or (617) 276- plus the four-digit extension for more information. ●

## Boston area November seminars

For registration information, call DTN 249-4380 or (617) 276-4380.

Understanding VMS Internals:  
A Technical Overview

Nov. 6-9 EY-A775E-S0/DY

VMS Principles of Operation

Nov. 13-14 EY-6793E-S0/DY

Designing Security into VAX/  
VMS Applications

Nov. 13-15 EY-9246E-S0/DY

Design of Applications on a  
VAXcluster

Nov. 29-Dec. 1 EY-6935E-S0/DY

X.25 and P.S.I. Technical Overview

Nov. 30-Dec. 1 EY-A917E-S0/DY ●

## Reliability Seminar set for Oct. 25

The first annual Digital Reliability Seminar will be held Wednesday, Oct. 25, 8:30 a.m.-5:15 p.m. in the Cafeteria Annex, HLO2-2 (Hudson). The seminar is sponsored by U.S. Manufacturing System Reliability Engineering (USM SRE) and Semiconductor & Interconnect Technology Quality & Reliability (SCIT Q&R).

Presentations are 30 to 45 minutes long, with about 10 minutes set aside for discussion. Scheduled presentations are: "Wearout Processes in CMOS Technology;" "Reliability/Availability Modeling with Stochastic Petri Nets;" "A Method of Measuring the Availability of Digital's Systems in the Field;" "A Complementary Approach to Infancy-Analysis and ORT Reduction in Disk Drive Manufacturing;" "SMT Single vs. Dual Sided Modules — A Case Study;" "Power Reliability — Past, Present, and Future;" "Solder Joint Thermal Fatigue Life Predictions for 50 Mil Pitch Leaded SMT Devices;" "Infant Mortality Modeling in SCIT — Methods and Results."

The conference is full, but copies of the eight presentations/papers are available. Send your name, organization name, and ENET address to Gary Kushner (VETT69::KUSHNER). ●



## New self-paced courses from Ed Services; new titles from Digital Press

When ordering computer-based courses, please use the following suffixes: -TK, TK50 package; -MT, 1600 bpi mag tape; -VH, VHS package; -SP, additional student package. Part numbers are in parentheses.

To order books and/or courses, send a memo to Educational Services' Order Processing group in Billerica, Mass. Address your VAXmail memos to CECV03::MAILPO or ALL-IN-1 memos to MAILPO BKO. Include your name, badge number, cost center, full facility address including mailstop. Please cite the title, part number, and quantity desired.

Using VAX CDD/Plus (EY-A891E-plus suffix)

"Using VAX CDD/Plus" discusses concepts and offers practice in developing the skills required to create, populate, and maintain VAX CDD/Plus data dictionaries.

Using the ULTRIX User Executive and DECwindows Desktop Applications (EY-C170E-plus suffix)

This computer-based (CBI) course provides new ULTRIX DECwindows users with the knowledge and skills needed to make effective use of the ULTRIX User Executive, the graphic interface to the ULTRIX operating system, and to use the bundled desktop applications. You will find this CBI of primary interest if you are a new user of workstations running ULTRIX

DECwindows.

Viruses, Worms, and Trojan Horses: Security in Networked Computer Environments (EY-C184E-VH)

In this three-hour videotape set, six Digital experts in network computer security probe the actual threats to your data's security. This video-based course is an abridged version of a live Digital Customer Video Network (DCVN) telecast that was broadcast last June to 22 Digital locations and 9 customer sites.

### Sales Support Guides

The Salesperson's Guides listed below will help you to sell Digital solutions more effectively by giving you a better understanding of these specific industries:

Architecture/Engineering/Construction (AEC) (EY-8295E-ST)  
Distribution (EY-8296E-ST)  
General Business (EY-8297E-ST)  
Manufacturing (EY-8298E-ST)  
Engineering in Manufacturing (EY-C181E-ST)  
Manufacturing: MRP II Overview and Concepts (EY-C182E-ST)  
Digital Products and Services (EY-8255E-XX)

This newly updated multi-volume soft-cover course package, modeled from the same materials created for Digital's Sales Development Program (SDP), is available to Digital employees in all functional organizations. This

course is available ONLY as a set.

### New from Digital Press

Campus Strategies for Libraries and Electronic Information, edited by Caroline Arms (EY-C185E-DP)

Through case studies written by participants, this 404-page addition to the EDUCOM Strategies Series on Information Technology describes the planning and implementation of library and information systems at 10 academic institutions in the United States.

Digital Technical Journal No. 9, June 1989 — Distributed Systems (EY-C179E-DP)

Features nine papers by Digital project engineers, describing a file service, name service, remote system management, services for MS-DOS™, and MAILbus — products that make possible the efficient sharing of resources in a distributed, multivendor environment. Back issues of Journals 1 through 8 are also available.

VMS Internals and Data Structures: Version 5 Update Xpress, Vols. 1 and 2 (EY-C171E-P1 and -P2, respectively)

Timely, important, with valuable new information on the VMS operating system, these "Xpress Update" volumes are written by the experts who are involved in engineering, teaching, troubleshooting, and supporting Digital's powerful VMS operating system.

MS-DOS is a trademark of Microsoft Corp. ●

## 'Women at Work' seminar series continues

The "Women at Work" seminar series sponsored by the LES/LESM W.O.M.E.N. (Women of Manufacturing and Engineering Network) training and development committee continues through the fall with these seminars. Everyone is welcome to attend, but seating is limited and priority will be given to those in LES/LESM. To register for any of the seminars, send your name, node, DTN, and affiliation to FRAGLE::SEMINARS or Donna Venuto, DTN 226-2198.

If you would like more information on these seminars, contact Pam Erickson (AXIS::ERICKSON), or Jackie Kiedaisch (RAMAL::KIEDAISCH).

Oct. 18, 10 a.m.-noon, Paul McGaun Suite, WFO

"Giving Away Success: Why Women Get Stuck and What to Do About It"

Nov. 15, 10 a.m.-noon, Paris Room, BXC1-2

"Women and Self Esteem: Improving Your Reputation with Yourself"

Dec. 6, 10 a.m.-noon, Sheridan-Hinchcliffe

"Give Yourself Credit: Personal Financial Planning" ●

## Andover plans United Way festivities

The AET facility in Andover is holding its first-ever United Way campaign Oct. 9-13. Everyone is invited to attend the following events:

Tuesday, Oct. 10 — Gala kick-off in lobby. Also, meet "Mrs. Santa," participate in the "Hoop-La" basketball match, and start bidding on the items in the Bid Book, all in the cafeteria.

Wednesday, Oct. 11 — Bake Sale in the cafeteria; "free" coffee with United Way pin, cafeteria.

Thursday, Oct. 12 — "Nerf" golf tournament, noon, cafeteria and in Stonehenge Conference Room. Teams or individuals welcome to play.

Friday, Oct. 13 — Bid Book and "Hoop-La" continue. Grand finale in the cafeteria at noon. ●

## Quality Exposition Oct. 4-5 at Andover

"Continuous Improvement" is Digital's quality strategy for the 1990's and the theme of Corporate Quality's Quality Exposition Oct. 4 and 5 at the Andover (AET) facility. The expo will run from 8:30 a.m.-5:30 p.m. in the AET lobby.

All employees are invited to attend and learn about state-of-the-art quality technologies and the quality education programs which are leading Digital's drive for excellence. Representatives from internal and external organizations will be available to discuss your specific interest in the continuous improvement drive.

The Quality Exposition is held in conjunction with the 1989 Quality Education Forum, a meeting for education managers from throughout Digital to discuss quality education strategies for the '90s.

For more information call DTN 381-1338. ●





### Deadlines for 'Digital This Week'

Deadlines for "Digital This Week" have been established to help employees plan events and publicity around certain editions. **Deadlines do not pertain to Marketplace, which is first-come, first-served.**

The publishing schedule for October has been altered. The next three issues and deadlines for DTW are:

- Oct. 24 issue — Oct. 11 deadline
- Nov. 14 issue — Nov. 1 deadline
- Dec. 5 issue — Nov. 20 deadline.

### Boating safety course offered

The United States Power Squadron's course for sail and power boaters begins Oct. 10 at 7:30 p.m. at R.J. Grey Junior High in Acton. The 10-week course covers safety, seamanship, "rules of the road," navigation aids, Coast Guard regulations, compass and chart work. The course is open to everyone; there is a slight charge for course material. For more information, contact Jim O'Loughlin, DTN 289-1165.

### Employees admitted free to Museum of Fine Arts

As part of a new corporate membership structure and in recognition of Digital's ongoing support of the Museum of Fine Arts, Boston, the Museum will admit employees and one guest for free when a Digital badge is shown. Free admission does not apply to special ticketed events or exhibitions, for example, "Monet in the '90s."

The museum is open Tuesday and Thursday through Sunday from 10 a.m.-5 p.m. and Wednesday from 10 a.m.-10 p.m. For a recorded listing of weekly events and schedule changes, call (617) 267-9377. For hearing impaired employees, TTY/TDD telephone service is available. Call (617) 267-9703 Monday through Wednesday, 10 a.m.-4 p.m.

### 'KIDS AND COMPANY' program needs volunteers

Digital is looking for volunteers, preferably with teaching experience, to train kindergarten through sixth grade teachers in the "KIDS AND COMPANY: TOGETHER FOR SAFETY" curriculum which is being introduced in the Massachusetts public schools this year. "KIDS AND COMPANY" is a comprehensive personal safety program designed to make kids less vulnerable to exploitation, abuse and abduction by providing them with skills to enhance their self-esteem and confidence.

"KIDS AND COMPANY" is a program of the Adam Walsh Child Resource Center and the National Center for Missing and Exploited Children, and is produced with Digital's support. For more information, contact Eileen Houghton, Central Massachusetts Community Relations manager, DTN 297-4541.

### United Way campaign goal set at \$3.5 million

Digital's 1989 United Way campaign, which runs through October, has set its goal at \$3.5 million with 55% employee participation.

At the recent training session for site chairpeople, Ron Payne, vice president, Corporate Purchasing, said, "I'm honored to be Digital's 1989 United Way Key Executive. I'm here to ask you to join me in my commitment to support the United Way and work to provide vital resources for our communities health and well-being."

According to Judi VonDohlen, Corporate United Way Chairperson, "The United Way plays a key role in helping Digital and its employees fulfill their commitment to the communities in which we live and work."

That commitment is fulfilled by matching employees' gifts, dollar-for-dollar, to the United Ways they support in their communities.

Again this year, those sites that attain over 70% participation will be awarded a special Digital/United Way flag to be flown permanently at the facility.

Questions about the United Way or how to contribute through payroll deduction or to make a one-time gift should be directed to Judi at DTN 223-5320 or (508) 493-5320.

Watch for announcements about United Way campaign activities and special events at your site.

### Metpay offices to close for Columbus Day

In observance of Columbus Day, all Metpay offices will be closed on Monday, Oct. 9. For assistance, call Policyholder Services, (1-800) 422-4272 on that day only.

### DECBIGBAND benefit

The DECBIGBAND will perform at the Maynard Elks on Powdermill Road on Saturday, Oct. 7 from 8 p.m.-midnight. The concert will benefit the American Cancer Society. For ticket information, call Rose Marie Shaw, DTN 297-6773.

### Vanpools available

Space is available now for new members in Digital Commuter Van 132. The van leaves Brookline, N.H. and makes stops in Townsend, Groton, and Littleton. Passenger drop-off points are Powder Mill Road (MSO), the Mill, Parker Street, and Stow. One-way and one-day riders are welcome. For a one-day trial contact Dick Aiken, DTN 276-9186 (ASDS::AIKEN).

A vanpool that serves commuters from downtown Boston to the Marlboro area is currently accepting riders. The van stops at Back Bay Station, Copley Square, and Kenmore Square. Contact Mike Badzinski, DTN 297-6635 (HPSCAD::BADZINSKI).



## Digital captures SME's Industry LEAD award

With team members in Shrewsbury, Colorado Springs, Tempe, Ariz., Detroit, Kaufbeuren, West Germany, San German, Puerto Rico, and a host of worldwide suppliers, Digital completes a complex disk drive assembly in an automated clean room environment.

For this cooperative achievement at the Colorado Springs facility where the RA90 high performance disk drive is produced, Digital's global computer-integrated manufacturing (CIM) team has won the 1989 Industry LEAD Award given by the Computer and Automated Systems Association of the Society of Manufacturing Engineers (CASA/SME). LEAD is an acronym for Leadership and Excellence in the Application and Development of Computer Integrated Manufacturing (CIM).

The award will be given at the AUTOFAC '89 conference, Oct. 31-Nov. 2 in Detroit. AUTOFAC is the world's most comprehensive event for the automated, integrated factory.

Assembly of the RA90 disk drive actually takes place in Colorado Springs and Kaufbeuren, while Shrewsbury and Tempe provide high technology read/write heads and recording media. The San German plant supplies electronic subassemblies with additional expertise garnered from key contractors around

the world.

The disciplines involved in the process include disk drive engineering and manufacturing, robotics, vision applications, CAD/CAM applications, automated materials handling, production management, test engineering, real-time programming, applications programming, database design and management, financial analysis, network and telecommunications applications, marketing, training, change management and organizational development.

Dan Infante, vice president, Manufacturing Information and Technology, says the Colorado Springs CIM

success story has, among other results, increased product reliability 52% and improved manufacturing space utilization 100%. "The implementation of highly mechanized assembly process with an integrated control system and embedded just-in-time/total quality control (JIT/TQC) techniques benefits Digital corporate-wide," he notes. "And the flexible hardware and software utilized is applicable to future products with minimum incremental investment." John Kovach, manager of the RA90 head business in Shrewsbury, is one of the members of the LEAD award-winning team. ●

### 'Manufacturing Excellence' award to be presented

"Manufacturing Engineering" magazine has chosen Digital as one of the 10 winners of its 1989 Manufacturing Excellence award. The award will be presented Oct. 31 in conjunction with AUTOFAC '89, the world's largest exposition for the automated, integrated factory environment.

"A company trust in employees, an open corporate culture, and an energetic, future-oriented work environment make Digital...a great place to work," stated "Manufacturing Engineering" in its article on Digital. "The company culture is characterized by openness and sensitivity..."

This year's award focused on companies that are "a good place to work." In-depth interviews were conducted with representatives of 10 organizations — including professional societies and associations, management recruiting firms and consultants — to identify the major criteria they use to evaluate jobs and/or employment opportunities. Examples include quality of supervision or leadership, stability, and continuing learning opportunities.

## Digital unveils advanced technologies for VAX mainframe, future systems

*continued from page 1*

equivalent of four very large printed circuit boards being implemented in a five-inch-square package.

Up to 72 very dense semiconductor devices can be bonded onto the HDSC. Each HDSC is then mounted on a highly advanced Multi Chip Unit (MCU). The MCU provides excellent heat dissipation and can be air cooled. Because of the excellent heat dissipation, the density of the chips and logic, or gates per square inch, is extremely high compared to standard

### Advanced engineering tools critical

Some 500 Digital researchers, engineers and technicians have been involved in this multifaceted program for more than five years. They have been working as a team, using the Digital computer network from locations around the world.

Last year, Digital invested more than \$1.5 billion in research and development, 12% of our sales revenue — the second largest commitment to R&D in the industry. The Cupertino

printed circuit boards. The MCU also provides the physical and electrical connections from the system to each HDSC.

Several MCUs can be combined on a mounting platform called a "Planar Module" to build high performance, complex computer systems in much smaller packages.

"Digital has taken a clear world leadership role in advancing multi chip packaging technology," Bob continued. "Basically, we've dramatically

facility was established in 1986 and houses one of Digital's several advanced development labs in addition to the semiconductor processing capability used in fabricating the HDSC. Assembly of the MCU is done in nearby Mountain View, Calif. In the Silicon Valley, Digital also has corporate research labs in Palo Alto and its Western Regional Sales Headquarters in Santa Clara. ●

shortened the distance a signal must travel between chips, which means we can do much more computing work in a shorter time in a smaller space. We're talking about distances comparable to the width of a hair and time measured in trillionths of a second.

"Also, when working at these speeds in small spaces, the amount of heat created by multiple computer chips is enormous, usually requiring liquid or other elaborate cooling mechanisms. Our advanced techniques generate less heat, which means the MCU can be air cooled. Overall, the MCU is quite simple in approach, elegant in design and unbeatable in reliability."

While the results in terms of overall performance are extraordinary, the technology relies on standard semiconductor processing equipment and techniques. For example, use of copper and polyimide for semiconductor interconnection has become more common in recent years and the resultant thermal and electrical characteristics are stable and predictable. ●



## 'Digital Technical Journal' available by subscription

In response to employee requests, "The Digital Technical Journal" will offer yearly subscriptions beginning in 1990. At the same time, the Journal will increase its publication schedule from semi-annual to quarterly.

Established in 1985 for internal engineers and external educators in computer science and engineering, the Journal has become increasingly popular with employees outside the engineering group because of its valuable technical perspective.

The Journal bridges the information gap between product description sheets and technical manuals by explaining the technological foundations of Digital's major products. Each Journal focuses on at least one product and presents a compilation of papers written by the engineers who developed the product.

The content for the Journal is selected by an Advisory Board, chaired by Sam Fuller, vice president of Corporate Research and Architecture. The Board comprises four Digital vice presidents and three senior engineering managers. The board's goal is to select the content that is the most interesting and valuable to the Journal's audience.

For 1990, the major products selected by the Board are Compound Document Architecture (CDA), Desktop Systems, and DECwindows.

Subscription inquiries should be directed to the the Journal's editor, Jane Blake (RDVAX::JOURNAL).

Single issues and back copies will continue to be available through Digital Press at CECV03::MAILPO. ●

## IEEE announces October meeting

The Magnetics Society of the Boston Section of the IEEE invites all interested employees to attend its October meeting on Wednesday, Oct. 11, at 6 p.m. at Digital's Shrewsbury facility (333 South St.). Refreshments will be served at 5:30. Dr. Dennis Speliotis will speak on "Magnetics Around the World." For further information contact Shyam Das, DTN 237-3369 (TFH::DAS). ●

## Stow 'chips' in for United Way



Stow's recent United Way fund-raiser featured a mini-putting green. Helping to make the event a success are, from left, Al Thibaut, Vhonda Lowry, John Wetmiller, Bob Macolini, Sal Ruggiero, PGA golf pro Marie Seaquist, and Paul White. United Way events will continue through mid-October at sites in New England.

## Making the telephone work for you — at big savings

(This article was prepared in cooperation with CMAS, EMAS AND NHAS Telecommunications.)

Telecom Administrative groups in Eastern and Central Massachusetts and in New Hampshire recently put their heads together to help the company's cost-saving efforts by using the telephone more efficiently.

What they came up with was a number of small, surprisingly easy ways to make the telephone work just as effectively as ever, but at big cost savings.

Here are a few "telecom tips" you can start using today:

- Know your local dialing plan. Dialing "8" + area code + local number connects local calls but costs more. Simply dial "9" + local number and save.
- Hang up the receiver for at least three seconds between calls to make sure the previous call disconnects. If the first call remains connected, you'll be billed for a three-way call.

### Calling Card Tips

In CMAS, EMAS, and NHAS, AT&T is the selected calling card vendor.

- If you are at a Digital facility, use the DTN, never a credit card, to call your office or another Digital facility. The cost comparisons below for a three-minute call show you why:

From Maynard to Merrimack*	
DDD (direct distance dialed)	.65
DTN	.50
Credit Card	1.45
Credit Card, operator assist	1.75
From Maynard to Santa Clara	
DDD	.86
DTN	.79
Credit Card	1.66
Credit Card, operator assist	2.61

- All credit card calls include a surcharge of 80 cents for each direct dialed call, \$1.75 for each operator assisted call.
  - Credit card calls placed from a hotel room may include costly surcharges. Use a public AT&T pay phone.
  - Overseas travelers should use AT&T's USADIRECT where available.
  - Using "alternate long distance carriers" can cost twice as much for the same call. Use AT&T.
  - Never use telephone calling cards to log onto the system from home. Contact your site telecommunications group for alternate methods.
- Overall use of Digital's telephone systems is climbing. And more people are staying on longer. Simply saying "good-bye" sooner rather than later can really help trim costs.

For more "telecom tips," contact your local site Telecommunications organization.

\*Rates effective July 1989. ●



## Colby H. Chandler nominated ...

*continued from page 1*

physics from the University of Maine. He also holds an M.S. in industrial management from M.I.T., and has received honorary doctoral degrees from five colleges and universities. Mr. Chandler also has been elected to several honorary scholastic societies.

Mr. Chandler serves on the board of directors of Ford Motor Co., JC Penney Co., and Citicorp. In addition, he serves as chairman of the President's Export Council and is affiliated with several other business councils. His many public service commitments include service as a board member for the National 4-H Council, the United Negro College Fund, and the United Way of Greater Rochester. ●

## Family outings at Canobie Lake Park winding down

*The 1989 Digital family outings at Canobie Lake Park in Salem, N.H., are drawing to a close. If you couldn't make your site's scheduled outing date, Oct. 15 is the alternate date.*



## Updated policy on proper use of computers, systems, networks

Digital has updated its worldwide policy defining the appropriate use of its computers, systems and networks. This version includes a philosophy statement that reaffirms the importance of our systems and network utilities as business tools. It also defines "misuse" and spells out the responsibilities of all employees and managers.

The policy is effective immediately and will be available on videotex and in hard copy on or before Nov. 1.

Following are some policy highlights:

### Philosophy

Systems and network utilities are powerful business tools, encouraging creativity and the exchange of ideas needed to maintain our competitive edge. These tools allow for instantaneous creation of "electronic" organizations to focus worldwide resources on urgent tasks. We want to encourage our people to use these tools in accordance with company philosophy and values.

Our peer-to-peer, open computing environment reflects our corporate culture. We sell this concept to customers, and business and society are clearly moving toward this way of operating. We believe that what we sell to our customers will get better if we use it ourselves.

Information and the ability to communicate it freely are valuable assets that play a significant role in Digital's success. The protection and appropriate use of these assets is everyone's responsibility. We must strike a balance between encouraging open systems and protecting these assets if they are to continue to support our success.

### Notes files and conferences

Digital provides systems to its employees to maintain computer conferences (notes files) in direct support of company business (i.e., product development, financial analysis, business planning, etc.). Digital also permits access to these systems to communicate matters of opinions and common interests.

In all cases, a computer conference must have an identified conference moderator. Where the conference directly supports the company's business, the conference moderator and the responsible systems manager may elect to restrict access to the conference. Digital classified information may only be placed in a conference with restricted access. Conferences created to communicate matters of opinion and common interests may not be used for solicitations of any kind, and must be open to all employees.

In addition, these conferences may not be used to promote behavior which is contrary to the company's values or policy (i.e., they may not promote discrimination, disrespect for the individual, violence, etc.). ...The company reserves the right to terminate any notes file it believes is inappropriate or in violation of this policy.

### Responsibility for message content

Messages mailed or posted over the Digital network are the responsibility of the original author. Posting materials in a notes file/conference without the explicit permission of the author is prohibited and is a violation of this policy. When forwarding messages or posting them to conferences, removal or falsification of the original message header (which indicates the author) is prohibited.

### Policy violations

Managers who suspect that systems are being used improperly should discuss the problem with the employee in question and, if appropriate, involve security. In cases where improper use has been clearly established, the employee should be dealt with in accordance with the corrective action and disciplinary policy (6.21). ●





# Digital This Week

Volume 17, Number 14

July 31, 1990

## Digital reports fourth-quarter, year-end results

Digital has announced results for the fourth quarter and full fiscal year that ended June 30, 1990.

For the quarter, the company reported earnings per share of 68 cents, before a restructuring charge of \$2.79 per share after tax. This charge was primarily for employee reskilling and separations, facility consolidations, and related administrative costs. The company absorbed a \$150 million restructuring charge for employee separations and redeployment in the previous quarter. The net result for the quarter was a loss of \$2.11 a share, compared with a \$2.51 per share profit for the same period a year ago. Net income for the quarter was \$85.3 million before the pretax restructuring charge of \$400 million.

The net loss after the restructuring charge was \$256.7 million compared with a \$313.2 million profit a year ago.

For the full fiscal year ended June 30, 1990, after absorbing pretax charges of \$550 million or \$3.60 per share after tax, net income was \$74.4 million compared with \$1 billion last year, and earnings per share were 59 cents compared with \$8.45 per share last year.

For the quarter, the company reported total operating revenues of \$3.4 billion, down 4% from the \$3.5 billion of a year ago. For the full fiscal year, total operating revenues were \$12.9 billion, up 2% from \$12.7 billion last year.

"Operating results for our fourth

quarter and 1990 fiscal year reflect the continuing economic slowdown that affects both U.S. and several other markets," said Jack Smith, senior vice president, Operations. "We have seen good customer response to our new products, including the VAX 9000 series. The company has continued to make significant investments in R&D, capital spending, and our sales and sales support organizations, which are the investments upon which long-term growth is based.

"Increasing profit is the most important challenge the company faces,"

### Operating results at a glance

... see page 8

### 'Reaffirmation' conference

... see page 6

### More on the 'restructuring' charge in FY90 results

With the year-end financial results, Digital announced that it is taking a \$400 million restructuring charge to cover expenses related to eliminating unnecessary jobs, reskilling, relocation and facility consolidations. The company will continue to assess work force needs on a business-by-business and country-by-country basis.

"In light of current results, the company will be making a major effort to increase profit — through increasing revenue, increasing customer satisfaction, meeting customer needs and eliminating unnecessary jobs," explains John Sims, vice president, Strategic Resources. "We will look at additional opportunities to relocate and retrain employees, especially in our Enterprise Integration Services organization. But to reduce costs, we need an overall reduction in the size of the work force."

## Digital participates in LULAC convention; three employees honored

Three employees were honored during the 61st annual convention of LULAC, the League of United Latin American Citizens.

Digital's Hispanic Leadership Group (HLG) presented the annual HLG Achievement Awards during the convention in Albuquerque for outstanding individual, regional and corporate contributions to Digital and its Hispanic community. This year's recipients were

Lorraine Sena-Rondeau, Business Systems manager, Albuquerque Manufacturing, Hispanic Individual Achievement Award; De' Vargas Enriquez, technical instructor, Customer Services, Albuquerque District, Western States Region, Regional Achievement Award; Tony Giorciari,

*continued on page 3*

**digital**™

stated Jack. "We are not satisfied with our operating results and will continue focusing on revenue growth and reducing our cost structure. One way we are reducing costs is to identify positions that are no longer needed, either because of technology changes or business practice changes. This is reflected in the year-to-year decline in the size of the company's workforce.

"Fourth quarter operating results include a restructuring charge of \$400 million, equal to \$2.79 per share after tax, which reflects both current and future costs, principally for employee reskilling and separations, facility consolidations, and related administrative costs. We expect to begin receiving ongoing cost savings from these actions in the current year, and the full impact will be realized by next fiscal year," Jack noted.

"Almost 21,000 customers have visited DECWORLD '90 in Boston," said Ken Olsen, president. "They have seen the extensive set of products and services that have resulted

*continued on page 8*



## Group works to ensure computing access

If you had problems with fine motor control, or had severely arthritic hands, could you still use the keys on your terminal?

If your vision were impaired, could you still see your terminal's screen?

The Computing Access for People with Disabilities program office is working to ensure that the answer to these and similar questions is a resounding "yes."

Formed last January, CAPD spans all Digital functions and geographies. CAPD is responsible for:

- Ensuring that Digital satisfies all current federal and state requirements and is prepared to meet anticipated and new requirements for computing access as such laws and regulations become effective.
- Providing consultation regarding technical issues in reference to computing access for Digital employees.
- Developing and/or acquiring adaptable and accessible systems.
- Ensuring that Digital continues to be an industry leader in speech technology, human interface and in making product features accessible and useful to people with disabilities.
- Developing the CAPD training strategies for the company.
- Defining appropriate guidelines addressing computing access.

CAPD directs the company's work with government and other agencies and industry associations relating to computing access for people with disabilities. Additionally, CAPD works with vendors of assistive devices and



Working to improve access to computing are (from left) Dave Brown, CAPD program manager; Janine Kenefick, Training and Communications manager; and Tom Baudet, Technical/Product manager.

selected universities to ensure that Digital products can be easily adapted.

Says Dave Brown, CAPD program manager, "We're looking at designing and manufacturing our equipment to adapt to assistive devices. For example, there are keyboard overlays, devices that fit over a standard keyboard so that people with motoric difficulties can press the keys accurately and easily. Screen enlargers that fit over the terminal screen help people with visual impairments to see the screen more easily. These and other, more sophisticated tools, like DECTalk, can help people with disabilities contribute to the fullest."

Dave adds that packaging, labeling, and graphics are also part of the effort to improve access to computing.

"Technology has given people with disabilities a level of independence they never had before," he points out. "Now it's up to us to help them get the most out of being independent."

For more information about making computing accessible to those with disabilities, contact anyone in the CAPD group. All phone numbers are DTNs: Dave (CAPD::DBROWN), 223-7475; Technical/Product Manager Tom Baudet (CAPD::BEAUDET), 223-4393; Training and Communications Manager Janine Kenefick (CAPD::KENEFICK), 223-3046. •



### Digital This Week

**Editor: Kathleen Nelson**

**DTN 251-1307**

**ENET: @PKO or ICS::**

**NELSONK**

**Marketplace: DTN 251-1308**

"Digital This Week" is published every other week by the Corporate Employee Communication Department of Digital Equipment Corp. for its employees in the Greater Maynard Area.

### Donation made to AIDS Action Committee



Digital recently presented a check for more than \$40,000 to the AIDS Action Committee. The money represents Digital's dollar-for-dollar match of donations made to "From All Walks of Life," a pledge walk for AIDS care and research. A total of more than \$81,000 was raised from employee donations and Digital's matching funds. Shown here are (from left) Judi Von Dohlen, Employee Programs manager; Larry Kessler, executive director, AIDS Action Committee; Celia Therrien, Corporate Contributions; Val Langbehn, AIDS Action Committee; Richard Giglio, AIDS Action Committee. Not pictured is Paul Ross, Corporate manager, AIDS Program Office.





# Digital This Week

Volume 17, Number 7

April 17, 1990

## 'Career Opportunity Days' fills hundreds of Field positions

Seven hundred employees have already accepted new Field positions as a result of Career Opportunity Days I and II, according to Tom Colatosti, U.S. Organization and Workforce Development manager. Several hundred additional offers are still outstanding.

Adds Tom, "We applaud the spirit and commitment of employees who have stepped forward to contribute their talents and energy to Digital during this critical time."

Two major recruiting events, one last August and one in January, helped employees assess their career interests and skills and how they might relate to field positions. Four hundred

employees accepted job offers from the first COD in August, and 300 job acceptances resulted from the COD II event in January, which attracted 1,500 people. Resumes for job openings from COD II are still being accepted.

Hiring managers from the nine areas and Customer Support Centers reviewed and screened hundreds of resumes prior to COD II.

During scheduled interviews, employees met with employment, sales, and software managers from across the U.S. to consider how their skills could be used to meet critical job needs in Sales, Software Support, Software Consulting and other direct

revenue support positions. They also learned about Field training programs and relocation benefits.

Southern Area Employment Manager Tom Birmingham said, "District managers are very pleased with the quality and the skills of the people coming out to the Field — and with their willingness to respond to the opportunity. These people see a move to the Field as a way to grow professionally, to work directly with customers to enhance services and improve revenues."

After attending COD II, Personnel consultant Sheila Barnes accepted an offer to move to Santa Clara, Calif., to become a software specialist in the Western Area.

Formerly a business systems analyst, Sheila shifted her career focus to Personnel because she wanted to work more closely with people. The

## First VAX 9000 system ships on schedule



Excitement ran high in the MRO1 cafeteria on March 30 as more than 600 employees gathered to celebrate the shipment of the first VAX 9000 system. Dozens of red, white and blue balloons swayed among the crowds of employees that filled the seats, the staircase, and the corridors. Above them all, a huge banner proclaimed: "VAX 9000: It's a mainframe, it's a supercomputer, it's a VAX."

The first customer for the VAX 9000 system is the Naval Underwater Systems Center (NUSC), located in Newport, R.I. The system was installed in less than seven hours and is up and running.

Carl Gibson, VAX 9000 Engineering manager and master of ceremonies for the event, introduced Bob Glorioso, vice president, Information Systems Business group. Bob praised the Digital engineers who achieved so many technological advances in such a short time.

Other guest speakers included Dave White of the VAX 9000 Marketing organization, who spoke of the sales account team's efforts in closing the sale. Bob Marshall, the Digital account manager, and Paul Larkin, the sales unit manager, were presented with a plaque. Dave Lynch, ISB Public Relations manager, gave Carl an enormous collage of press clippings about the launch of the VAX 9000 system.

### Interested in a Field position?...

... see page 3

### 'Lines of business' created...

... see page 3

COD staff helped her understand how she could use both her information systems technology knowledge and "people interest" to help Digital customers. Sheila's needs were evaluated and a customized training program was created to help her acquire additional knowledge and skills for her new position — analyzing technology needs and defining and solving customers' business problems.

Said Sheila, "I feel really motivated to do the best job I can. Everyone has been so supportive. People

continued on page 3



## Preparations underway for fifth annual walk for AIDS care, research

Sunday, June 3, is the date for "From All Walks of Life '90," a pledge walk to benefit AIDS care and research.

"From All Walks of Life" is five years old. Digital has been a corporate sponsor for the past three years, since the AIDS Program Office has been in existence.

Corporate Personnel is the group that funds this sponsorship under the leadership of Alan Zimmerle, Corporate Manager, AA/EEO/Valuing Differences.

The first Walk was held on June 1, 1986. Four thousand participants contributed \$325,000 and corporate and foundation sponsorship was \$25,000.

In 1988, Digital employees raised \$23,000, which was matched by the company. At that time, that was the largest single amount ever raised by a company on behalf of the AIDS Action Committee.

Last year, 350 Digital walkers contributed \$40,000, an increase of almost 58% in one year. Through the Matching Gift Program, Digital added \$38,400. In all, over 18,000 people contributed \$1.8 million to the 1989 Walk, with corporate and foundation sponsorships of \$190,000.

Who walks? Literally, people "from all walks of life" — everyone who cares about people affected by AIDS. Last year, for example, 60% of the

### Tenpin bowling league forming in Gardner

The Gardner Tenpin Bowling League is gearing up for its second summer of bowling at Gardner Tenpin Bowling Center. The league bowls from May 16 until August. Anyone interested in the league should contact Steven Gilmour, DTN 276-9198 •

walkers were female, 67% were age 25 to 44, and 91% came from within the Interstate 495 belt.

Over the years, 40 Massachusetts AIDS-service organizations, three national AIDS-focused agencies, and one international health organization have benefited from the Walk for Life. This year, the net proceeds from the Walk will be divided among the AIDS Action Committee and 38 organizations.

Sponsors and walkers are needed.

If you can volunteer some of your time, call the Digital Employee WALK90 Committee at DTN 292-2333 (Deb Arch), 226-5979 (Scott Von Rhee), or 285-2239 (Ann Marie Lupacchino). Or you can call DTN 226-7584 (Kate Winkler) to find out the latest needs of the AIDS Action Committee's "Walkline."

Look for posters in early May announcing your site's activities and information on how you can be a part of this event. •

### 'Walk for Hunger' needs volunteers

Volunteers are needed to work at the "Walk for Hunger" on Sunday, May 6. Last year, almost 500 employees contributed in some way to the walk's success. The event raised \$2.9 million to help fight hunger.

Shrewsbury employees Mary Nolte, Shannon Sullivan and Ed Lee will be working on Boston Common at "Checkpoint 8," the walk's finish line. More volunteers are needed to help check in the walkers and provide them with drinks and snacks. Volunteers are needed between noon and 7 p.m. Please contact Mary, Shannon or Ed @SHR for more information.

### Coming up on DVN: Live 'Digital Quarterly Report' telecast April 24, live State of the Company telecast on May 3

Please make note of two live programs coming up on the Digital Video Network (DVN). They are designed to help employees separate fact from rumor and to get a better grasp of our overall financial situation, where we stand with transition, and our key operational and business directions.

The first program is an hour-long "Digital Quarterly Report" (DQR) telecast at 3:30 p.m. Eastern time on Tuesday, April 24. Guests will include Ken Olsen, president; Jack Smith, senior vice president, Engineering, Manufacturing and Marketing; and John Sims, vice president, Strategic Resources.

Employees who want to ask questions directly to Ken, Jack or John can call from any of the DVN viewing sites throughout the United States. A limited number of seats will be available in the studio audience at the BUO facility in Bedford. If you are interested in being part of the studio audience, contact Marsha Pitts Williams (DTN 249-4075).

For the first time ever, a portion of the State of the Company meeting, including Ken Olsen's speech, will be telecast live to all employees from 9-11 a.m. Eastern time on Thursday, May 3. It will be repeated on videotape at 1 p.m. (EDT) for those unable to view it live in the morning.

The location of each DVN viewing site and the names and telephone numbers of the site managers are listed under item #99 in LIVE WIRE's U.S. News section. •

### Digital Lacrosse League kicks off new season

Sign-up dates for the Digital Lacrosse League are April 24 in the Mill cafeteria, April 25 in the MRO1 cafeteria, and April 26 at the HLO1 cafeteria. Sign-ups begin at 5 p.m. For more details, contact Elliott Scott at DTN 297-3655 (MED::SCOTT), Danielle Koschmeder at DTN 291-0079 (ONEDGE::KOSCHMEDER), or Ken Symonds at DTN 225-7103 (DEMING::SYMONDS). A notesfile is also available at MGOBLU::LAX. •



**Digital  
This Week**

**Editor: Kathleen Nelson**

**DTN 251-1307**

**ENET: @CFO or BARTLE**

**::NELSONK**

**Marketplace: DTN 251-1308**

*"Digital This Week" is published every other week by the Corporate Employee Communication Department of Digital Equipment Corp. for its employees in the greater Maynard Area.*



## Memo from Ken Olsen: 'Lines of business' created

We have restated our commitment to run the company as a number of independent business units.

These business units will have clear responsibility to plan, propose and run their separate businesses. They will plan every detail. They will operate with a simple profit-and-loss statement, and will be responsible for pricing. Some of these lines of business will be applications groups; others will be services groups. Each will concentrate on satisfying the customer needs in the market for which they are responsible.

Specific sets of customers, products, applications and selling strategies that address specific markets can be identified and organized as lines of business. There are a number of businesses that can be planned and managed this way. Basically, the applications groups under Peter Smith will be organized to operate as lines of business, as will the businesses that have already been established in Don Zereski's Customer Services organization and Russ Gullotti's Enterprise Integration Services (EIS) organization. Three new lines of business are also being created now — Telecommunications, Small Business, and RISC/UNIX Workstations/Servers. Details are still being worked out, but we expect that there will be a total of 20 to 30 such groups.

These businesses will develop plans that reflect how our customers buy our products and services, now and in the future. Each line of business will be responsible for developing the plan for the company that maximizes profitable market share for its business. Each plan must

reflect its dependence on other lines of business and on other organizations within Digital. Each plan must also reflect commitment from other groups which are necessary to the success of the plan.

### UNIX/Workstation Line of Business

RISC/UNIX workstations is one of the fastest growing areas in the industry. To insure our success as a major player in this area, a workstations business group has been formed under Dom LaCava's leadership. This group will include key resources necessary to win, such as hardware engineering, UNIX software engineering and marketing, as well as sales and service groups. The detailed plan will be announced soon. This line of business will be a major organization in the company, with the proper focus, resources, motivation and investments to ensure our success in this critical market for Digital.

### General Systems Line of Business

Small and mid-sized companies with less than 1,000 employees spend over \$40 billion each year on information systems and services. Gary Eichhorn will manage a line of business to capitalize on this major growth opportunity. The General Systems Line of Business will develop an engineering, marketing, sales and service plan to address this worldwide market.

### Telecommunications Line of Business

One of the fastest growing worldwide markets is telecommunications, including all of the world's telephone

*continued on page 7*

## 'Career Opportunity Days' fills hundreds of Field positions

*continued from page 1*

involved with COD have done everything, from helping me look at my skills to training and giving me a relocation package."

"We're not just moving people around; we're helping people change their lives in some significant ways," says COD Program Manager Jim Waldron. "To succeed in a new career move, people need a whole range of support services. We are providing an environment that supports the life changes that occur with career transition."

Jim continued, "We have designed support systems to help Digital employees and their families get settled and acclimated in their new location. The involvement of these local support groups at the field sites is critical. We are absolutely committed to helping people succeed in their new jobs, and we'll do all we can to make this happen."

Tom explained that local managers in the Greater Maynard Area can play a big part in the success of the program. "Managers need to help their people with career planning. They should encourage them to consider their plans and ambitions and take action for the future, to guide them in understanding how

their strengths and talents can be transferred into new opportunities," he said.

Tom continued, "We are addressing the demand for new job skills as well as the issues of workforce imbalance and a high cost structure. The goal is to prepare employees to transition into areas where they can support customers to meet our business requirements."

"Times of change can be times of opportunity and growth. The first 700 people who have taken Field positions had the initiative and courage to take charge of their careers. They are determined and committed people who are doing the right thing for themselves and Digital. With their help we are building a better Digital for the 1990s and beyond," said Tom. •

### Interested in a Field position? Here's what you can do

The process for hiring employees into Field positions is ongoing, and resumes continue to be accepted between formal COD recruiting events.

There are over 1,300 open field positions in sales and sales support. Local area employment managers have a list of current openings. Employees should send their resumes to the area employment managers in their selected geography. Submit one copy to each area of interest.

Resumes should be sent electronically to USFP::CAREERMGMT, or CAREERMGMT@USFP@VMSMAIL.

At the subject prompt, type your badge number and the three-letter area code like this: 12345.XXX.

A complete listing of areas and area managers is available on LIVE WIRE.

Upcoming COD recruiting events are now being planned for Q4. These events will focus on targeted industries, geographies, applications or technical positions. Consult LIVE WIRE, Digital's electronic news system, "Digital This Week," "New Hampshire View," and other local publications for the schedule for these activities.

The Career Opportunity Days Hotline number is open from 8:15 a.m.-5 p.m. Eastern time Monday through Friday. Call DTN 297-5838.



# Employee Services and Recreation Trimester Schedule

To help you benefit the most from events sponsored by Corporate Employee Services and Recreation, *Digital This Week* presents this schedule of events for May through September. You'll want to save this schedule, since not all events will have follow-up publicity. For more information about any of these events, contact your local Employee Services and Recreation representative.

## How to order tickets

See Activity Rack for Activity Request Form and Release Forms. **All tours require both the Activity Request Form & Release Forms for each person who wishes to attend a tour and must accompany payment.**



## Nantucket Steamship Authority

Through Oct. 14

See Activity Rack in your local facility for coupons.

### Woods Hole to Martha's Vineyard

Adults \$6.40 round trip (regularly \$8)  
Children (ages 5-12) \$3.20 round trip (regularly \$4)

Children under age 5 free

### Hyannis to Nantucket (South Street Dock)

Adults \$14.40 round trip (regularly \$18)

Children (ages 5-12) \$7.20 round trip (regularly \$9)

Children under age 5 free

Passengers should plan to arrive at the dock at least 45 minutes prior to scheduled departure time to allow sufficient time for parking, purchasing tickets and boarding.

This discount is not applicable to one-way passenger tickets, one-way vehicle fares or bicycle fares. The reduced passenger fares offered are available for in-person purchases only at Steamship Authority ticket offices or in conjunction with advance auto reservations. **DIGITAL BADGES WILL NOT BE ACCEPTED AS SUBSTITUTES FOR TICKET COUPONS.** The cou-

pons themselves are not valid for passage. Along with payment, the coupon must be exchanged in person for passenger tickets. One coupon may be used to include all members of employee's traveling party. Passenger discounts will not be granted without the coupon. Good only for families' use; not good for groups. Limit of 15 passengers per coupon.

The Steamship Authority requests that each employee fill out the ticket coupon completely before presenting it at the ticket window

## May



### Bobby McFerrin and Voicestra

Thursday, May 17, 8 p.m.

Opera House, Boston

Tickets: \$24 (regularly \$27)

Deadline: May 1

Bobby McFerrin, the most celebrated jazz vocalist of this generation brings his Voicestra to Boston for their East Coast debut performance. Voicestra is McFerrin's 10-member ensemble of San Francisco-based singers who bring classical, jazz and theater backgrounds together to form an orchestra of human voice. Their repertoire encompasses all kinds of material, exploring the musical worlds of African rhythms, classical forms, pop songs, jazz and Caribbean beat. Don't miss this engaging family show.

## June



### David Copperfield

Sunday, June 3, 4:30 p.m.

Worcester Centrum

Tickets \$17.50 (regularly \$19.50)

Deadline: May 15

Capture the magic of David Copperfield — you won't believe your eyes. Don't miss this spectacular performance by "The World's Greatest Magician."



## Splendid Newport

Saturday, June 16

\$41 per person

Deadline: May 9

Departure: 8 a.m. from HLO

Enjoy the glamour and excitement of America's first resort, Newport, R.I. Today includes a wonderful one-hour guided cruise of Newport Harbor. Then a sumptuous luncheon is included at the Sheraton Islander on Goat Island. After lunch, enjoy a visit to The Breakers, one of Newport's fabulous mansions and the former home of the Vanderbilts. Drive along famous Ocean Drive and shop at the Brick Market Place or just soak up the atmosphere of this elegant paradise. Your arrival time back home is approximately 6:30 p.m.

Tour includes:

- \* Admission to The Breakers
- \* Luncheon at the Sheraton Islander
- \* Newport Harbor sightseeing cruise
- \* Round trip motorcoach transportation

## July



## Whale Watch

Saturday, July 28

\$39 per person

Deadline: June 19

Departure: 7:15 a.m. from LKG

You will depart for Gloucester and board the "Privateer" at Gloucester's historic Seven Seas Wharf for an unforgettable experience. Join us on a nature trip to the feeding grounds of the great whales of the North Atlantic. You may see graceful finback whales that weigh as much as 65 tons and are as long as 70 feet, making them the



# Employee Services and Recreation Trimester Schedule

second largest whale or animal on earth. Or you may see the hump-back, the most playful of all whales, engaged in such activities as surface feeding, slapping his enormous flipper or tail on the water, breaching (jumping out of the water), or simply frolicking on the surface in a warm summer sun. You may also see other species such as right whales, dolphins, pilot whales, seals, a variety of seabirds and more. Each trip is enjoyable, informative and fun.

After your whale watch, you'll dine at the Gloucester House on a delicious lunch. Choose from baked stuffed filet of sole or boneless breast of chicken. Please indicate meal choice on Activity Request Form.

After lunch, enjoy free time in historic Salem, Mass. Visit the main historical sights or browse the shops at Pickering Wharf before departing for home.

Tour includes:

- Whale Watch (4 hours) in Gloucester
- Lunch at the Gloucester House
- Round trip motorcoach transportation

*Please indicate meal choice on your Activity Request Form*



## The Phantom of the Opera New York City

Saturday-Sunday, July 28-29

\$189 per person, double occupancy

Deposit of \$50 per person due by April 19

Balance due June 26

*Seats are limited. Ticket requests will be honored on a first-come, first-served basis.*

Tour includes:

- Reserved seats to "The Phantom of the Opera" (Rear mezzanine)
- Round trip motorcoach transportation
- Accommodations for one night at the Vista International Hotel
- Baggage handling

## August



### Martha's Vineyard

Saturday, Aug. 11

\$39 per person

Deadline: July 3

Departure: 7 a.m. from HLO

Depart for Falmouth, Mass. An en-route "coffee and" stop (on your own) will be made. Once you arrive in Falmouth you will board the Island Queen and cruise to Martha's Vineyard. A complete refreshment bar is available for your convenience, at your own expense. You will arrive in Oak Bluffs and board your Martha's Vineyard sightseeing tour bus. You'll see the miles of beaches, dunes and fishing villages from another century that have made this island such a mecca today for those who enjoy its peaceful surroundings. The tour will last approximately two hours. You will arrive in Edgartown where you'll have a chance to sightsee and enjoy lunch on your own. The sightseeing bus will now transfer you to Oak Bluffs, another picturesque town where more time for sightseeing is included. You will depart from Oak Bluffs at 5:15 p.m. aboard the Island Queen for the return trip to the mainland. Once back in Falmouth you will now board your motorcoach for home. An en-route food stop (on your own) will be made before returning home.

Tour includes:

- Round trip ticket for the ferry
- Deluxe sightseeing tour of Martha's Vineyard
- Round trip motorcoach transportation



### Maine Clambake

Saturday, Aug. 25

\$44 per person

Deadline: July 17

Departure: 8 a.m. from LKG

Visit Nubble Light for a picture stop (bring your camera) and York Village. Then be ready to feast on plenty of chowder, steamers, corn on the cob, Maine potatoes and watermelon with your fresh lobsters (steak or chicken may be substituted if you prefer). Then in Perkins Cove browse through the many boutiques and stroll the Marginal Way. Approximate arrival time back home is 6:30 p.m.

Tour includes:

- Lobster clambake at the Lobster Barn Downeast Clambake (2 lobsters, steak or chicken)
- Sightseeing at Perkins Cove
- Round trip motorcoach transportation

*Please indicate meal choice on your Activity Request Form*

## September



### Red Sox/New York City

Saturday, Sept. 22

\$39 per person

Deadline: July 23

Departure: 7:30 a.m. from HLO

Depart for a great day in New York as the Boston Red Sox battle the York Yankees. A brief "coffee and" stop (on your own) will be made in Connecticut. Then you're off for New York City. Arrival time at Yankee Stadium should be about one hour before game time. This should give you plenty of time to see pre-game warm ups, etc. You won't be disappointed with the action when the "Bronx Bombers" and "New England's Team" take the field.

Tour includes:

- Reserved seat for Yankee Stadium
- Round trip motorcoach transportation



# The Marketplace

## How 'The Marketplace' works

"The Marketplace" is a free service provided by *Digital This Week* for Digital employees in the Greater Maynard Area. Ads are printed on a first-come, first-served basis, as space allows, regardless of category. If your ad is time-sensitive, keep in mind that ad volume is heavy, so you should allow four to six weeks for your ad to appear in print.

1. When submitting an ad, please include your full name, mailstop, and internal telephone number (DTN).
2. Please submit only one ad at a time. Multiple submissions will not be accepted. Ads will appear only once.
3. Ads must be submitted in writing (hard copy) and sent to Marketplace, CFO2-3/K23.
4. DTW does not print ads for services (babysitting, snow-plowing, etc.) or profit-making enterprises. Ads must be worded clearly, typewritten or printed, and in good taste. DTW reserves the right to edit for space.
5. Ads can be cancelled simply by calling the Marketplace office. If an item has been sold, please cancel the ad so that space can be opened for another listing. If you have any questions about the Marketplace guidelines, call the DTW office at DTN 251-1308.

## Appliances

STOVE, gas, microwave, cooktop, caloric, 80, John, 223-9221

## Cars

'87 PLYMOUTH RELIANT, 30K mi, auto, a/c, am/fm, exc cond, \$6.2K, Terri, 223-2355

'87 MERCURY SABLE GS, exc cond, fully loaded, under warr, 39K mi, \$8.5K, Joyti, 223-8070

'86 SUBARU XT GL-10, turbo coupe, a/c, am/fm/cass, moon rf, must sell, \$5.5K/80, Greg, 291-9345

'83 CHEVROLET CAPRICE, 83K mi, good cond, exc second car, \$2.5K, Rose Marie, 297-6773

'84 FIERO, 4spd, white, am/fm, 4 spkrs, tilt whl, 49K mi, exc cond, \$2.3K, John, 237-3320

'83 944 PORSCHE, 56K mi, a/c, sunrf, black ext/bk lthr int, exc cond, \$10.4K/80, Connie, 297-4291

'82 PLYMOUTH RELIANT, 4dr, auto, a/c, ps/pb, low mi, \$1.2K/80, Steve, 297-2990

'74 PLYMOUTH VALIANT, 4dr, runs great, V6, 89K mi, \$600/80, Colleen, 289-1394

'79 OLDS TORONADO, loaded, rebuilt eng, many new parts, \$1.8K, Mike, 297-6311

'85 DODGE RAM, custom pick up, 41K mi, exc cond, auto, am/fm, full sz, \$4.2K, Mark, 247-2313

'87 NISSAN SPORTS COUPE XE, black, auto, exc cond, a/c, sun roof, \$6K/80, Wendy, 297-6168

'88 FORD TEMPO, white, exc cond, a/c, auto, p/l, am/fm, 4dr, low mi, \$6.4K/80, Mark, 297-3693

'83 TOYOTA TERCEL WAGON, 4 wh drv, manual, 30+mpg, chapman lock, \$2.5/80, Judy, 258-8310

'86 MERCURY COUGAR, gray, 77K mi, 6 cyl, very good cond, \$6K/80, Paul, 241-3305

'79 CAPRI CLASSIC, runs good, \$425, Donna, 226-6746

'83 RENAULT ALLIANCE, new tranny Feb 90, runs/looks great, \$950, Lavonia, 241-3382

'83 VOLVO DL, 2dr, 4spd, overdrive, well kept/maint, \$5.3K, Susan, 227-3015

'87 FORD CONV. VAN, 302 A.T., 25K mi, power, 1 ownr, power everything, exc cond, \$14.5K, Gail, 262-8380

'87 CAMARO, V6, 5spd, red, fm/cass, 44K mi, \$5.4K, Joe, 244-7549

'88 OLDS DELTA ROYALE, 4dr, cmfort car, p/l, p/w, p/b, p/s, a/c, 96K mi, \$1.2K, no rust, Greg, 297-7225

'87 TOYOTA COROLLA FX 16, 5spd, p/s, p/b, 1 ownr, am/fm, well main, 16 valve, \$5.6K, Suzanne, 223-3318

'83 TOYOTA CELICA, loaded, red, 5spd, new brks, 76K mi, looks/runs great, \$3.5K, Caroline, 291-7735

'87 CHRYSLER LEBARON, fully loaded, moonrf, a/c, 40K mi, good cond, \$7.5K/80, Larry, 291-9724

'88 VW JETTA GL, mint cond, sunrf, a/c, auto, must sell, air deflector, Tim, \$9,150/80, 276-9601

'81 TOYOTA COROLLA, 2dr, auto, a/c, ps/pb, good cond, \$1.5K, Shrey, 223-7305

'83 MERCURY W V6, 4dr, blue, mint cond, loaded, \$2,295/80, Ed, 278-4417

'87 CORVETTE, low mi, auto, fully loaded, driven only in Summer, 1 owner, \$20,500, Marie, 276-9268

'87 PLYMOUTH RELIANT LE, 2dr, auto, a/c, am/fm, 30K mi, exc cond, \$5.2K, Charlie, 228-5709

## Furniture

BEDROOM SET, 7pc, queen, adj fram, good cond, great for teenager, \$350, Phil, 223-5639

## Miscellaneous

COMPUTER, Tandy, laptop 1400LT, 2/720K 3 1/2" drvs, 640K RAM, MS-DOS+GW-basic, \$1.2K/80, Hrtach, 297-7303

LADIES WEDDING BAND SET, 3 diamond inset on band, w/engage ring, sz 6 1/2, \$525/80, Edith, 223-1342

PICNIC TABLE, kids size, \$40, Dave, 223-9553

WOOD STOVE, Jutel, \$100/80, Karen, 297-7135

SPEAKERS, Home, 3 way, 75 watt technics, 6 mths old, \$100 for pair, Bill, 227-3744

STEREO CABINET, Sony, glass front, \$100, Susan, 227-3015

APPLE II E, B+W, monitor, keyboard, dual 5 1/4" drvs, OKI printer, \$1K, Randy, 226-5466

RAINBOW P C, 832 K mem, 10 mg hrd dsk, b+w monitor, swift, no printer, \$600, Sherwin, 237-2201

'88 YAMAHA PSR32 KEYBOARD, piano sz keys, octaves, 32 voices, 16 dif rhythms, \$425/80, John, 249-4138

LASO-RA CABLES, and cartridge ribbons, 810, Donna, 291-8370

COAT, Raccoon, ladies sz 12, 3 yrs, appraised, \$2K, Owen, 226-2718

JACKET, Raccoon, zippered frnt, hood, sz 8/10, \$75/80, TV, RCA, color, 19", \$50/80, Betty, 277-7193

## Motorcycles

'83 HONDA NIGHTHAWK 550, waroon, 3.9K mi, great cond, runs perf, \$900/80, Vicky, 223-7593

'86 HONDA, General, exc cond, very preppy, 1K mi, \$375/80, Eleanor, 268-3493

'82 HONDA 650 NIGHTHAWK, 7.5K mi, exc cond, \$1.1/80, Bob, 226-7026

## Real Estate

PEPPERELL, 4bdrm, 2ba, tri lvl, hrdwd flrs, new prch, wooded area, immaculate, \$179K, Steve, 247-2141

HUDSON, 5bdrm, 2.5ba, 5 addtl rms on 1st flr, pool, 2 car gar, dead end, \$247.4K, Rich, 223-3671

ACTON, 9rm, 4bdrm, 2.5ba, many extras, 2400 sq ft, walk to schools/stores, \$279.9K, Geoff, 276-9985

CLINTON, 2-3bdrm condo, maple flrs, built in china cab, new elec/plumb, low fees, w/d, \$85K, 262-8214

ATHOL, 3 fam, fully insulated, oil ht, lead free paint, \$150K, Mike, 241-4723

CLINTON, 3bdrm, 1 3/4ba, 2 car gar, oak cab, d/w, liv rm w/frplc, deck, vinyl side, \$165.3K, Don, 241-3763

STERLING, 9rm, 4bdrm, 2ba, full bsmt, 5.4 acres, 2 car gar, solar wr, 4 stall barn, \$245K, David, 241-3141

SHIRLEY, 3bdrm, 2ba, MHFA approved, finacing avail, \$109K to buy, \$900 to rent, Lorraine, 226-6056

LEONISTER, 3-4 bdrm condo, fees incld ht+ht wtr, newly decorated, \$120K, Trish, 249-4021

FALMOUTH, 3bdrm, 2ba, 3/4 acre, walkout bsmt, wtr view, min to bch, \$160K, MaryJane, 297-2353

DRACUT, 4bdrm, abv grnd pool, lot abutting state forest, wood brg stv, \$159.9K, Joyce, 223-3718

WINDHAM, 2bdrm condo, htd gar, ful appl, \$68.5K, poss no money down, 2K rebate closing, Tom, 297-5714

N. CONWAY NH, studio, tmsr, week 8, red time, full resort facilities, \$5.5K, Phil, 223-5639

LEONISTER, 2bdrm, 1.5ba, deck, frplc, balc, end unit, walk out bsmt, \$109K, Paul, 297-5161

BERKSHIRES, Ponds at Foxhollow, tmsr, 2bdrm, condo, slps, resort, \$4K/80, Bob, 226-7026

MERRIMACK NH, 3bdrm, 2ba, lr, dr, gas ht+ht wtr, city sewer+wtr, 1,200 sq ft, \$85K, Bill, 269-2081

LANCASTER, 3bdrm, 2ba, 9rm, frplc fam rm, deck, storage area, lg yard, \$180K, Wanda, 229-7857

WESTBORO, 4bdrm, 2.5ba, frplc, 1.8 acres, 2 car gar, 3K credit to buyer, \$229.9K, Barbara, 297-2516

ASHURNHAM, 9rm cape on 9 acres, 10 mins from WMO, nice country setting, \$25K, Sibby, 241-4373

ACTON, 2bdrm condo, full app kit, w/w, a/c, remodeled, \$79.9K, Terri, 293-5944

LEONISTER/STERLING, 4bdrm, 2.5ba, walk in closets, frplc, den, dck, \$232.9K, Ramonita, 234-4377

AYER, wtrfront ranch, 2 car gar, ingrnd pool, summer hse, 155' wtr frntage, \$169.9K, Tom, 279-3237

PEPPERELL, 4bdrm, 2car att gar, 2ba, hd wd flrs, prof landsc acre, quiet nghbd, \$187.5, John, 276-0651

CHICELMSFORD, 8yr, 4bdrm colonial, 2.5ba, 2 car gar, deck, attic, bsmt, Jason, 226-2660

## Recreational Vehicles

87 CHRIS CRAFT, 19', 110, depth finder, loaded w/extras, trailer, Mike, 296-4057

## Rentals

ACTON, 2bdrm condo, gas ht, avail June 1, exc cond, \$1075/mo, Liz, 227-4472

ACTON, 2bdrm, priv patio, newly renovated, avail May 1st, \$700/mo util, Ginny, 223-1336

WINCHENDON, lg 2-3bdrm, 2nd flr, 1st/last, stv, refridg, gar spc, \$425/mo util, Eileen, 297-3521

MARLBORO, for 2 prof, 2nd flr, 2bdrm, lg kit, w/d hookup, w/w, \$350 per person util, 227-3352

WOBURN, 9rm, 3bdrm, w/w, w/d hook up, pkg, no pets, newly renov, \$895/mo, Cathy, 249-4757

ATKINSON NH, 3bdrm, 2/5ba, ovkng 2 wooded acres, appl incl, frplc, \$1000/mo util, Susan, 227-3015

WATERTOWN, 2bdrm condo, 2ba, 2car gar, frplc, dck, a/c, hddv flrs, w/d, \$1225-1400, Barbara, 272-5837

FITCHBURG, 2bdrm, off st pkg, 1 mi from rt 2, 1st/last, \$675+util, Nancy, 223-4610

LONDONDERRY NH, 1bdrm, 2nd flr, balc, a/c, w/w, d/w, pool, furn \$525, unfurn \$500 util, Steve, 275-2327

GREENDALE, 4bdrm, 2ba, frplc, w/w, bsmt, appl, dck, nr 290/190, \$1259/mo util, Soman, 225-5990

CAMBRIDGE, furnished for 1 person, avail May 15th-Oct 31st, \$425/mo, Sarah, 251-1384

## Roommates

HUDSON NH, f/m, nsmkr, shr twnhse, a/c, pool, storage, w/d, \$380, mo util, Pat, 275-2527

HAVERHILL, shr hse with 2 others, shr occ meals, parties, \$325+, Ron, 289-1179

GRAFTON, lg sep lr/drm/ba, yrd, shr kit, dr, w/d, \$425+, Leslie, 245-5234

MENDON, shr 4bdrm hse, \$400/mo includes utilities, except phone, Lorna, 223-6124

WATLAND, m/f, shr 2bdrm hse, lg yrd, w/d, quiet dead end st, \$413/mo 1/2 util, Terry, 282-1456

ARLINGTON, f, shr 3bdrm apt, deck, sunporch, \$400 includes all util, Sharon, 297-5725

ASHLAND, m/f, nsmkr, 2bdrm twnhse, priv ba, deck, lux furn, util included, \$500/mo, Howard, 235-8505

## Sporting Goods

MOTOR, 2.2 HP Mercury, used 2 hours in fresh water, \$350, Joe, 249-4027

BIMINI TOP, for Bass Tracker, \$90, Phyllis, 223-5534

BICYCLE, Schwinn, girls, 20", like new, light blue, \$70/80, Pam, 297-2280

PLONTON BOAT, playcraft, 24 ft, furniture, w gas tns, 12 life presv, \$9K/80, Marion, 297-3999

## Wanted

FENCING, chain link or similar for dog enclos, may remove, Nancy, 297-3198

GOLF CLUB SET, for tall intermediate player, have bag need clubs, Susan, 227-3015

FLUTE, for student, Charlie, 228-5001



# Memo from Ken Olsen: 'Lines of business' created

*continued from page 3*

companies, the companies that provide equipment to the industry and the corporations who build their own private networks. This global business, which has already been announced, is managed by Ernst Willhoener, with headquarters in Valbonne, France. Ernst reports to Bill Johnson. The enormous potential in this field will provide significant opportunities for Digital in every country around the world.

## **Need for clear measurements and responsibilities**

In the past, organizations within Digital had overlapping goals, measurements and responsibilities. Many different parts of the company thought they ran the business and built an infrastructure to help them do so. We can't afford to operate that way.

We're going to get much clearer and simpler in our metrics. We want to identify clear lines of responsibility for

the management of each organization within Digital. People will be held accountable and measured on the business for which they are responsible and over which they have direct control. Focusing responsibility will allow us to eliminate redundancies

and streamline the organization.

Over the next few months we're going to end up with better defined work, clearer responsibility for work, and more appropriate metrics for work. The new lines of business are an important step in that direction. •

## **Management principles**

At a recent meeting, Ken Olsen, president, and other senior managers formulated the following management principles, which are to be followed by the company.

### **Responsibility**

Anyone who proposes a plan or accepts responsibility for an activity takes on the obligation to make it work and to complete it. This includes planning and securing commitments for the efforts of other organizations on which the plan depends. Only a formal, justified request to be relieved of the responsibility is reason to terminate it. Excuses such as, "I couldn't get the other parties to cooperate," or "Ken Olsen didn't seem to be showing due interest," do not relieve one of responsibility.

People are normally expected to participate in decisions that affect areas of their responsibility. That does not mean that they have a right to participate in everybody else's decisions. Normally, projects, businesses, and lines of business are proposed by the people who will do them, and, in fact, "They who propose will do." Approvals are formally made by the Executive Committee and/or the Board of Directors.

### **Doing what's right**

Everyone is expected to do what is right. However, that does not mean that one has an individual choice whether to cooperate in a product, project or company business. When the Board of Directors or the Executive Committee approves a business plan, this action commits all functions that are involved in that business plan. The functions do not have to be "talked into it" or "politicked" to do the job to which the Executive Committee or the Board of Directors committed them.

One always has the opportunity and, indeed, the obligation to raise doubts about the wisdom or correctness of a plan or project. But everyone's task is to do his or her part of an agreed-upon, committed corporate plan.

### **Resolving conflicts**

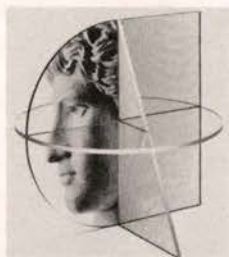
All conflicts should be immediately resolved. This does not mean that everyone will always get his or her way. In fact, it usually means just the opposite. But it does mean that there is no reason for conflicts to remain open and resulting frustration to escalate. It is the essence of good management to resolve conflicts immediately and effectively.

Of course, the people involved should try to reconcile any conflicts or disagreements. If that is not successful, the matter should be brought to their supervisor, manager or vice president, who in turn will try to resolve the conflict, dealing with a counterpart if another organization is involved. If the problem rises to the level of vice presidents and they still can't reconcile the differences, they have the obligation of bringing the matter to the president. If the conflict is a conflict with the president, it should be immediately raised to the Board of Directors.

In other words, unresolved conflicts should be raised to the next level, and then the level above that, until they are finally resolved. •

## **New prospects, new revenues among goals of DECWORLD '90**

"Today, with all of the new products and approaches available in the marketplace, we need to show customers how Digital products and services can solve their business problems," says Pat Zilvitis, DECWORLD '90 chairman.



By the time customers leave the event, Pat says "they will understand how information is put to innovative and strategic use from the desktop to the data center.

"More importantly, we're showing customers how Digital provides them with innovation, choice and responsiveness. DECWORLD '90 will give customers a context so they can understand Digital's products and how they can put them to work. We're building an event that has the features of prior DECWORLDS but, in addition,

*continued on page 8*

## **Deadlines for 'Digital This Week'**

Deadlines for "Digital This Week" have been established to help employees plan events and publicity around certain editions. Deadlines do not pertain to Marketplace, which is first-come, first-served.

The next three issues and deadlines for DTW are:

May 1 issue — April 18 deadline

May 15 issue — May 2 deadline

May 29 issue — May 16 deadline. •



# Distributed Systems renamed Telecommunications and Networks Group

The Distributed Systems Group has been renamed the Telecommunications and Networks Group (T&N). T&N's mission is to ensure Digital's success in the worldwide marketplace for private networks, public networks and public services on these networks through the development, manufacturing and marketing of products and services.

Bill (B.J.) Johnson, vice president of T&N explains, "The organization will be structured around five businesses, one industry/application group — the newly formed Telecommunications Business Group — and four product businesses.

"Each business will be responsible for a clear, competitive strategy which results in the committed financial and market share performance on a multi-year basis."

The four product businesses are:

**Local Area Networks** — responsible for LANs supported by Digital and their evolution. This includes Ethernet, FDDI and future LANs and LAN technology.

**Local Area Access** — responsible for the hardware and software products for attaching both Digital devices and devices from selected other vendors to LANs supported by Digital. "This is largely our terminal server business," B.J. says.

**Corporate Backbone Networks** — responsible for Digital's products to support our enterprise networks direction as well as products for wide area access from local area networks. Jac Simensen, U.K. Engineering manager, will expand his responsibilities to include this business focus.

**Open Networks Systems** — responsible for the network software products which permit Digital to offer the premier seamless open desktop-to-data-center networks. This includes the IBM Interconnect Program. Dick Crosby will expand his engineering responsibilities to include Network Management. Ollie Stone, who manages the Network Management Engineering organization, and Jim Tereshko, who manages the Netstation Management Engineering and Diagnostic Strategy organization, will report to Dick.

In order to accomplish this expanded number of product businesses, the present Network Business Management Group, managed by

Mike Thurk, will be restructured so as to align product management with these four product businesses. As these product management groups become integrated with the business units over the next several quarters, Mike will undertake a functional business management role.

"One of the main reasons for Digital's success in networks has been common, clear, scalable product set," notes B.J. "Architecture and advanced development are needed to accomplish this." Mahendra Patel, who has successfully managed this group, will expand this program to include the Telecom Business Group.

A Product Strategy Organization, to be managed by John Adams, will include the Engineering Quality Technology group, which reports to Jack Mandelbaum and Chris Strutt, consultant for system engineering process. B.J. says, "The rapid change in technology and competitive products requires a common product strategy to ensure that the overall plans are consistent, non-overlapping, competitive and complete."

A new group will be formed to focus on testing, publications and services. The interoperability of our products and the ease of use of products and tools so that our customers can design, build, change and manage their networks is critical. This

group will include the Distributed Systems Technical Evaluation group, managed by Emilio Marianelli and Network Engineering and Technical Services, managed by Paul Keresey.

A new marketing focus will be established in order to focus on the corporate telecomm managers for private networks (e.g. Easynet). Corporate Networks Marketing will market our products and services to these customers. This group will ensure that the proper training, messages, demonstratins, etc., are in place for successful field delivery. Bob Murray will manage this group.

"Consistent and clear product marketing messages are essential to eliminate customer confusion and to ensure our sales force can communicate our integrated product set messages," says B.J. The ISV and third party relationships are key to these messages and will be included in a base product marketing group, to be managed by Gail Daniels. The MCC strategic vendor program managed by Earl Ingalls will report to Gail.

T&N Manufacturing, managed by Glenn Armbruster, will assume these additional responsibilities. The Information Systems Group managed by Len Levy will report to Glenn. Glenn will also manage the quality program across the T&N organization. •

## DECWORLD '90's goals...

*continued from page 7*

is an in-depth educational experience."

The goal of DECWORLD '90 is to shorten the sell cycle by educating customers and to increase Digital's volume of new business. New users in existing accounts will be targeted and non-Digital customers will be invited to share their needs and understand our offerings.

During the event, customers and Digital's sales and sales support professionals will learn about our products, applications and services in a variety of areas, for example, transaction processing and data management systems.

Ten Discovery Centers will bring customers closer to Digital's solutions. These centers will be complemented by over 80 seminars organized into four categories: core curriculum seminars, application seminars, information management and technology seminars and UNIX seminars.

Workshops will give up to 20 customers an in-depth learning experience in lecture/lab format that will focus on a specific business problem. Interactive demonstrations for one to 10 people will explore applications that solve business problems and show "Innovation that Works."

"In addition to these learning opportunities, we want to show customers that Digital is a successful company capable of being a long-term business partner," Pat says.

The DECWORLD '90 program includes events in Australia, Cannes, France, Japan and the United States. More than 20,000 business and information systems executives from North America, South America, Latin America/Caribbean, India and the Far East are expected to attend the U.S. event, which runs July 9-Aug. 1 at Boston's World Trade Center. •



## Digital enters mainframe market with VAX 9000 . . .

*continued from page 1*

the data center of every organization, no matter how large. The VAX 9000 systems fill a need both for Digital and for the market, and we expect them to generate significant new business."

Several hundred times as powerful as the original VAX-11/780, VAX 9000 systems are capable of high internal speeds and sustained input/output (I/O) performance characteristic of large mainframes. With integrated vector processors, its compute-intensive performance offers improvements up to 10 times that of scalar processors alone. The balance of scalar and vector processing equips the new systems to execute a wide variety of applications, ranging from numerically intensive tasks associated with computational fluid dynamics, weather modeling, seismic processing and mechanical computer-aided analysis (MCAE), to high-volume transaction processing and database operations found in large commercial applications.

### New technology boosts performance

The VAX 9000 series incorporates several advanced-technology features to boost both internal computing speed and data transfer capability. A new process of bonding and mounting dense semiconductor devices into unique, field-replaceable Multi-Chip Units enables higher internal speeds by shortening signal paths between components. At the same time, the smaller geometries achieved by higher component density and the Multi-Chip Units' efficient heat dissipation contribute to extended component life and greater integrity of interconnecting paths.

In addition, a new VAX Disk Striping Driver will greatly speed system response to user requests for data. By spreading data files over several disk drives, the VAX Disk Striping Driver will execute multiple requests in parallel in response to a single program request in many applications, increasing I/O capacity and improving access rates.

## Digital reports revenue gains for first quarter . . .

*continued from page 1*

software are allowing customers to become more efficient and more competitive by tying their organizations together and making teamwork fluid and easy. As an example, Digital was awarded a computer contract worth a potential \$97 million by the NASA Ames Research Center in California.

Ken noted that "Digital is financially strong, and will continue to invest to ensure our status as a premier computer manufacturer and provider of customer solutions and services. In the quarter just ended, combined spending for research and development and investments in facilities and equipment totaled \$637 million."

Investments in people and technology have continued to yield positive results for Digital. On Oct. 10, Digital announced the first set of products that make ALL-IN-1 services available to simple terminals, windowing terminals and IBM 3270 terminals; Apple and MS-DOS™ PCs; and VMS and UNIX™ workstations.

"Our strategy is focused on the inte-

gration of hardware and software offerings from various vendors through our unified software environment called Network Application Support (NAS)," said Ken. "We have the best networking and integration services and look forward to helping our cus-

tomers meet the challenge of the 1990s."

IBM is a registered trademark of International Business Machines. MS-DOS is a registered trademark of Microsoft Corp. UNIX is a registered trademark of AT&T.

### Reliability matches performance

VAX 9000 system performance improvements have been matched by enhancements to reliability and availability. The new computers are true "production systems" for successful support of mission-critical applications. Hardware redundancy of vital system components eliminates most single points of potential failure, while the redundant power supply provides power conditioning, protection and full battery backup to maintain operation and prevent loss of data from brownouts and blackouts. Power partitioning allows routine maintenance to be performed without interrupting system operation.

In addition, one-third of the logic in the new systems is devoted to error detection and correction, performance monitoring, and fault identification and isolation. An integral service processor uses four CVAX processors to control peripheral and user interfaces and to monitor both internal performance and environmental conditions affecting operation. Potential problems are thus isolated before they can cause an interruption. The service processor can be programmed to report any event to a Digital Service Center.

"VAX 9000 systems contain the most extensive array of reliability features Digital has ever offered," Bob said. "VAX 9000 manufacturing processes stress quality and our Customer Services organization furnishes a combination of warranty support, product and business services that are truly 'mainframe class.' These include a full account management focus for services, systems integration capabilities, on-site customer support engineers, advanced electronic support, support from our Service Alliance partners, assistance from our new, industry-focused Digital Competency Centers, and extensive training for users." ●

### Operating Results for the First Quarter Ending:

	Sept. 30, 1989	Oct. 1, 1988
Product Sales	\$ 1,994,408,000	\$ 1,896,401,000
Services & Other Revenues	1,136,782,000	1,045,398,000
Total Operating Revenues	3,131,190,000	2,941,799,000
Cost of Product Sales	882,130,000	799,622,000
Service Expenses	729,798,000	649,668,000
Total Cost of Sales	1,611,928,000	1,449,290,000
Research & Engineering	404,131,000	363,996,000
Selling - General & Administrative	938,967,000	848,259,000
Net Interest (Income)/Expense	(22,235,000)	(25,738,000)
Income Before Income Taxes	198,399,000	305,992,000
Income Taxes	47,616,000	82,618,000
Net Income	150,783,000	223,374,000
Average Number of Shares Outstanding	125,768,130	130,961,583
Net Income Per Share	\$1.20	\$1.71



## Employees find ways to make a difference

Most employees occasionally wonder why the company seems not to recognize obvious ways to save money, improve quality or increase productivity. In many cases the answer is simple. Management in general or specific managers may not have the same perspective on a situation as the employees closest to it. When employees are actively involved in problem solving and innovation, opportunities to improve are less likely to be overlooked.

Employee involvement has always been an important part of Digital's success. The company is determined to make sure that our rapid growth in recent years does not prevent employees' good ideas from being heard. Every organization at Digital has committed to develop an employee involvement system to tap the reservoir of employee ideas.

Alan Zimmerle is the senior consultant coordinating the employee involvement effort at the corporate level. That effort is called "You Make A Difference," and it is intended to ensure that each organization receives the initial training and support it needs to launch a successful employee involvement system.

"We are working with organizations

throughout Digital to ensure that employee involvement systems are in place," Alan said. "Some organizations already have systems in place, while others will start with simple 'idea' systems in the next few weeks. In all cases, we are committing ourselves to a journey -- towards increased productivity, continuous quality improvement and reduced costs."

There has not been a lot of fanfare about employee involvement yet, but there is no shortage of creative ideas. For example, a suggestion in Corporate Payroll to consolidate the use of Federal Express should save more than \$50,000 over the next year. A saving of \$96,000 is expected from the suggestion to publish "European Sales

Update" on VTX. A suggestion from Software Sales Operations in GIA to simplify the software licensing process should save \$100,000. And it is estimated that a suggestion from South Central Area to use a single vendor for travel will save \$1,000,000 a year.

Hundreds of other valuable ideas have been submitted. Over the past month, each organization has started to communicate with employees to explain how the employee involvement effort will be organized and implemented. The implementation timeframes will be different for each organization. If you have an idea and don't yet know what to do with it, you can send it to Employee Involvement @CFO. ●

### Bright idea

In the spirit of employee involvement, the DTW staff has come up with a cost-saving tip of its own: Send Marketplace ads by interoffice mail, not demand shuttle or electronic mail, so that everyone has equal access to the Marketplace's services. Marketplace is run on a first-come, first-served basis. The copy deadlines that you see in DTW don't apply, so even if an ad were sent on the shuttle, there's no guarantee that it would appear in the very next issue of DTW.

Watch for other "bright ideas" that save money, improve productivity, or enhance quality in upcoming issues of DTW. ●

## United Way extends helping hand to local communities

A Boy Scout troop eagerly planning its very first camping trip...an elderly couple sitting down to a hot, nutritious meal delivered by community volunteers...a troubled teen confiding in a counselor...schoolchildren learning to say no to drugs and alcohol.

Your support of the United Way makes it all possible.

Says Judi VonDohlen, Corporate United Way chair, "The United Way plays a key role in helping Digital and its employees fulfill their commitment to the communities in which we live and work. United Ways are primarily volunteer organizations and are designed to be very cost-efficient. On average, less than 10 cents on every dollar goes to administration, allocations, and fund-raising expenses. That means that 90 cents of every dollar goes to community services. If your children attend an after-school day care facility run by the local YMCA, if your neighbor has found residential care for his mentally retarded daughter, then the United Way's benefits have come home to you in a very real way. One out of every three people in the

Massachusetts Bay area will be helped by a United Way agency."

As community problem solvers, local United Way volunteers study their communities to determine future needs and set plans in motion to meet those needs. "Everything is done at the community level," Judi says. "That's one of the United Way's biggest strengths -- that services are tailored to community needs. Decisions regarding planning and allocations are made by community volunteers, many of whom are Digital employees. Particularly in today's economy, it's more critical than ever for people to come together in the spirit of community and respond to those needs."

The goal for Digital's 1989 United Way campaign, which runs through this month, is \$3.5 million with 55% employee participation. Through Digital's Matching Gift Program, employees' gifts to the United Ways they support in their communities will be matched dollar-for-dollar.

Local site campaigns are in full swing right now. Sites that attain over 70% participation will be awarded a special

Digital/United Way flag to be flown permanently at the facility.

Questions about the United Way or how to contribute through payroll deduction or one-time gift should be directed to Judi at DTN 223-5320 or (508) 493-5320. ●

### Earthquake relief donations...

*continued from page 2*

Checks should be marked "San Francisco Earthquake Relief" in the memo space. All donations made through other qualified agencies that meet Digital's Matching Gift Program criteria will be matched dollar-for-dollar. Please request that those agencies send copies of their federal tax-exempt 501(c) (3) letter, charter/purposes and goals back with the Matching Gift form. Matching Gift forms are available through your Personnel office and must accompany each donation. ●



## Two appointments in PC, PC Integration Product Business Units

Managers have been named for the Personal Computer and Personal Computer Integration Product Business Units.

Geoff Burr has been named manager of the Personal Computer PBU, reporting to John Rose, Group manager, Personal Computing Systems Group and PC Integration. Geoff is responsible for the operations, product introductions, customer satisfaction, product management, and profitability of the worldwide Personal Computer business. He is also responsible for relationships with Digital's two PC suppliers, Olivetti and Tandy Corp.

Geoff has been with Digital since 1984. Recently, he was Strategic Relations manager and formulated and implemented business relationships between Digital and Compaq, Zenith, Microsoft, Apple, Olivetti, and Tandy.

Prior to joining Digital, Geoff was

executive vice president of Leading Edge Computers and president of Leading Edge's Systems Division. He holds a bachelor's degree in economics from Earlham College in Indiana.

Vijay Thakur has been named manager of the PC Integration PBU, also reporting to John. He is responsible for the operations, product introduction, customer satisfaction, product management and profitability of the worldwide PC Integration business. This includes server and client software, packaged LAN (local area network) servers, non-dedicated servers, ethernet adapters, and LAN software applications. Vijay is also responsible for PC Integration relationships with third parties such as Microsoft, Apple, and so on.

Vijay joined Digital in 1974 as a software specialist in the Toronto office. Since 1979, he has held a number of positions in Engineering Prod-



Geoff Burr



Vijay Thakur

uct management and program management, including the PBX and CIT programs in Networks and Communications. Recently, Vijay was the Program manager for the Corporate PC Integration Strategy, Architecture and Development Plan. He holds master's degrees in electrical engineering and in computer science from the University of Wisconsin. ●

## Manufacturing Customer Integration organization now part of U.S. Manufacturing

The Manufacturing Customer Integration Organization is now part of U.S. Manufacturing. Charlie Bradshaw will manage the group and will report to Lou Gaviglia, vice president, U.S. Manufacturing. Functionally, Charlie will report to Don Hunt, Group manager, Customer Integration and Strategic Planning.

"Integrating the Customer Integration organization into U.S. Manufacturing will complement our customer satisfaction and enterprise integration organizations, providing a broad support base for our customers and the U.S. Field," explains Lou.

The group's primary objectives, Lou adds, are "to work with our customer base to identify and make available leadership business practices, processes and technologies which significantly improve the performance of both Digital and our customers. Additionally, the group will assist the Field in achieving its strategic goals."

Charlie has been with Manufacturing for the past 15 years. He has served as New Products manager, Manufacturing manager, and as Marlboro plant manager. In 1985, he joined the Customer Integration Group and helped to develop the initial strategies as the Manufacturing Corporate Account manager on the Schlumberger team. Most recently, Charlie served as Manufacturing Group manager for the Process Industries. ●

## DECvoice tops at communications forum

Digital's DECvoice response system has won a ComForum Award for 1989 from the National Communications Forum.

DECvoice is a platform for voice processing that incorporates voice synthesis, digitization and recognition technologies into a single architecture for voice response, audio text, and voice mail applications. It was one of 10 products and services recognized by ComForum as being among "the most unique and beneficial to the industry."

Mary Pietrowski, Marketing manager

in the Telecom Systems Group, submitted DECvoice for the award. She and Ed Bruckert, Engineering manager in the Voice Products Group, accepted the award on behalf of Digital.

The ComForum awards honor corporations and individuals for their innovative contributions and developments. Besides Digital, AT&T Network Systems, DSC Communications Corp., GTE Mobilnet, Northern Telecom, Motorola, and Alcatel Network Systems were also recognized for their innovations. ●

## Digital joins waste management council

Did you ever open a package and wade through piles of cardboard, thousands of plastic foam chips, and miles of plastic wrap, only to discover that what was in the package was about one-tenth the size of the package itself?

For Digital and its customers, scenes like this are quickly becoming a thing of the past. As part of the corporate Waste Minimization program, the company has been actively pursuing packaging designs that adequately protect products and the environment.

In fact, Digital's work in this area has been so far ahead of the "pack" that the company was invited to serve on the Northeast Source Reduction Council. The council was formed by the Coalition of Northeastern Governors (CONEG), an organization representing governors of nine northeastern states that work on critical issues. The Council will provide a forum and process that will enable the nine CONEG states, working with business and non-profit organizations, to devise and recommend public solid waste management policies and practices.

Denis O'Sullivan, principal engineer in the Industrial Package Engineering Group, will represent Digital on the council. He will be working with people from Manufacturing, Corporate Distribution, Customer Service, Environmental, Health & Safety, and the Law Department to provide input and share feedback on these issues. ●





### Deadlines for 'Digital This Week'

Deadlines for "Digital This Week" have been established to help employees plan events and publicity around certain editions. Deadlines do not pertain to Marketplace, which is first-come, first-served.

The next three issues and deadlines for DTW are:

Nov. 14 issue — Nov. 1 deadline.

Dec. 5 issue — Nov. 20 deadline

Dec. 19 issue — Dec. 6 deadline.

Because of the upcoming Thanksgiving holiday, the deadline for the Dec. 5 issue has been changed to Nov. 20. Please make a note of it.

### MEAC to sponsor Toys for Tots

The Maynard Employee Activities Committee (MEAC) will sponsor the annual Toys for Tots drive Nov. 27-Dec. 15. Toys for Tots is a program that provides toys for the needy through the efforts of Digital employees and the U.S. Marine Corps Reserve. For more information, contact Jill Sabanski, DTN 223-5376.

### Toastmasters meeting notices

Toastmasters, an organization which helps members develop public speaking skills, meets on alternate Wednesdays from noon to 1 p.m. at the Chelmsford facility (CTC). The meetings are held in the CTC library. All employees are welcome; just bring a lunch. Contact Charles Lewis, DTN 287-3403, for more information.

Visitors are welcome at any of the remaining 1989 meetings: Nov. 1, 15, and 29, and Dec. 13 and 27.

### Synergists calendar of events

"The Synergists," a Digital Toastmasters club in Marlboro since 1979, invites everyone who is interested in developing public speaking skills to attend a regular meeting or one of these special events. Synergists' meetings are held in Marlboro (usually in MRO1) on Tuesdays from noon-1 p.m. Contact Barbara Baker at DTN 296-3371 (GIAMEM::BAKER) for more information.

Nov. 7 — Meet in MRO4.

Nov. 21 — Members and guests are invited to participate in a debate.

Friday, Dec. 8 — Special dinner meeting to celebrate the club's 10th anniversary.

### VAX/EDI course now three days

The VAX/EDI V1.0 course (EY-A217E-L0), scheduled for Dec. 18-20 and March 19-21, has now been updated to three days. Each day is designed for a specific audience and covers specific information. Students have the option of attending only those days they need. For a complete course description or further information, contact Kam Lee via VAXmail at CECV01::KLEE.

### Metpay offices to close

Metpay offices will be closed the afternoon of Wednesday, Oct. 25. If you need service, call (800) 422-4272.

### Vanpool riders wanted

Riders are needed for a vanpool from Central Square, Cambridge to the DLB facility in Marlboro. The van stops at Harvard Square, Porter Square, Arlington DPW lot, Maynard, and Hudson (HLO). Contact Valerie Clift, DTN 225-6460 (CADSYS::CLIFT), for more information.

### DEC Carolers herald holiday season

The DEC Carolers, a singing group which performs seasonal songs during the holidays, is beginning its 14th season. Men and women of all vocal ranges are welcome to join and sing along. The group sings four-part arrangements for mixed voices at various Digital sites during lunchtime. Rehearsals are held at Hudson, Maynard, Spit Brook, and Westford.

Hudson area carolers rehearse Tuesdays and Thursdays from noon to 1 p.m. in the Mount Everest Conference Room, HLO2-3/N10. For more information, contact Karen Wells, DTN 225-7140 (TOLKIN::WELLS).

The Spit Brook Singers rehearse Tuesdays from 11:45 a.m.-12:45 p.m. in various conference rooms at Spit Brook (ZKO). Contact Nina Eppes (DSSDEV::EPPES).

The Maynard DEC Carolers rehearse Mondays and Wednesdays beginning Nov. 1 at locations to be announced. For more information, contact Mike Kaiser, DTN 223-4842 (FDCV10::KAISER).

Westford area employees who are interested in the DEC Carolers should contact Dave Larrick, DTN 235-8436 (HANNAH::DCL).

### Digital Ski Club meets Nov. 1

The Digital Ski Club will meet Nov. 1 at 7 p.m. at the Elks Club in Chelmsford. There will be door prizes, trip sign-ups and information, discount ski tickets, representatives from boot, ski, and bindings companies, plus a ski fashion show and ski tuning clinic. In the spirit of Halloween, special prizes will be given for the best costumes. All interested employees are welcome to attend. For more information contact Tim Allard (DASXPS::ALLARD), or Ken Chenis (ESTACY::CHENIS).



## Employee Locator Facility (ELF) moving to VTX

Version 2 of the Employee Locator Facility (ELF), a directory of all Digital employees, will be available on VTX early next month. To access it, type VTX ELF at the \$ (dollar sign) prompt. ELF may also be available as a menu choice on your ALL-IN-1 system.

ELF Version 2 differs considerably from Version 1. More remote ELF infobases make Version 2 more available to users, and completely new software makes it more functional. ELF Version 2 uses Digital's Distributed Directory Service (DDS) product, replacing the proprietary database structure of ELF Version 1 which has served the corporation since 1983.

Basic data about employees is obtained monthly from the DICOS system in Europe and the ELF directory collection system in GIA, and weekly from the Employee Master File (EMF) in the USA. Employees may supplement this data by adding their node, username, alternate telephone numbers, alternate given and surnames, job position, and organizational units.

If you wish to change supplementary data in your ELF entry, you will need a password. Employees who were registered in ELF V1 will be allowed to assign their own ELF V2 password to allow them to modify their supplementary data. Employees who were not registered in ELF V1 may contact their local ELF administrator for a password. Data provided to ELF by Personnel or Telecommunications may only be updated by contacting these organizations.

Because ELF V2 is so different from ELF V1, employees should read one of the available ELF V2 user documents or guides before using it. User documentation is available from your local MTS support or ELF Administrator. A brief user guide is printed in the U.S. and European telephone directories. An overview is included in the new MTS User's Guide, which is available from Northboro (part number EZ-33112-50). Extensive help is available from ELF itself and a VAX Notes conference is located at IAMOK::ELF. ●

## 36th update to Personnel Policies and Procedures Manual available Nov. 1

The 36th Update to the Personnel Policies and Procedures Manual will be distributed the week of Nov. 1. To order, request part number EF-A0511-50 on a Request for Literature Form. Mail the completed form to Publishing and

Circulation Services at NRO3-1/W03.

Phone orders can be placed by calling DTN 234-4323 or (508) 351-4323. Send ALL-IN-1 orders to ORDER NRO. VAXmail orders should be sent to NEST::ORDER. Please include

name, badge number, cost center, site code/mailstop of the requisitioner, "ship to" address, and part number of the item you are ordering. ●

## Defibrillator donated to Maynard Fire Department



*Thanks to a donation from the Maynard Contributions Committee, the Maynard Fire Department has purchased a defibrillator for use by its emergency medical technicians. A defibrillator uses an electric current to restore regular heartbeat to an injured person. Shown here from left are Marsha Gaillardet, Eastern Massachusetts Community Relations manager; Lynn Graves, MLO Health Services; Capt. Robert "Smokey" Bernard, Maynard Fire Department; Mary Turchi, manager, MLO Health Services; Fred Oldfield, Mill plant manager; and Chief Ron Cassidy, Maynard Fire Department.*

## Upcoming lunch time seminars — 'Balancing Work and Home Life'

In this series of lunch time seminars sponsored by the Greater Maynard Area Employee Assistance Program (EAP), you will gain useful ideas to better balance home and work life and will begin to design a plan that will help you achieve that better balance. The focus of the workshop is on action, not information.

The seminars will run from 11:45 a.m.-1 p.m. as listed below:

Date	Location	Conference Room
Oct. 30	ML05-4	Sheridan
Nov. 6	Hudson (HLO)	Hall of White Mist
Nov. 13	OGO	Stowbrook
Nov. 20	ACO	Constitution ●

## Open house for non-exempt employees to be hosted in Hudson

Digital's Semiconductor and Interconnect Technology (SCIT) organization will host an open house for non-exempt employees on Wednesday, Nov. 1, from 3-7 p.m. in the HLO2 lobby area (77 Reed Road).

Positions are available on all three shifts and will be located in Hudson, Andover and Franklin, Mass. Clerical support personnel, material handlers,

and non-exempt technical people are being sought. For a more detailed listing of job descriptions, please refer to the JOBS notes file.

This open house is for internal candidates only. If possible, please bring two copies of your resume with you. For more information, contact SHARE::ODAY. ●



## Educational Opportunities

### 'Intro to VMS System Management' available from Ed. Services

The following self-paced instruction will be of particular interest to those who are involved in managing — or learning how to manage — a VMS system.

**VAXcluster System Management**  
(EY- 3507E-PR, text-based, no other suffix)

**DECnet-VAX Network Management**  
(EY-8285E-PR, text-based, no other suffix)

**Intro to VMS System Management**  
(EY- 3504E-TK, TK50 course package; -MT, 1600 bpi mag tape; -RX, RX50 course package; -SP, student package)

**VAX/VMS System Management I**

(EY- 3505E- plus suffix)  
**Advanced VMS Command Procedures** (EY-3506E- plus suffix)  
**VMS Utilities and Commands** (EY-3501E- plus suffix)

U.S. Digital employees may order the above-mentioned courses through a charge to cost centers by sending a memo to Educational Services' Order Processing group in Billerica, Mass. Address your VAXmail memos to CECV03::MAILPO or your ALL- IN-1 memos to MAILPO @ BKO. Include your name, badge number, cost center, mailstop, full facility address, quantity, title, desired media, and part number. ●

### Course offerings from Information Systems Training

To register, contact Central Registration at DTN 249-4670 or (617) 276-4670. To register electronically, send mail to FSTVAX::BUOREG. All courses are being offered at the Bedford Training Center (BUO). For further information, or a detailed course description, send mail to CECVO1::KLEE.

**Writing Command Procedures** (EY-A207E-LO)

Dec. 4-8, Feb. 12-16, March 26-30

**Business Decisions for System Development** (EY-0138E-LO)  
Dec. 11-13

**Introduction to VAXset Tools** (EY-A220E-LO)  
Nov. 6-10, Dec. 11-15

**Accelerated VAXset Tools** (EY-A203E-LO)  
Nov. 13-17, Dec. 18-22

**Basic FOCUS for IS Professionals** (EY-4403E-LO)  
Dec. 4-6

**FOCUS Application Integration for IS Professionals** (EY-4404E-LO)  
Dec. 18-19 ●

### Corporate Employment Training begins third year

Now in its third year, Corporate Employment Training and Development has delivered more than 75 course offerings to more than 900 participants. Courses such as "Behavioral Interviewing Techniques," "TESS Basic User Training," and "Hiring People with Disabilities" address topics of concern to employment managers.

Currently managed by Sallyann Kaskas, coordinated by Ingrid Adam, and "staffed" by three volunteer committees representing employment managers, recruiters, and employment coordinators, CETD is committed to

providing exceptional training opportunities to the employment community. The FY90 curriculum offers enhanced versions of the current courses as well as a new course, "Strategic Selling for Recruiters." Courses in workforce planning and in transition management are also being developed.

In the U.S., Canada, and GIA, classes are open to both personnel and line organizations, with priority given to members of the employment community. For more information, check the VTX Education and Training menu, or call DTN 251-1362. ●

### Technical seminars

This is an integrated calendar of the Technical Seminar Series. For a complete listing of seminar locations and contacts, consult LIVE WIRE, Digital's electronic news system.

**Oct. 31, 10-11 a.m., ZKO-1**

*"Object-Oriented Structured Design"*

Tony Wasserman, Interactive Development Environments (IDE)

**Nov. 1, 10 a.m.-noon, HLO-HWM**

*"Parallel Algorithms for Super Performance"*

John Shakshober and Zarka Cvetanovic, Digital

**Nov. 10, 10-11 a.m., ZKO-1**

*"What Are Good Graphic User Interfaces?"*

Jeffrey Bonar, Virtual Machine Corp.

**Nov. 15, 9:30-11:30 a.m., DLB12**

*"Exemplar-Based Decision Processes in Machine Learning"*

Dr. Peter Frey, Northwestern University

**Nov. 20, 1-4 p.m., ZKO-1**

*"Secure Systems Design"*

Morrie Gasser, Digital ●

### Career Resource Center open at Parker Street

The SSMI Headquarters Employment organization at Parker Street has opened a Career Resource Center for employees. The center is located at PKO3-2, pole 27C. It offers assistance in accessing VTX JOBS BOOK and other on-line job postings; reference materials on career management; literature on both internal and external training; and self-assessment (skills and career) tools. One-on-one career information sessions are available by appointment only.

The center's "open" hours are from 8 a.m.-12:30 p.m. Afternoon hours (1:30 p.m.-5 p.m.) are by appointment only.

For more information, contact No-reen Shields PKO, DTN 223-4025. For appointments, call MaryAnn Thompson, DTN 223- 7636. ●



## Miscellaneous

continued from page 5

BASKETBALL CARDS, Fleer-86/87, \$125; 87/88-\$30; 88/89-\$15, Topps, 74/75, 77/82, Roger, 247-2005

WHEELCHAIR, \$110; WALKER, \$20; 4-PRONG CANE, almost new, or \$125 for all, Bob, 277-7175

TIRES, Sears Safeguard, P216/75R15, mud/snows, used 5 mos, \$75/pr, Pete, 237-3073

LADIES DIAMOND RING, .84 carats, round, brilliant, 14k gold setting, \$1600/80, Bill, 247-2685

SNOWBLOWER, Ariens ST824, electric start, exc cond, relocating to Calif, \$800, Bruce, 229-7709

## Motorcycles

'86 YAMAHA BIG WHEEL 200SE, < 30 hrs, exc cond, \$1350/firm, Sylvia, 293-5227

'83 HONDA NIGHTHAWK 550, maroon, 3700mi grt cond, runs perf, \$1200/80, Vicky, 223-7593

## Pets

CAT, loving, gentle, long-haired, orange, male, 6 mos old, has all shots, Susan, 223-6199

PUPPY, Yorkshire Terrier, male, has shots, \$350, Denise, 292-2050

PUPPIES, Cocker Spaniel, due Oct 7, expecting black and/or buff, \$300/m, \$350/f, Alan, 292-6012

PUPPIES, Rottweiler, akc, 8 m, 1 f, born 9/5 rdy Nov. 1, gd w chldrn, fmlly, \$500, Dana, 223-6597

DOG, German Shepherd, f, 1yr old, registered, shots, obedience trng, \$500/80, Earline, 276-8460

## Real Estate

HUTCHINSON ISLAND FL, timeshare condo, 2bdr, 2ba, May week 3 (week 20), oceanfront, golf, Dick, 282-1146

ARLINGTON, Brookside condo, 1bdr, corner unit, pool, immed occupancy, \$89.9k, Bob, 228-5047

PEPPERELL, 8 rm col, 3-4bdr, 2.5ba, lg deck, 2+acres, vry private, \$185k, Tim, 226-7607

NEAR HYANNIS, Sea Mist Resort, 1bdr condo, 5min to bch, deeded, red time, \$8900, Grace, 287-3145

WELLS BEACH ME, 1+bdr condo, 50yds to bch, on site rntl mgt avail, owner fin @9Z, \$83k, Dave, 282-1155

NASHUA, condo, 2bdr, 2ba, den, storage, ac, full appl, deck, 1.5yr old, \$135k, Jim, 226-2044

MIDDLETON, 1/2 acre wooded lot, perc tested & approved, nr rts 1/128/114, \$79k, Lorelei, 249-1416

LINCOLN NH, Loon Mtn Village, wooded bldg lot, flr plan, 4season, exc view, \$50,995, Ken, 291-9988

AVON, 2 fam house, family neighborhood, nr twn ctr, 2bdr/ea unit, \$170k, Ray, 508/264-4705

SHIRLEY, twnhse, 3bdr, 2ba, end unit, lr w/frplc, deck, ac, balcony, \$119.9k, Lorraine, 226-6056

WORCESTER, pte rok-lake Quinsig, twnhse, appliances, ctr air, 2bdr, 2ba, \$159.9k, Kim, 291-8102

SUTTON, cape, 2yrs old, vry private, upgrades galore, cul-de-sac, \$204.9k, John, 291-7374

W YARMOUTH, cape, 2yr old, 3bdr, 1.5ba, wlk to bch, hd wd flrs, pvt, yd landscaped, \$145k, Bill, 297-5958

BARRINGTON NH, summer cottage, 100' wtrfrnt, dock, frnshd, 2bdr, frplc, \$72.5k, Ken, 273-5251

WORCESTER, twnhse, 2 lg bdr, 1.5ba, finished lndry rm, financing, \$93k, Kate, 223-2724

WOBBURN, new split entry, 3 bdr, unfnsh bsmt, gar, nr bus to Bos/grade school, \$198k, Mike, 274-6638

HOLLIS NH, 1 ac, prime comm location, adj to shpg mall, perc tested, \$150k, Peter, 251-1345

GRAFTON, new twnhse, gar, skylight, full-appl, \$123k, Alice, 291-0024

MARLBORO, 4 lvl twnhse, 7+rms, 1.5 ba, lndry rm, built-ins, cntrl ac, low fee, \$165k, Diane, 297-3829

WORCESTER, 2 fam, 5 rms ea, fl bsmt, drmr attic, hrd wd flrs, 2-car gar, exc loc, \$159k, Jackie, 297-3773

ACTON, condo, spac 2 bdrm, AC, balc, tennis, pool, pt fl, condo, \$119.9k, Steve, 297-5850

CHELMSFORD, 3 br cnch, wded lot, 1 fl+2 hlf ba, lr, dr, fm rm, gar, AC, wdstv, deck, \$169.9k, Dee, 297-3677

LEOMINSTER, 3 br lv, dr, kit, 1.5 ba, gar, great neigh, newly renov, \$134.9k, Linda, 223-2917

HUDSON, 3 bdr split, 1.5 ba, appl, nice area, avail 3/90, \$179.9k neg, Larry, 297-4017

FRAMINGHAM, lg 5rm condo, 2bdr, pool, ac, sunny corner unit, convnt loc, \$89.9k, Rich, 291-0421

NASHUA, 1st fl condo, 2bdr, 1.5ba, pool, 2 bdr apt, w/w, ac, steal @ \$75.9k, Bob, 297-7520

N FRAMINGHAM, 6rm ranch, 3bdr, 1.5ba, 1/4 acre, \$169.9k, Nadine, 291-7373

## Recreational Vehicles

'86 BAYLINER 1650, trailer, 130 i/o Volvo, low hours, stereo, \$6500, Carolyn, 296-3484

'85 SX310 IMP 31', boat, twin 330 Merc Cruisers, fully equipped, low hours, \$45k, Ron, 235-8339

WHITEWATER KAYAK, Perc mirage, gd cond, floatation, bkstrap, padding, \$425/80, Peter, 291-8774

'85 HONDA 125 ATV, 4 wheel, exc cond, \$900/80, Al, 226-6303

'87 LAYTON CELEBRITY, 28' travel trailer, slips 8, ac, many extras, like new, \$12k/firm, Carlos, 297-3743

## Rentals

SOMERVILLE, 3bdr apt, 1st fl, 6rms, appliances, ceiling fans, min to Bos, \$1050/mo, Cathy, 294-5721

NASHUA, exit 1, condo, 2bdr, appl, ac, tennis, pool, sauna, no pets, \$695/incl heat, Matt, 249-4900

LANCASTER, antique col, 9rms, 3bdr, 2car gar, 1.5 ba, lg yd, deck, \$1200/mo or buy, Wanda, 229-7857

LEOMINSTER, spacious 2bdr apt, 2nd fl, appl, hookups, nr 2/190/shop, avail Nov, \$585+util, Carol, 273-5765

WORCESTER, nr SHR/BYO, private 1bdr in-law apt, appl, w/w, driveway, yard, \$575/mo, Lea, 278-4411

WAKEFIELD, 5rm cape, dead end st, lg yd, quiet nghbrhd, avail 11/1, \$925/mo, Bob, 223-8250

BOXBORO, 1bdr condo, sldrs to patio, wooded setting nr 495/2/111, hw incl, \$600+, Linda, 249-4188

FITCHBURG, 2bdr, 1st fl, stove/refrig inc, off st pkgng, pets negot, \$280/bi-wk+util, Sue, 227-3732

LEOMINSTER, 2bdr condo, nr rts 2, 12, 190, 117, lg yd, strg, ref req, \$725/mo, William, 234-4568

LANCASTER, antique col, 9rms, 3bdr, 1.5ba, lg yd, frplc fr, deck, \$1200/mo, option to buy, Wanda, 229-7857

MARBLEHEAD, twnhse, 3bdr, 2ba, 2frplc, all appl, pkgng, harbor area, avail 11/1, \$1100+util, Bill, 297-3026

CLINTON, 4.5 rm apt, 2nd fl of 2 fam, 2bdr, scrn prch hookups, ac, strg, pkgng, \$625 car hr, Diane, 234-4876

MILLBURY, twnhse, 2bdr, 2ba, 1 car gar, \$850+util, or buy \$116k, Rao, 296-5296

SHIRLEY, @Ayer line, lg duplex, full appl, attic, cellar, lg yd, hookups, 2bdr, \$950+util, Ted, 297-6488

W YARMOUTH, 2bdr condo, 1.5ba, appl, wshr/dryr, patio, frplc, attic, \$695+util, Al, 226-7136

HAMPTON BCH NH, 5.5rms, fully appl, hookups, ac, pkgng for 2, avail 11/1, nr bch, \$750+util, Elaine, 223-4015

MARLBORO, huge 1bdr apt, Windsor Hts, avail 11/1, \$705/mo incl heat, Robert, 223-1040

MARLBORO, rm in 2bdr condo, Bolton St, nonsmkr, \$85/wk, Tom, 297-1571

WORCESTER, 4 bd hs, off Lincoln St, 2 ba, frpl, lg prv fncd-in yd, appl, \$800+util, Brenda, 297-3305

HUDSON, 9 rm vict, 4+bd, 1r w/frpl, 1+ ba, 3 car gar, avail 11/1 \$1,200+ util Laura, 223-4349

BELMONT, 2 bdr, nr T, Rte 2, Harvard Sq, fl Appl kit, w/d, gar, \$1200furn/unfurn neg, Shuba, 437-5805

BELLINGHAM, new horse boarding facility 15 10x12 box stalls 2 mi off 1495, \$375/mo, Jean, 223-6913

HUDSON, newly renovated, 2bdr home, country setting, avail immed, \$950+util, Linda, 223-6863

WORCESTER, condo, 1bdr, ac, w/w, pkgng, wshr/dryr, nr 290/495, Burncoat area, \$550/mo, Jim, 296-3556 or 3520

N ANDOVER, modern condo, 2bdr, top fl, cntry setng, hlth clb, tennis, pool, \$825/mo, Nancy, 245-5193

CONCORD, sunny home, 3bdr, 2.5ba, lg frplc lr, study, 2 car gar, wlk to ctr/tran, \$2000/mo, Frank, 232-2548

## Roommates

ACTON, shr 3bdr Nagog Vil condo, all appliances, ten pl, quiet, avail 10/1, \$375/incl util, Dave, 227-3571

WORCESTER, f, shr 2bdr condo, own ba, w/d, off-st pkgng cats, avail 11/1, \$400/incl util, Cynthia, 226-2491

CHELMSFORD, f, nonsmkr, shr condo, 2bdr, 2ba, pool, ten, ac, mst lk cats, wshr/dryr, \$400+/util, Ruby, 276-8451

NORTHBRIDGE/WHITINSVILLE, f, prof, nonsmkr, shr spac 2bdr apt, wshr, gas ht, \$300+util, Robyn, 297-2860

NATICK, m/f, prefer nonsmkr, no pets, 2lg bdr, lba, on rt 27nr 9, \$412 + util + \$150 dep, Pam, 251-1071

WESTFORD, m/f, prof, nonsmkr, 20's, shr 4bdr 2.5ba hse, 2 car gar, w/d, \$355 + 1/4 util, Scott, 297-5336

CLINTON, f, prof, nonsmkr, shr 2bdr 2ba apt, lg closet appl, avail immed, \$365+1/2 util, Sherry, 276-8953

HAVERHILL, m, nonsmkr, shr, 2bdr apt, in 2fam hse, nr 495, yd, parking, \$325+1/2 util, Ren, 275-3346

LUNENBURG, f, share 4 bdr hse, 4 mi Searstown/rte 2, \$300 inc util, Lorna, 223-6124

CLINTON, f/m prof 27+, shr furn twnhse condo, lg bdr, pr ba, lndry, \$450+ 1/2 util, Ren, 291-7906

LEOMINSTER, m/f non-smoking, 2 bdr duplex, \$300 + 1/2 util Joanne, 276-9884

LEICESTER, m, shr 9 rm hse, frplc, lg yd, no pts, wshr/dryr, nr 90/290, \$350/incl util, Bob, 4 pm 292-2225

BOXBORO, m/f, shr 2bdr apt, nr rt2/495, no smkr/pets, coin-op wshr/dryr, \$407.50+1/2util, Amy, 297-5846

ACTON, m/f, nonsmkr, 3bdr, wshr/dryr, quiet, 1.5ba, have cat, avail immed, \$450+1/2 util, Suzanne, 223-3318

HUDSON, 2 f + dog shr 4 bdr hse, 1.5 ba, lg yd/ deck w/d, \$275 + 1/3 util, Stan, 268-3275

MILFORD, m/f, prof, 25+, nonsmkr, shr new duplex, 2bdr, 2ba, avail 12/1, \$425+1/2 util, Paula, 268-3121

ACTON, prof person, shr 2bdr condo, cntry setting, overlk pool, \$350/mo Laurence, 279-3081

NASHUA, m/f, shr furn deluxe apt, 2bdr, pool, tennis, avail 12/1, nr rte 3, \$315+1/2 util, Jane, 249-1500

## Sporting Goods

DP FITNESS SYSTEM, legs, arms, stomach, back, over 250+lbs, barely used, \$150/80, Cindy, 297-5474

WOMEN'S BICYCLE, Raleigh Rapide, 10 spd, exc cond, \$75, Alison, 297-2973

SKIS, Rossignol, 140cm, bindings, poles, sz 5.5 boots, used 4 seasons, \$50/set, Steve, 232-2443

TREADMILL, DP fit for life power track 2000, elec console oprtn, \$250/80, Diana, 292-2510

SKI PACKAGE, grt for novice to intermed, Raichle sz 10 bts, bindings, poles, skis, \$140, Mike, 275-3360

2 WIND SURF BD & SAIL, O'Brien bd + 6.3 sail, Tiga Bd + 6.0 sail, \$325 ea, Donna, 223-6533

GOLF BALLS, 5 dz incl 3 dz molitor series, all new, in boxes, \$45, Sonia, 234-5446

NORDICK TRACK, 1 yr old, usd 2 mos, \$350/80, Jo-Ann, 234-5318

SKI BOOTS, sz 10, blue alpinas, \$50/80; DOWN SKI JACKET, men's, sz L, blk/red, \$100/80, Carol, 21-3370

SCUBA EQUIPMENT, Dacor BC + super 92 tank, parkway vet suit, guages, regulators, \$950/80, Donna, 296-4307

SOLOFLEX WEIGHT SYS, leg exten & butterfly attachmt, padded bench, \$700, John, 237-3764

## Wanted

ROTOTILLER, rear tine placement, at least 5hp or more, for large garden, Jackie, 234-4773

MATERNITY CLOTHES, sizes 8-12, winter/early spring, Pam, 268-3226

TENORS AND BASSES, for Master Singers of Worcester, Paul, 297-6867

HARVEST TABLE, or other table with lengthwise drop leaves, Kelley, 227-4174

VCR, good working cond, Lucinda, 287-3555

OFFICE EQUIPMENT, FURNITURE, RUGS, Eleanor, 268-3493

SLOT CARS, HO scale, Aurora, HO gage, 1/87 scale, Betty, 244-6619

LARGE BIRD CAGE for 2 Cockatiels, Carol, 223-2318

FISHING/CRUISING BOAT, 16'+, swap for Falmouth time share, Pete, 237-3073

'80-83 HONDA SILVERWING, in good cond, 500cc or 650cc, Holly, 249-4785



# The Marketplace

## How 'The Marketplace' works

"The Marketplace" is a free service provided by *Digital This Week* for Digital employees in the Greater Maynard Area. Ads are printed on a first-come, first-served basis, as space allows, regardless of category. If your ad is time-sensitive, keep in mind that ad volume is heavy, so you should allow four to six weeks for your ad to appear in print.

1. When submitting an ad, please include your full name, mailstop, and internal telephone number (DTN).
2. Please submit only one ad at a time. Multiple submissions will not be accepted. Ads will appear only once.
3. Ads must be submitted in writing (hard copy) and sent to Marketplace, CFO2-3/K23.
4. DTW does not print ads for services (babysitting, snow-plowing, etc.) or profit-making enterprises. Ads must be worded clearly, typewritten or printed, and in good taste. DTW reserves the right to edit for space.
5. Ads can be cancelled simply by calling the Marketplace office. If an item has been sold, please cancel the ad so that space can be opened for another listing. If you have any questions about the Marketplace guidelines, call the DTW office at DTN 251-1308.

## Appliances

**FREEZER**, Sears, chest style, \$125, Dan, 297-2731

**REFRIGERATOR**, Amana, 25cu ft side-by-side, w/10 cu ft freezer, many options, Best Offer, Kam, 223-8390

**FREEZER**, Sears upright, frostless, power saver, \$180/80, Kam, 223-8390

**DRYER**, Whirlpool, \$250; **WASHER**, GE, \$100; **STOVE**, Hotpoint, \$100; **FRIDGE**, GE, \$75, Angela, 297-7577

**FREEZER**, GE, upright, 12 cu ft, exc cond, white, \$125, Jeanne, 251-1237

**FOOD PROCESSOR**, Sanyo food factory, slices dices, \$50/80, Devin, 223-9105

**DISHWASHER**, Kenmore, gold, built-in, good working cond, free, Carol, 223-8057

**ELECTRIC STOVE**, corning smooth top, self cleaning oven, very efficient, \$300, Mike, 289-1108

## Cars

'84 TOYOTA TERCEL SR5, 4x4 wagon, silver/blue, 76k mi, exc cond, \$3200/80, Seong, 289-1097

'86.5 TOYOTA SUPRA, met blue, 5spd, targa top, ac, fully equip, exc cond, \$12k/80, Lenny, 296-3377

'78 FORD E150 VAN, 1 owner, customized, exc cond, must be seen, \$2900/80, Marcia, 223-5720

'83 CHEVY MALIBU, wagon, v6, ps/pb, am/fm ster, rear defog, ac, 83kmi, exc cond, \$2850/80, Rich, 223-8451

'85 CORVETTE COUPE, silver metlc, chrl int, loaded, auto, transprt top, exc cond, \$17k/80, Gene, 226-2377

'88 CHEVY BARETTA, v6 EFI, sporty, 5spd, ac, am/fm/cass, \$7900, Kim, 282-1467

'72 OLDS CUTLASS, body in exc cond, rally wheels, nds motor/transmission, \$750/80, Donna, 234-4692

'86 VOLVO 740 GLE, 4dr, blue, blk leath int, snrf, ac, pwr drs/win, loaded, 54kmi, \$13.5k, Scott, 277-7053

'87 CAMARO, red/blk int, 36k mi, 6cyl, 5spd, am/fm/cass, \$6300, Joe, 244-7549

'78 PORSCHE 928, 50k mi, stored winters, clean car, looks/runs great, \$12k, Lou, 269-2152

'86 NISSAN, pickup, long bed w/rubber mat, inside 4wd, am/fm, like new tires, \$6500, Carolyn, 296-3484

'74 SAAB 99, runs, or parts car, \$150, Jackie, 237-3381

'86 PONTIAC FIREBIRD, 54k mi, 2.8L v6, auto, med metallic grey, \$8000/80, Cathy, 289-1208

'84 HONDA ACCORD LX, hatchback, 1 owner, snrf, 5spd, exc cond, Susan, 223-6199

'87 NISSAN SENTRA SE, sport coupe, white/gray, exc cond, 5spd, 51k hiwy mi, \$6200, Marjorie, 276-9194

'88 CHEVY S10 BLAZER, 4x4, exc cond, 27kmi, power, am/fm/cass, snrf, \$14.5k/80, Ernie, 223-8276

'88 CHEVY BARETTA, V6 EFI, sporty, 5spd, ac, am/fm/cass, \$7900, Kim, 282-1467

'81 SAAB 900, turbo, 5spd, int/ext exc, snrf, ac, all sched service, 111k mi, \$2300/80, Sue, 297-2776

'84 HONDA ACCORD, hatchback, 5spd, am/fm/cass, 72kmi, snrf, exc cond, \$4200, Joan, 297-3855

'81 BUICK SKYLARK, 109k mi, 4dr, 6 cyl, ac, cruise, burgundy, \$1500/80, Rick, 297-7468

'87 VW JETTA GL, blue, 5spd, fwd, cloth int, Alpine stereo, like new, 35k mi, \$7200, Diane, 279-3067

'86 TOYOTA 4-RUNNER, loaded, 4wd, very good cond, \$9500, Alan, 251-1288

'81 FORD FAIRMONT, wagon, ac, ps/pb, r/rf rck, cloth int, white, grt heater, 89kmi, \$500, Mike, 275-3360

'80 DATSUN B210, 4dr, snrf, auto, silver, new engine, 50kmi, runs grt, some rust, \$850/80, Clair, 235-8437

'80 CHEVY MALIBU, 4dr, new tires, stereo, looks/runs good, \$700/80, Robert, 297-3748

'77 BUICK REGAL SR, t-tops, new engine/rear end/transmission/brakes, stereo, \$1000, Chuck, 275-3360

'82 NISSAN SENTRA XE, hatchback, 5spd, new clutch, ac, good transportation, \$950/80, Paula, 292-2438

'83 TOYOTA SUPRA, snrf, loaded, looks new, new paint/clutch/muffler/alternator, \$5800, Louis, 223-1971

'81 DODGE VAN, fully customized, 225 slant 6, 4spd, 90.2k mi, am/fm/cass, \$3500/80, Jeff, 297-7282

'88 FORD TEMPO, 4dr, auto, ac, stereo, 24k miles, exc cond, Rabih, 291-8434

'79 MERCEDES 240D, 4spd, new exhaust, exc cond, \$5000, Rini, 276-8170

'86 FORD ESCORT GT, red/grey int, frnt whl dr, 5spd, am/fm/cass, pwr snrf, exc cond, \$3500, Dave, 223-9614

'85 TOYOTA CELICA, taupe, 54k mi, well maint, exc cond, \$5500/80, Joe, 289-1736

'84 VOLVO 242DL, 5 spd, Blue, 2 dr, 135 hiwy mi, exc cdn, maint records, PJ, 276-8482

'84 DODGE DAYTONA, 2dr, exc cond, maroon, auto, fwd, nw tires/exhaust, 74k mi, \$2795, Sharon, 223-1294

'81 BMW 320i, beige, 2dr, ac, am/fm/cass, alarm, 101kmi, 5spd, \$4200, Channeary, 225-5500

'81 TOYOTA TERCEL, red, 4spd, 92K mi, exc cond, \$1300/80, Lori, 296-3594

'85 NISSAN 200SX, cpe, pwr, 5 spd, ps/snrf/stero, pwr win/cruise/cln, 85K mi, \$4900/80, Theresa, 237-3012

'85 ISUZU, trooper II, 2dr, 4spd, 4wd, ps, pb, am/fm cass, fog lgts, 43K mi, \$5900, Carol, 293-5019

'87 MAZDA RX7 turbo, std, 30K mi, white, am/fm/cass, exc cond, \$13.5K, Ann, 223-6045

'84 VOLVO 242DL, 5 spd, Blue, 2 dr, 135 hiwy mi, exc cdn, maint records, PJ, 276-8482

'84 DODGE DAYTONA, 2dr, exc cond, maroon, auto, fwd, nw tires/exhaust, 74k mi, \$2795, Sharon, 223-1294

'81 BMW 320i, beige, 2dr, ac, am/fm/cass, alarm, 101kmi, 5spd, \$4200, Channeary, 225-5500

'81 TOYOTA TERCEL, red, 4spd, 92K mi, exc cond, \$1300/80, Lori, 296-3594

'86 GMC S15, sierra pkup, ext cab, sierra pkg, 1 jmp st, 17k mi, am/fm, ps, pb, \$6300, Michalene, 234-4031

'85 NISSAN 200SX, cpe, pwr, 5 spd, ps/snrf/stero, pwr win/cruise/cln, 85K mi, \$4900/80, Theresa, 237-3012

'85 ISUZU, trooper II, 2dr, 4spd, 4wd, ps, pb, am/fm cass, fog lgts, 43K mi, \$5900, Carol, 293-5019

'87 MAZDA RX7 turbo, std, 30K mi, white, am/fm/cass exc cond, \$13.5K, Ann, 223-6045

'87 FORD MUSTANG, 2dr hatch, auto, 38k mi, am/fm/cass, exc cond, \$6200/80, Kevin, 226-7025

'89 DODGE, pickup, 6" bed, 4x4, 4cyl, sport tires, am/fm red, 20k mi, well maint, \$11k/80, Jeff, 251-1218

'80 AMC CONCORD, 82kmi, runs great, ps/pb, ac, new tires/muffler, \$1200/80, Brendan, 226-6806

'88 VOLVO 740 GLE, wagon, 32k mi, stereo, cruise, auto, leather seats, \$18,175/80, Brendan, 226-6806

'85 DODGE OMNI GLH, vry gd cond, well maint, many new parts, \$2900/Dave, 223-9553

'83 TOYOTA CRESSIDA, 5spd, exc cond, loaded, am/fm/cass/equalzr, 89khiwy mi, \$4600, Mahendra, 237-2473

'74 BMW 2002, brgndy, 4spd, new tires, part restored, runs gd, all receipts, \$950/80, Pete, 297-7054

'87 NISSAN STANZA, 4dr, ac, am/fm/cass, snrf, pwr lcks/win, 24k mi, \$9000, Bob, 297-6679

'86 FORD 350 SUPER VAN, loaded, hvy duty, ac, tow pack, dealer warr, 19k mi, \$14k/firm, Carlos, 297-3743

'86 NOVA, 4dr, auto, new brakes, 55k mi, \$5200, Maria, 249-4150

## Furniture

**CURIO CABINET**, dark pine, 3 glass shelves, lighted, exc cond, gorgeous, \$150/80, Cindy, 297-5474

**BEDROOM SET**, Harbor Design, oak/teak, queen platform bed, desk, chair, wardrobe, \$1600/80, Richard, 297-5314

**DINETTE SET**, Colonial, table, 4 chairs, hutch, new, dark pine, \$475/80, Dani, 287-3412

**WATERBED**, king sz, 4 poster, mirror hdbd, new heater, motionless matt, side pads, \$250, Kobe, 234-4033

**WATERBED**, king size, mirrored headboard w/shelves, 6 drawers, exc cond, \$500, Marilyn, 291-9662

**LIVINGROOM**, sofa, loveseat, coffee table, swivel rocker recliner, serving cart, B/O, Sylvia, 297-8878

**WATERBED**, king size, mirrored headboard w/shelves, exc cond, \$400, Jody, 297-5902

**LIVING RM**, sofa, 2 matching chairs, \$250, coffee tble, end tble, 2 lamps, \$120, Sharad, 225-6416

**COUCH**, LOVESEAT, CHAIR, grn velour, gd cond, \$500/80, dk grn recliner, \$50, Shawn, 297-2387

**SOFA**, 8", green velvet, curved back, good condition, \$200 or 80, Marie, 289-1920

**MAHOGANY TABLE**, 2 leaves, 8 captain chrs, \$450; **WATERBED**, mattress, grt cond, \$300, Anna, 289-1413

**WATERBED**, qn sz, fiber firm mattress, bookcase headboard, pine, \$100, Rachel, 228-5136

## Miscellaneous

**HAY**, for mulch, \$2.50/bale, hay of Timothy/clover/alfalfa, \$3.25/bale, cheaper by ton, Lois, 237-3363

**FRONT END COVER (BRA)**, fits '86-'89 Toyota Celica ST or GT, hardly used, \$70, Stephanie, 223-6973

**FREE SWIMMING POOL**, 24" above grnd, cvr, half-round deck, no pump/filter, needs liner, Jackie, 234-4773

**TICKETS**, Bos Symp, Fri-Nov 10, Tchaikovsky-Janacek, Yuri Temirkanov conducting, \$64, Jaime, 229-7108

'84 **TANDEM TRAILER**, enclosed, 7500GW, 5"wx16"lx5"H, rugged steel bed const, \$700, Duane, 297-4604

**WOOD STOVE**, Ashley Imperial, thermostat control, used 1 season, \$100/80, Dan, 297-2731

**HEALTH CLUB MEMBERSHIP**, Wayside Racquet & Fitness, Marlboro, \$250/80, +transfer fee \$65, Hina, 234-4968

**WOOD STOVE**, Nashua NR 18, airtight, blower, 4yrs old, 20" metalbestos pipe, \$500/80, Righ, 237-3692

**JUNIOR MEMBERSHIP** (<18yrs), Marlboro Wayside Racquet Club, B/O, Mark, 240-6317

**2 WINTER TIRES**, used 2 mos, radial P185/75R14, \$40/pr, Joanne, 297-2235

**BABY CHANGING TABLE**, infant and toddler car seats, swing, walker, \$25/for all, Dan, 291-7781

**TIRES** (2), Goodyear eagle gt, snow/mud, 225/50 VR15, new, \$100 ea, Lila, 223-6963

**7" CAP**, for Ford Ranger or late model Toyota Trk, exc cond, \$150, Dana 240-6459

**STOVE**, franklin style, wood or coal, all cast iron, \$75, Bob, 296-3581

continued on page 6



## First products announced in ALL-IN-1 Phase II program

Digital has announced the first set of products under the ALL-IN-1 Phase II program. The new family of office products allows users of the industry's widest variety of multivendor desktop devices to work together easily and to share information using their own chosen style of work.

The ALL-IN-1 Phase II program implements Digital's office strategy for the '90s — providing the technologies and services that enable people to work together in task-oriented teams.

Built on our Network Applications Support (NAS) services, the ALL-IN-1 Phase II program includes support for MS-DOS™, OS/2™, and Macintosh™ personal computers; DECwindows VMS and DECwindows UNIX™ workstations; Digital video terminals; and IBM 3270 users.

Said Henry Ancona, vice president, Business and Office Information Systems, "The first set of products in Digital's ALL-IN-1 Phase II family is designed to answer users' needs for choice in desktop device, consistent applications at the desktop, and the ability to work together as a team across the entire organization."

With ALL-IN-1 Phase II, Digital is evolving in three major directions:

- implementing the client/server model and supporting NAS services, including the DECwindows graphical user interface and CDA (Compound Document Architecture);
- expanding ALL-IN-1 from a single product to a family of products that cover the widest variety of desktop devices in the industry;
- providing users with added flexibility in implementing the entire ALL-IN-1 integrated office system, or if needed, a choice of separate ALL-IN-1 electronic mail, business intelligence, electronic publishing and user-specific applications.

Products in the new ALL-IN-1 DESKtop family provide desktop devices in Digital PC LANs and global networks with electronic mail, electronic conferencing, editing and calendar functions, as well as access to the ALL-IN-1 integrated business applications and file cabinet. They are:

- ALL-IN-1 DESKtop for MS-DOS. Client software enables MS-DOS-based PC users to work within the MS-DOS environment, with access to all their PC appli-

cations and ALL-IN-1 applications. Works with Digital's PCSA (Personal Computing System Architecture) Client, Digital's PC LAN software, and existing applications running on the MS-DOS PC.

- ALL-IN-1 DESKtop for VMS DECwindows. Client software supports the power of DECwindows and DECwindows applications while integrating workstation users into the ALL-IN-1 integrated office system. Software includes NAS-based applications such as VAX Notes electronic conferencing and new electronic mail software.
- Macintosh personal computer support and OS/2 Standard Edition personal computer support, client software enabling Macintosh and OS/2 users to work directly with the ALL-IN-1 integrated office system and with Digital's new electronic mail applications.
- Digital video terminal and IBM 3270 support. The ALL-IN-1 Phase II program continues to support Digital's family of VT displays, as well as IBM 3270 terminals through an option card and DECserver family of terminal servers.

### New ALL-IN-1 Integrated Office Servers

To support the ALL-IN-1 DESKtop family, as well as other NAS-supported desktops, Digital also announced new ALL-IN-1 integrated office server products. They include ALL-IN-1 Version 2.4 for VMS, supporting MS-DOS and DECwindows client devices and NAS services including CDA for applications such as electronic publishing; and ALL-IN-1 STARTER Version 2.4 for VMS, a low-cost set of primary office services for customers that want to start small and grow.

Digital also announced that it intends to enhance the ALL-IN-1 integrated office server to enable users of all NAS-supported desktop devices, including the ALL-IN-1 DESKtop family, to share electronic files containing revisable compound documents over a world wide enterprise network. Within the next 12 months, the company also intends to deliver ALL-IN-1 mail products for Macintosh, OS/2 SE, MS-Windows™ and video terminal users.

MS-DOS and MS-Windows are trademarks of Microsoft Corp. OS/2 is a trademark of International Business Machines Corp. Macintosh is a trademark of Apple Computer Co. ●

## Milton Academy scholarships for Digital dependents

Digital dependents living and attending high school in Massachusetts are eligible to receive scholarships for the Massachusetts Advanced Studies Program (MASP), a residential program held at Milton Academy in Milton, Mass.

This six-week summer program is for exceptional high school students between their junior and senior years and is designed to provide the best possible preparation for college admission. Students learn to cope with a college workload in a boarding environment while receiving a complete program of college and career guidance.

Students may only apply to the

MASP through the recommendation of their local public or parochial high school (students attending private high schools are not eligible). Out of the 400 recommendations submitted, MASP will choose approximately 250 students to attend.

The selection process begins in September of the student's junior year. Students who are nominated by their high school will receive an application from MASP.

Students are accepted on the basis of high school grades, the recommendations of principals, counselors, and teachers, and aptitude tests. No applications through Digital are necessary;

dependents of Digital employees are identified through the MASP application process.

Digital pays tuition, room, and board for any permanent, regular employee's dependent attending the program. Application fees, books, lab fees and spending money are the responsibility of the student.

Any questions regarding the Massachusetts Advanced Studies Program should be directed to Judi VonDohlen, Employee Programs manager, or Joanne Urgotis, Employee Programs coordinator, Corporate Community Relations, at DTN 223-6083. ●



## Bob Mulkey appointed Corporate Compensation/Benefits manager



Bob Mulkey

Bob Mulkey has been named Corporate Compensation and Benefits manager, effective Nov. 6. He will report to Dick Walsh, Corporate Personnel manager.

In this role, Bob will provide functional leadership for compensation, benefits and relocation on a company-wide basis. He will ensure that policies, standards, processes and systems are in place across the company to facilitate the development, approval and delivery

of programs that are consistent with worldwide compensation, benefits and relocation strategies. Bob will directly manage a corporate staff and have a shared responsibility with the Personnel Management Committee for managing the organizational Compensation/Benefits managers.

Since joining Digital in 1985, Bob has been the Compensation and Benefits manager in the Low End Systems and Technologies organization. For the past two-and-a-half years he has been the Compensation and Benefits manager for Manufacturing, Engineering and Product Marketing. ●

## Lyn Benton named assistant corporate controller

Lyn Benton has joined Corporate Finance as assistant corporate controller, reporting to Bruce J. Ryan, vice president and corporate controller.

In this role, Lyn will be responsible for managing the Corporate Financial Planning and Analysis organization, as well as providing leadership to the corporation in further developing our financial planning and analytical techniques. She will also play a critical role in the devel-



Lyn Benton

opment of our information architecture.

Lyn has been with Digital for 10 years, holding key financial management positions as Corporate Manufacturing business analysis and reporting manager, Westminster plant controller, and Small Systems Manufacturing Group controller. Since 1987, she has been Low End Systems controller.

Prior to Digital, Lyn had 11 years of financial experience with Foxboro Co., Data General, and Grass Instrument. Lyn holds a bachelor's degree from Northeastern University and an M.B.A. from Babson College. ●

## A note from Ken Olsen about Jack Shields' resignation

*(On Oct. 3, Digital announced the resignation of Jack Shields as an officer of the company and as senior vice president, Sales, Services, Marketing and International. Jack made a personal decision to leave the company and pursue other interests.)*

It is with regret that I accepted the resignation of Jack Shields, senior vice president.

Jack joined Digital in 1961 as a field service engineer. During the course of his 29 years with the company, he has made outstanding contributions to Digital's growth around the world. One of his most important contributions was to build the field service organization and business into one of the most respected and successful in the industry. For the past several years, Jack has managed our sales, services and international operations.

During his tenure at Digital, Jack has built an organization whose strength will be needed to meet the business challenges of the 1990s. His enthusiasm, business acumen, vision and management have played a major role in our success.

Jack's decision to leave Digital is a personal one.

Please join me in wishing Jack and his family continued health and success in the future. ●

## Production MTS/X.400 electronic mail service now available in U.S.

Production MTS/X.400 electronic mail is now available to Digital employees in the United States. This extends the reach of electronic mail beyond the boundaries of Digital's world-wide EASYnet to MCI Mail subscribers and beyond.

A connection, or gateway, between Digital's network and MCI's network allows access in the U.S. to the public electronic mail services provided by MCI, Telemail, and Compuserve. Similar mail gateways connect Digital's network to the networks of public carriers in other countries allowing communication to thousands of individuals and organizations.

MTS/X.400 service consists of multiple connections to Private Management Domains (PRMDs) — vendors, suppliers, and customers — and to

Administrative Management Domains (ADMDs), such as public carriers and postal telephone and telegraph authorities. The Digital PRMD is connected to over 50 PRMDs and five ADMDs.

X.400 refers to an international standard which is part of the Open Standard Interconnection (OSI) set of standards developed to allow the networks of different manufacturers to work together.

Before you can use this service, you must have a bonafide business need, obtain approval from your cost center manager, and then be registered in the common directory. Once registered, you have access to any other MTS/X.400 gateway connected to the Digital network.

Costs for this service are recovered by both a per-subscriber and a per-

message charge. In addition, some carriers allow you to send a message by fax or Telex for an extra fee.

For further information, contact your local MTS Support. You can also send inquiries to Robert Yost @VRO or Frank Kaminsky @OGO. ●

## Annual holiday crafts fair to be held in Marlboro

The third annual Employee Holiday Crafts Fair, sponsored by Marlboro Employee Services, will be held Dec. 7 in the MRO4 cafeteria from 5-8 p.m. Registration fee is \$5 for a six-foot table. All employees, their families and friends are invited to attend. For more information, contact Marilyn Perry, DTN 297-5208. ●



## Volunteers create Digital panel for AIDS Memorial Quilt

(Another group of quilters is using its talents to help people in need. Read all about it in the next issue of DTW.)

A group of volunteers from Digital has contributed a panel to the Names Project, the AIDS memorial quilt. Each panel in the quilt commemorates an individual or group of people who have died of AIDS.

The Digital panel — which lists no individual names — was created in memory of all members of the Digital family who have died or who will die of the disease.

According to Liz Augustine, a software engineer in Marlboro who organized Digital's panel effort, the idea for this project arose during AIDS Education Week last June. "I felt it was important to make a statement that people from Digital who have died are remembered," she said. Margaret Tarbet, an engineering manager in Littleton, designed the panel. And over a dozen people, some of whom had never sewn before, spent more than 500 hours constructing it.

Liz said, "We all came to the project for different personal reasons. Some of us are mourning a close friend who has died, or we have family or friends currently struggling with AIDS. Others are concerned because we know that many of our colleagues will be affected by this disease."

The six-foot by three-foot cloth panel uses applique sewing techniques to depict the Mill and the clock tower. The scene is late at night, when virtually everyone else has left for the evening. But one light shines; someone is



Erlene Belton (center), manager, Corporate Employee Relations, holds a photo of the Digital panel which is now part of the Names Project, the AIDS memorial quilt. With Erlene are Liz Augustine (left); Paul Ross, manager, AIDS Program Office; and (back row, left to right) Ann Marie Lupacchino, Ann Johnston, Marilyn Irlbacher, and Nancy Anderson.

there. The words on the panel read, "We remember our friends and colleagues who have died. And we miss them."

The panel was on display in Washington, D.C. in early October along with all the other panels that have been submitted so far. Because the quilt has over 9,000 panels, this will be the last time it is shown in its entirety. After this exhibit, the Digital panel will be returned to Boston and will be shown in selected cities around the United States.

Those who sewed the Digital panel include Nancy Anderson, Liz Augustine, Beth Benoit, Marge Davis Hallyburton, Catherine Iannuzzo, Marilyn Irlbacher, Ann Johnston, Dondi Larue, Ann Marie Lupacchino, Margaret Meehan, Margaret Tarbet, Jenny Turaj and Pat White. "Others donated money for materials," Liz added. "And Paul Ross (manager of the AIDS Program Office) lent support and encouragement. That meant a lot to us." ●

## Service recognition dinners to honor employees, guests

More than 4,000 employees and their guests are being honored at service recognition dinners this fall in Massachusetts and New Hampshire. The dinners recognize employees with 10

through 30 years of service to Digital.

Corporate Employee Services and Recreation administers the Service Recognition Award program, including the dinners. According to Manager Sheila Fantozzi, "Our goal is to provide personal and meaningful recognition to long-term employees. This year, we'll host 32 events, organized where possible by major business segments. We're pleased, too, with the number of senior managers who are participating in these

events. That makes it even more special."

Twelve dinners, each attracting 150-200 people, have been held so far. A gala banquet honoring 25- and 30-year employees will be held at the Vesper Country Club in Tyngsboro on Oct. 24.

For a complete listing of the Service Recognition Dinners, consult LIVE WIRE, Digital's electronic news system. ●

## American Red Cross accepting earthquake relief donations

The American Red Cross is accepting cash donations for the relief effort in Northern California in the wake of the Oct. 17 earthquake. The list of agencies will be updated as more information becomes available.

Send donations to: American Red Cross Disaster Relief, Office of Public Support, National Headquarters, 17th and D Streets, N.W., Washington, DC 20006.

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**Digital  
This Week**

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**DTN 251-1307**

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**DTN 251-1308**

"Digital This Week" is published every other week by the Corporate Employee Communication Department of Digital Equipment Corp. for its employees in the Greater Maynard Area.





# Digital This Week

Volume 16, Number 17

October 24, 1989

## **Achieves desktop-to-data-center compatibility**

### **Digital introduces VAX 9000 mainframe; multiplies power for commercial, technical tasks**

A new mainframe computer series that brings true mainframe speed and throughput to the popular VAX architecture was unveiled today by Digital. The VAX 9000 systems are the most powerful ever introduced by the company and are available in configurations capable of computing speeds from 30 to 117 times that of the VAX-11/780 computer.

The design and building of the VAX 9000 systems was truly cross-functional. The multichip packaging technology on which the VAX 9000 is based was developed at Digital facilities in Marlboro, Cupertino and Mountain View, Calif. (DTW, Oct 3). The mainframe itself was designed in Marlboro with input from CAD/CAM designers worldwide. The systems will be built in Burlington, Vt., and in Galway, Ireland with many other component plants contributing, including Augusta, Kanata, and Greenville.

"Now there is a series of systems that combines uncompromised mainframe performance with all the advantages of the mature, proven VAX architecture and its huge library of application software," said Bob Gloriosio, vice president, High Performance Systems. "VAX compatibility and multivendor connectivity with Network Application Support (NAS) can now reach from the desktop to

*continued on page 12*



*Tom Daley, a senior Customer Service support engineer, examines the Multi-Chip Unit (MCU) taken from the planar module of Digital's new VAX 9000 mainframe computer system. The MCU and the planar module represent breakthroughs in semiconductor packaging technology incorporated in the new computer.*

## **Digital reports revenue gains for first quarter of FY90**

Digital reports higher sales for its first quarter, which ended Sept. 30, 1989.

For the quarter, the company reported total operating revenues of \$3.1

billion, up six percent from the \$2.9 billion from the comparable quarter a year ago. Net income for the quarter was \$150,783,000, compared with last year's first quarter net income of

\$223,374,000. Quarterly earnings per share were at the upper end of investor expectations, \$1.20 versus \$1.71 last year.

"Digital's overseas business improved in the quarter, compared to that of a year ago, reflecting the strong investment environment in Western Europe and Japan," noted Ken Olsen, president. "Customer demand in the U.S. remains slow. Moreover, the continued strength of the dollar depresses overseas results when they are translated into U.S. currency.

"On the product front, our workstation volume grew in excess of 40% in terms of unit shipments and our personal computer integration business grew 60% over last year. Our MicroVAX 3100 system, announced in July, has met with exceptional customer demand," said Ken.

Digital systems, services, and

*continued on page 12*

## **U.S. salary delay to end in January**

Salary increases in the U.S. will be reinstated effective in January 1990. This means the delay will continue through Q2, and salary planning by managers will begin in November. Everyone's salary-increase date will be affected by the six-month delay.

We've made this decision in order to ensure that we reward those employees who are contributing to Digital's success. However, we need to aggressively manage toward a reduced cost structure. This includes continuing our efforts to eliminate unnecessary spending and limit external hiring to critical positions. In addition, we encourage everyone to participate in employee involvement programs that have been initiated to help us identify and implement innovative ways to reduce costs and improve quality.

When salary planning begins next month in the U.S., it will be designed to further encourage managers to reward for performance. More information on the planning process will be available through the Personnel organization shortly. ●



# NEWSLINE

FOR DIGITAL EMPLOYEES IN NEW ENGLAND

VOLUME 1 • ISSUE 1

## NEW METHODS USED TO BUILD LOW-PROFILE PCs

The announcement last month of the DECpc LP (low profile) family of personal computers marks a major departure for Digital from traditional manufacturing methods. More important, it represents a new business strategy that enables the company to build higher-quality PCs at the right price.

The new business strategy is modeled on franchising. Under this model, all Digital regions follow similar business practices. All aspects of product engineering, manufacturing, marketing and worldwide distribution are closely controlled in order to reduce costs.

The goal is to improve our competitiveness, market share and profitability, and to provide customers with the highest quality products at aggressive prices.

An additional benefit for customers is that Digital can provide a consistent product on a worldwide basis. This is an important purchasing criterion for many large companies, because they

invest heavily in computer-related training and need to install applications, networks and upgraded equipment uniformly throughout the world.

Says Jim Liu, vice president, Personal Computer Group, "We've realized substantial cost reductions throughout the entire business cycle. We used 'just in time' concepts to match inventory shipments to actual orders, so there is less inventory in the pipeline. Transportation costs are kept to a minimum because bulky items are shipped via

slow, inexpensive means. Only the 'mother boards' and the 'daughter boards' are flown to the regions via air freight. This allows the regions to react to changing local market conditions more quickly."



A SPRINGFIELD EMPLOYEE ASSEMBLES THE NEW DECPC LOW PROFILE PERSONAL COMPUTER. SPO IS THE ONLY REGIONAL ASSEMBLY SITE IN THE U.S. FOR THIS COMPUTER FAMILY.

## WELCOME TO NEWSLINE

This is the premiere edition of *Newsline*, a new publication for Digital employees in New England. *Newsline* is a consolidation of two Digital newsletters, *Digital This Week* and *New Hampshire View*.

Published every two weeks, the goal of *Newsline* is to deliver timely, consistent corporate and regional news, while containing costs.

Story ideas are welcome. Send them to Kate Nelson, editor for Massachusetts and southern New England or Judy Temple, editor for New Hampshire and northern New England.

Contact information for each editor and issue deadline dates will be listed in each issue in the Editor's Box on page two. ○

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## NEW METHODS USED TO BUILD LOW-PROFILE PC'S

CONTINUED FROM PAGE ONE

The strategy was successfully test-marketed earlier this year, when Digital won an order for 2,000 PCs from the Hong Kong stock exchange.

The ergonomically designed PCs house all processor-specific components on the daughter boards, and non-processor-specific components on the mother board. Eighty percent of the parts are common to all computers in the series.

All LP-series PC components are manufactured at the Taiwan plant, which is highly automated and able to produce high quality, highly reliable modules.

The modules are then shipped around the world for final assembly by each of the seven regional assembly sites — Springfield, Taiwan, Kanata, Tokyo, Sydney, Sao Paulo, and Ayr.

In the Springfield integration center, assembly and test teams are organized in groups of six to eight people, who work in flexible work cells. According to project manager Tom Lawnsby, "The advantage of the

flexible work cells is twofold. People can adapt to product changes and move the material quickly. You save a lot of money on start-up costs because there is no huge capital investment in conveyors or 'smart carts'."

Once the team receives the modules, "We can customize the size of the hard drive, the memory, put in the right floppies and add a math coprocessor if the customer asks," Tom says. "The box goes on the rack, we connect it to the network, test, scan for viruses, and load the desired software. It's a real beehive of activity in here." ○

## EDITORS Newsline

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DEADLINE FOR THE SEPT. 29  
ISSUE OF NEWSLINE IS SEPT. 17.

DEADLINE FOR THE OCT. 13 ISSUE  
IS OCT. 1.

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## DIGITAL IN THE PC MARKET

For more than four years, Digital has pursued a phased desktop strategy. This has helped the company become a major supplier of industry-standard PCs and software applications, and it lets us leverage important integration products such as PATHWORKS networking software in order to integrate very large, enterprise-wide networks of PCs and other desktop computers.

In the first phase of this desktop strategy, we formed strategic alliances with PC manufacturers such as Tandy and Olivetti. Under these agreements, these companies built PCs to Digital specifications.

Next, we began to design key parts of systems such as the DECpc 433 workstation and the DECpc

400ST series in cooperation with technology leaders like Intel. We then contracted with major PC systems suppliers, like Intel and Olivetti, to manufacture all or part of our PCs.

The DECpc LP family completes this evolution to a worldwide business strategy.

Digital has also entered into strategic alliances with leading software companies, like Microsoft, and has acquired 800-SOFTWARE, a major software reseller, to address customer needs on virtually every front.

An estimated 3.5 million PCs are being purchased each year in our installed base alone. The PC market attracts 50% of all the monies spent on information technology. ○





## PAT CATALDO TO MANAGE DIGITAL EQUIPMENT IRELAND

Pat Cataldo, vice president, Education and Consulting Services, has been appointed managing director of Digital Equipment Ireland Ltd. He will report to Geoff Shingles, Country Group manager, UK and Ireland.

In this role, Pat will be responsible for Digital's sales, service, and integration solutions business throughout Ireland. He will be based in Dublin.

Pat succeeds Derek MacHugh who assumed his new position as European Industry Director for Government in July. Derek will continue as a board member of Digital Equipment Ireland Ltd.

Pat joined Digital in 1974 and



PAT CATALDO

has held a series of positions with worldwide business operations responsibility. In one of his first assignments with the company, he was responsible for establishing and

expanding our training activities in Japan, Australia, Latin America, and the Middle East. He was the Corporate Sales Training Manager responsible for product, industry, selling skills, and management education prior to being named vice president of Educational Services in 1986.

Pat holds an honorary doctoral degree from Grand Valley State University in Michigan. He has been recognized for his achievements in training by the American Society of Training and Development. He is a past recipient of their "International Trainer of the Year" award and of their "Distinguished Contribution of Employer/Client" award. ○

## RANDY LEVINE, TONI LEE RUDNICKI NAMED IBU MANAGERS

Randy Levine and Toni Lee Rudnicki have been named IBU managers for the Environment IBU and the Oil and Gas IBU, and the Chemical IBU, respectively. They report



RANDY LEVINE

to Dave Copeland, vice president, Manufacturing Marketing Cluster.

Randy created the Environment IBU in 1990 to help customers deal with environmental issues. Last year, he formed the Oil and Gas Business Unit and began to establish Digital's worldwide strategy for that industry. He is

responsible for worldwide business results in the oil and gas industry and for the environmental solutions business across all industries.

Since joining Digital in 1982, Randy has managed groups including R&D, software engineering, product strategy, and marketing.

Toni Lee is responsible for Digital's business with the chemical industry worldwide. She has worked for Digital since 1981 in various engineering, marketing, and management positions.

In her previous position, Toni Lee was responsible for product marketing for the manufacturing cluster. She was instrumental in developing the NAS Environment for Manufacturing program which addressed enterprise integration issues for the manufacturing industries based upon standards. She is a member of the board of directors of EA Systems Inc. ○



TONI LEE RUDNICKI





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- SERVICES AND PERSONAL ENTERPRISES CANNOT BE ADVERTISED.
- SUBMIT ADS ON AN 8.5 x 11" SHEET OF PAPER AND INCLUDE THE FOLLOWING: FULL NAME, STATE, MAILSTOP, 7-DIGIT DTN (ONLY RETIREES MAY USE HOME PHONE NUMBER), CATEGORY, ITEM, BRIEF DESCRIPTION AND PRICE.

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## APPLIANCES

REFRIGERATOR, 18 cu ft, wht, ice mkr, usd 3yr exc cond, \$250, Mary, 264-2331 (NH)

## CARS

'91 TOYOTA MR2, blk, 5spd ac, cc, pwr opts, a/f/c/cd, alarm, \$13.5K, Ted, 264-6053 (NH)

'89 CHEVY CAVALIER Z24, v6, 5spd, a/f/c, pwr, warr, 60k mi, \$5995K/bo, Nancy, 274-6958 (MA)

'88 DODGE RAM 50 PICKUP, long bed, 24k mi, exc cond, \$5.5K, Susan, 223-5931 (MA)

'88 SUBURU DL WGN, 5spd, am/fm, ac, 77k mi, \$3.8K, Andrea, 223-8922 (MA)

'87 PLYMOUTH RELIANT, 4cyl, auto, 4dr, ac, 72k mi, \$2.8/bo, James, 264-4173 (NH)

'87 TOYOTA COROLLA SR5, gray, 5spd, ac, 67k mi, a/f/c, \$4.5K, Stephanie, 237-3246 (NH)

'86 FORD ESCORT, at, ps, pb, 4dr hback, 86k mi, mech exc, \$1.7K/bo, Jon, 381-2184 (NH)

'86 PONTIAC 6000 STE, pwr win/seats, ac, dig instr, v6 w/EFI, 122kmi, David, 264-9424 (NH)

'85 CHEVY CORVETTE, no wntrs/rain, 15k orig mi, 4+3 trans, opts, \$17K, Tom, 264-6080 (NH)

'85 AMC JEEP CJ7, nds cosmetics, 50k mi, nw cltch & fr.brakes, \$3.2K, Maryellen, 381-2919 (NH)

## CARS

'84 DODGE ARIES, auto, 4dr, runs well, 99kk mi, \$300, David, 228-5284 (MA)

'83 AUDI 4000E, 4dr, 5spd, ac, snrf, 125k mi, 1 ownr, clean, \$1K/bo, Mike, 225-6399, (MA)

'80 TRIUMPH TR7, convert, 40k mi, a/f/c, ac, 1 ownr, nw tires, \$6K, Barb, 381-0392 (NH)

'55 CHEVY NOMAD, 2dr stat.wgn, v8 std w/od, ac, ps, pb, \$19K, Dick, 244-7183 (MA)

## FURNITURE

DINING/KITCHEN dk pine dbl pedestal table, 2 benches, 2 endchairs, \$275, Dawn, 223-4097 (MA)

DINING TABLE/CHAIRS, pine trestle tbl and 6 Windsor chairs, \$175/bo, Anne, 264-3529 (NH)

TABLE, butcher block, 42" oct, chrome base w/ 4 chrome sled chairs, \$125, Bob, 223-7639 (MA)

## MISCELLANEOUS

BABY FURNITURE and accessories, used but in grt condition, BO, Karen, 351-4058 (MA)

BICYCLE, girls 16" Huffy Pink Lightning w/trng wheels, \$25, KV, 381-0352 (NH)

BICYCLE, womens Terry Dispatch, 28.5" to cross tube, exc cond, \$275, Bill, 381-2913 (NH)

BICYCLE, Raleigh Technium 480, mens, 12spd, toe clips, exc cond, \$185, Bob, 297-5868 (MA)

BOOKS, 3 college prep - achievement, SAT, prep engl achiev, \$15, \$6/ea, Preeti, 264-4060 (NH)

COCKTAIL RING, 5ct cluster, 14k, \$500, wedd band free w/diam purch, Marianne, 225-4847 (MA)

DINGHY, class 80 3 person inflat. w/ 2.5 hp Evinrude, \$799, Warren, 267-2221 (NH)

DRAPES, sheer embroid. off wht, exc cond, 84" x trpl width, \$100, Elizabeth, 226-7349 (MA)

HEALTH MEMBERSHIPS (2) Holiday Bally Gold, no restrict, all loca, \$600/ea, Al, 226-6042 (MA)

OSCILLOSCOPE, heathkit, 5mhz, \$25, David, 297-9162 (MA)

SEWING MACHINE, Brother, #VX808, 10 stitch, 1.5 yrs old, swing arm, \$75, KV, 381-0352 (NH)

SKIS, Olin Mark III, 175 cm, Salomon 626 bindings, \$80/bo, Sandra, 264-1895 (NH)

STEREO SPEAKERS, 60 watt, 2 yrs old, Realistic, \$25, Claire, 223-9022 (MA)

TIRES, 2 Firestone Supreme, 205/70 x 14, \$40; 2 Gatorbacks for Vette, \$100, Tom, 264-6080 (NH)

WINDOWS, Anderson wd casement w/ insul.glass, rough opening szs, Bettianne, 229-7894 (MA)

## REAL ESTATE

BOXBORO, 2br condo, 1st fl w/sliders to yrd, ownr fin avail, \$69K, Linda, 296-4687 (MA)

LEOMINSTER, twnhse condo, end unit w/frplc, 2br, 1.5ba, appl, \$79K, Sandra, 223-6735 (MA)

MANSFIELD, lg sunny condo, 2br, wlk to train, pool, tennis, \$66.9K, Susie, 297-7051 (MA)

MAINE, lkfrnt cottg, 30mi so. of Bangor, yr rnd, fully furn, \$65K, Claire, 226-5869 (MA)

SHREWSBURY, NY, col 4br, 2.5ba, hdwd +carpet, lg kitch, \$228K, Lorie, 297-5218 (MA)

SOUTHBORO, 7 res. bldg lots, from 2-16 acres, ownrs assoc, hi \$100's+ , Lyn, 297-4945 (MA)

WORCESTER, 2br condo, w/w, ac, w/d, dshwr, sec buzz, off st pkg, \$59.9K, Peter, 237-2003 (MA)

YORK, ME, bchfrnt studio condo, comp furn, grt rental, \$65.9K, Tom, 275-3858 (MA)

## RECREATIONAL VEHICLES

SNOWMOBILE, '88 Artic Cat - Jag 440, 500 mi, many xtras, \$2150, Steve, 264-3912 (NH)

## RENTALS

HUDSON, 2br twnhse, 1.5ba, gas/fhw, ac, 2car garg, 2 decks, \$950+, Laura, 296-5473 (MA)

LOWELL, twnhse, 2lg br, 1.5ba, garg, ac, laun, low util, \$650, Larry, 296-5082 (MA)

## ROOMMATES

MAYNARD, m/f to shr 7rm hse, minutes from MSO, PKO, MLO, \$400/mo, Steve, 234-5246 (MA)

MERRIMACK, NH, m/f nsmkr to shr twnhse, lg br, storage, pool, \$325+1/2, Eileen, 381-2764 (NH)

## SEASONAL RENTALS

CARIBBEAN, St. Lucia, ocn view, 1 or 2br condo, maid svc, from \$375/wk, Alex (508)756-0448 MA

DEER ISLE, ME, furn wtrfrnt cottg, secl cove, av thru Oct, slps 4, \$340/wk, Kevin, 244-7219 MA

EIDELWEISS, Nr Conway, chalet nr lake/bch, slps 8, equipd, \$400/wk, Dave, 297-3560 (MA)

LOON MTN, 3br, 2br or both as 1, fully equipd frplc, tv, jacz, wk/wkend, Ken, 508-928-4439 MA

MARTHA'S VINEYARD, 3br, 2ba, frplc, skylit, bikes ferry tix, bch, 8/30-9/6, Elaine, 223-1356 MA

NO. CONWAY, 3br chalet, slps 8, prv bch on Saco, hike, canoe, mtn activ, Diane, 264-4304 (NH)

NO. CONWAY, hse for foliage seas, slps 7, appl, mtn activ, \$175/wkend, Cornel, 226-5501 (MA)

QUECHEE, VT, 2br, 2ba condo, equipt, frplc, tv, nr bch, golf, tenn, \$600/wk, Dave, 285-2342 (MA)





## ROUGH ROAD AHEAD FOR EVERETT TURNPIKE USERS

For the past few months, New Hampshire employees who drive the Everett Turnpike near Exit 1 have been slowed by the first phase of a \$160 million turnpike reconstruction project. The project calls for widening the turnpike from two to three lanes on each side from the Massachusetts/New Hampshire state line to Exit 7.

Work has been planned in phases to cause the least amount of inconvenience and delay for turnpike users.

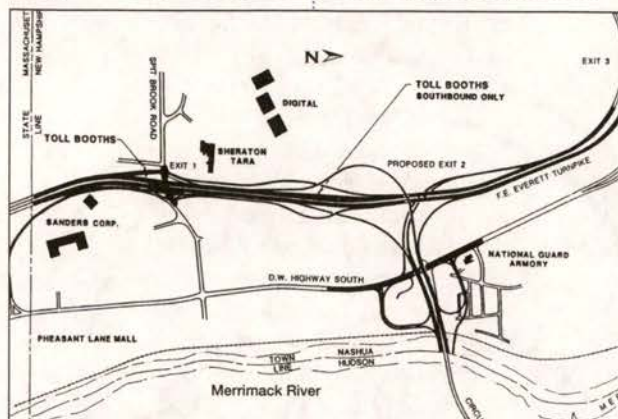
Phase I involves widening the turnpike between the state line and the new Exit 2 interchange near the rest area. Simultaneously, an additional travel lane and auxiliary lanes required for new interchanges will be constructed.

Phase II calls for the completion of the Exit 2 interchange. This interchange will also serve as a link for the planned Circumferential Highway, which will run through Hudson and connect with the Turnpike in north Nashua or south Merrimack.

Upgrading the Exit 1 interchange and widening Spit Brook Road under the highway to seven lanes to permit left turn stacking and dual left turns is included in Phase III.

A series of bridges will be constructed to allow

contractors to haul materials over the bridges instead of impeding traffic on local roads. When construction is complete, these bridges will become part of the permanent highway configuration.



THIS MAP OF THE AREA AROUND EXIT 1 ON THE EVERETT TURNPIKE SHOWS SOME OF THE WORK THAT'S PLANNED

take place between 9 a.m. and 3 p.m. On occasion, blasting or material deliveries may necessitate road or ramp closing at other times.

Motorists can find out what's happening by tuning in to two special AM radio stations installed by the New Hampshire Department of Transportation: 630, aimed at northbound motorists, and 1610, for southbound travelers. ○

A toll plaza will be installed between Exits 1 and 2 to collect fares on the southbound lanes only. Before the toll plaza, an off-ramp to Spit Brook Road will be constructed. Further up the turnpike, an on-ramp at Exit 4 will be added, a full cloverleaf at Exit 5 will be built, and bridges and ramps at Exits 6 and 7 will be enlarged.

To keep delays to a minimum, the state plans to maintain two high speed lanes both northbound and southbound. Work that causes major traffic interruptions will

## LIFESTYLE CONNECTION PROGRAM TO LOOK AT STAGES OF HUMAN DEVELOPMENT

Over the next programming year, from September 1992 to June 1993, The Lifestyle Connection will focus on the stages of human development. Each month in a series of educational programs issues related to the health and wellness of the individual at particular stages of development will be examined. In addition to the programs listed below, Lifestyle Connection, in conjunction with the March of Dimes, will sponsor a year-long seminar series entitled "Babies and You", dealing with pregnancy issues. The March of Dimes is a nonprofit organization dedicated to promoting healthy pregnancies and preventing birth defects.

To register for the following seminars contact your local Health Services, EAP, or fitness/wellness center.

September *Prenatal*  
October *Infancy*  
November *Early Childhood/Play Age*  
December *School Age*

January	<i>Adolescence</i>
February	<i>Early Adult Transitions</i>
March	<i>Catch-30</i>
April	<i>Mid-life Transitions</i>
May	<i>The Free style 50's</i>
June	<i>The Vintage Years</i>

**SEPTEMBER - PRENATAL**  
**(...AND THEN THERE WERE TWO)**  
During pregnancy, exercise is just as important to physical and emotional well-being as it is any other time. Nancy Campbell and Carol Coleman, from the Nashua YWCA, will show how to exercise safely during and after pregnancy. Both are certified aerobic instructors who have been teaching for a number of years. Women who attend will receive one free visit to a "Mother To Be" or "Post Partum" class at the Nashua YMCA.

**DATES AND LOCATIONS:**  
Sept. 17, noon-1 p.m.  
Keene Room (MKO1-2/J22)  
Sept. 23, noon-1 p.m.  
Location NIO (to be announced)

### "BABIES AND YOU: EATING FOR TWO"

These seminars on prenatal nutrition, conducted by registered dietitians, are the first in a series of programs provided through the New Hampshire Chapter of the March of Dimes.

**DATES AND LOCATIONS:**  
Sept. 24, noon-1 p.m.  
Customer Dining Room (MKO1-2/J22)  
Sept. 30, noon-1 p.m.  
Bush Conference Room  
(ZKO2-1/N-C) ○

### REDUCE RISK OF HEART DISEASE WITH HEART HEALTHY MEALS

In conjunction with the American Heart Association, both MKO cafeterias will sponsor "Heart Healthy Meals" from September 21-25. Look for the "Clean Dozen" lunchtime choices. ○





## MAET STARTS Q2 WITH THREE TECHNOLOGY COURSES

**"Speech Recognition Technology and Applications"** (Course No. 32CNT-09). Oct. 13, 8:30 a.m.-5 p.m., Gen. Doriot Auditorium, MLO4-5. Course fee \$350. Project Leader: Sue-Lane Garrett, LEDDEV::GARRETT.

Speech recognition allows products and software to listen. This course describes technical methods in speech recognition: how the technology works, strengths and weaknesses of different approaches, and research trends. It provides guidelines for typical applications and market opportunities, features required for a successful product, and pitfalls to avoid.

This course is intended for anyone with a technical, management or marketing interest in the feasibility of incorporating speech recognition in a system or product. For those already involved in speech recognition, the course provides an overview of current issues and trends in research and markets. An engineering or programming background is useful but not required.

**"Fundamentals of Porting Applications to DEC OSF/1,"** Oct. 7 (Course No. 32CTS-01) and Oct. 8 (-02), 8:30 a.m.-5 p.m., Sheridan/Hinchcliffe Conference Room, MLO5-4. Cost: \$325. Contacts: Project Leader Linda J. DiSalvo, (LEDDEV::DISALVO) and Project Leader Nick Ugrinow (LEDDEV::UGRINOW).

Kicks off MAET's Q2 "State of the Art" course series. MAET worked in conjunction with the Advanced OSF Software Group, ULTRIX Engineering Group, and Services Development and Training

to develop this one-day, high-level technical training. The course outlines the current BL9 features and functionality of the DEC OSF/1 operating system on the Alpha platform.

Designed for porting engineers, software developers and associated support and sales persons who want an introduction to the DEC OSF/1 programming environment and exposure to porting issues for DEC OSF/1. Familiarity with application development in C/UNIX environments required.

**"OSF DCE System Administration,"** Oct. 19-23, 8:30 a.m.-5 p.m., William Knight Lab, MLO4-5. Contact: Project Leader Nick Ugrinow, LEDDEV::UGRINOW

OSF has chosen MAET to host the pilot delivery of this course.

Registration is required and seating is limited.

This course is highly recommended for software developers and system/network administrators

who are responsible for installing new DCE cells, maintaining DCE cells, and integrating DCE into existing networks.

Requirements are experience with UNIX system administration or network administration and working knowledge of networking concepts and implementation, plus "DCE Features and Functionality" course or equivalent understanding of DCE.

On-line registration is available for all courses. Course fees will be charged to your cost center.

If you must withdraw from the course, please do so no later than 10 working days before the class start date to avoid being charged the full course fee.

Students who encounter registration problems should contact Maureen Gobel, MAET registrar, at LEDDEV::GOBIEL. ○

## PME SETS FALL COURSE LINEUP

Program Management Education (PME) has announced its fall/winter course schedule. Sponsored by Manufacturing Technology Training & Development, PME offers courses in areas such as finance, group problem-solving and decision-making, and change planning and management.

The curriculum is designed for program and project managers and key members of cross-

functional, cross-organizational teams. The program is designed to be linked to the participant's job through planning, application of skills learned, and follow-up consulting.

Applications are being accepted now. For more information, contact Penny McIntyre (DRUID::MCINTYRE), DTN 232-2236. ○





## APPLICATIONS BEING ACCEPTED FOR ADVANCED STUDIES PROGRAM

Digital dependents living and attending school in Massachusetts are eligible to receive scholarships for the Massachusetts Advanced Studies Program (MASP), a residential program held at Milton Academy in Milton, Mass.

MASP is open to students from any public or parochial high school in the Commonwealth. Nominees must currently be juniors and must

show strong evidence of academic achievement or potential.

Applicants must first be nominated by their school or a designated educational organization. Interested students should consult their guidance counselors to learn about nominating procedures, which will vary from school to school.

Sponsorship includes payment of

tuition, room and board for the six-week program. Lab and book fees and incidental expenses are the responsibility of the student.

The dependents of permanent, regular employees will be identified according to information requested by MASP.

For additional information, contact the student's school guidance department. ○

## METPAY PROGRAM EXPANDS

Digital has signed a new agreement with Metropolitan Property and Casualty Insurance Co. (Metpay) and its affiliates to extend insurance through the Metpay program to virtually all Digital employees.

Subject to state availability and applicable state laws, Metpay will now write a full range of auto, home, and other types of personal insurance to employees in every state except Alaska, Hawaii and Washington, D.C.\* Under certain circumstances, you may be excluded (i.e., failure to pay premiums, failure to maintain a valid driver's license, or an auto or boat DWI conviction).

Through Metpay, employees insure more than 38,000 personally

owned autos and 18,000 homes at special group rates. Premiums can be paid through payroll deductions. Depending on local laws, employees in some states are also eligible to receive an annual dividend from Metpay.

For more information about the program, see your on-site Metpay representative or call 1-800-GET-MET (1-800-438-6381). The Digital Metpay liaison can be reached at DTN 223-8920 or (508) 493-8920.

Metropolitan has made special arrangements for coverage for New Jersey residents with the Hanover Insurance Companies. For details, call (1-800) 356-9243. ○

## OPEN HOUSE TO MARK HIGH HOLY DAYS

The Jewish Constituency Group in Littleton will sponsor an educational open house to mark the upcoming Jewish High Holy Days, Rosh Hashanah and Yom Kippur — New Year (5753) and the Day of Atonement.

Stories and music, traditional holiday food, and books, pictures,

and holiday ritual items will be on hand. Everyone is welcome.

The open house will be held Sept. 22 from 11 a.m.-1 p.m. in the Nathaniel Hawthorne Conference Room, LKG1-2/L8. For more information, contact Janet Cardillo, DTN 276-9615 (SONATA::CARDILLO). ○

## RETIREE PROGRAM OFFICE CREATED

(REPRINTED FROM LIVE WIRE)

The Employee Relations organization has created a new Retiree Relations Program Office to provide Digital retirees with a link to the company through support and assistance and ongoing communications. The office is located at MSO2 in Maynard, Mass.

A leaflet describing the new program office in detail will be sent out in the fall to all Digital retirees.

Some of the features of the newly launched office are:

- a toll-free phone number that will direct retiree inquiries to appropriate organizations (i.e. questions on pension, retiree medical benefits, Digital stock and SAVE plan etc.);
- and ongoing communications on Digital benefits, services, and employee activities;
- information about a Digital Retirees Association, which is in the process of being formed. ○





## HUDSON CALIBRATION GROUP LEARNS TO 'SWIM'

The calibration laboratory in Hudson discovered back in 1989 what many Digital departments had already learned: sink or swim.

Swimming, in this case, meant becoming more competitive with the third-party calibration suppliers in the New England area.

Calibration is the process in which test and measurement equipment is compared against nationally traceable standards to determine its accuracy. The Hudson laboratory, one of the most diversified in New England, calibrates and repairs test equipment used by engineering and manufacturing groups in Semiconductor Operations.

Two years ago, laboratory manager Jim Moore began comparing the group's services, particularly turn-around time, cost and quality, to those of local vendors. He learned that best-in-class commercial suppliers often provided faster, cheaper services when compared to the Hudson calibration lab.

Although it was adequate for Semiconductor Operations' needs, the lab was losing customers to these external businesses. Something had to change.

Jim, along with the other laboratory members, began an aggressive project to become more competitive. Task teams re-examined all phases of laboratory operation: customer issues and relations, technical capabilities, documentation, and shipping. Brainstorming and implementing

process improvements became a way of life.

Innovative ideas have grown in the laboratory. One such project is known as Q Calibration, or Quickly with Quality. "There are some pieces of equipment which are rather complex," says Les Fister,



TECHNICIAN MARK REAGAN JOTS A FEW NOTES WHILE CALIBRATING A PIECE OF EQUIPMENT. AFTER COMPARING ITSELF TO BEST-IN-CLASS OPERATIONS ELSEWHERE, THE HUDSON LAB INITIATED A NUMBER OF PRODUCTIVITY IMPROVEMENTS.

calibration technician. "We found that these items, which require a great deal of time to calibrate, were holding up more basic equipment." The solution was to separate the routine calibrations into a special queue (pun intended) system. "Cycle time in the queue has been less than one week," Les continues, "with no degradation to the complex equipment."

Other forces have also produced change in the Hudson laboratory.

Calibration is an essential element in the success of all quality programs, including ISO 9000. It was an important factor in Hudson's earning ISO 9002

certification on its first attempt. The independent auditors who conducted the certification and inspection program praised the lab for its meticulous documentation and its quality systems.

The bottom line is impressive. In FY '89, the group completed 1,876 calibrations with an average cycle time of nine weeks per unit. In FY '92, with virtually the same resources, the team completed 5,131 calibrations in an average of 2.5 weeks.

Many of the latest improvements are less than six months old. The team expects that FY '93 will show even more improvement in productivity while slicing cycle time in half.

The laboratory is now pursuing business outside of its facility. "The technicians are here, the

equipment is here, and the funds have been approved," explains Jim. "If we can take on business beyond our organization, we reduce our costs without increasing spending. That would be a triple win: we contribute to Digital's competitive edge, SCO gains improvements in their services, and other organizations can eliminate costly contracts with third parties."

Hudson Calibration invites inquiries and visits. For more information, call DTN 225-6061, or send mail to DEMING:: CALIBRATION. ○



# NEWSLINE

FOR DIGITAL EMPLOYEES IN NEW ENGLAND

VOLUME 1 • ISSUE 3

## KEN OLSEN FETED AT FAREWELL RECEPTION

Several hundred employees thronged the Mill cafeteria on Sept. 29 to bid farewell to outgoing President Ken Olsen at a reception organized by Mill Site Personnel.

After opening remarks by Wayne Pomiansky, Mill Site Personnel manager, Theresa Buckley, Personnel manager for Strategic Resources, read from a letter she had written to Ken upon learning of his retirement.

Ken twirled a small bouquet of flowers between his fingers as he listened to Theresa read.

"During my 24 years here at Digital, I have grown not only to love my company, but there is a special affection reserved for you as president of this great and wonderful company that you envisioned and built," Theresa said. "You shaped and molded an army of men and women whose intellectual horizons have achieved great dimensions and who have and will continue to contribute to Digital and the world at large. I have been privileged to work for you, Ken Olsen."

Then Ken, to more applause, took the podium and reflected on the company that started in 1957 with

three employees and some lawn furniture.

"In those days, you could open the windows in the Mill," he said, "and very often in the morning we would find pigeons in the office. So we went to the hardware store and bought some stuff that was guaranteed to keep pigeons off the window sill. It was white, sticky stuff and we spread it all over the windows. The next morning we walked in and found the pigeons with white goo all over their beaks."

"There was also a rolltop desk in Harlan Anderson's office that no one could use because you couldn't fit your legs under it. When we finally decided to throw it out, we discovered that the top of the thing had been rotated 180 degrees, and that was why no one

could use it.

"But it was fun. We always had people who were dedicated to quality, people who wanted to be — who were — the best."

Also honored at the reception was Ann Jenkins, Ken's secretary of 15 years, who will continue to work for him in his new office in Stow. ○



KEN REMINISCES ABOUT HIS YEARS AT DIGITAL AT A FAREWELL RECEPTION AT THE MILL. SEVERAL HUNDRED EMPLOYEES JAMMED THE CAFETERIA TO WISH KEN GOOD LUCK.

## NEWSLINE TO MERGE WITH 'DIGITAL TODAY'

With this issue, *Newsline* ceases publication. Effective Oct. 15, elements of *Newsline* will be incorporated with "digital today." The expanded publication will continue to be distributed weekly to all U.S. employees.

The merged publication "is right in line with Digital's strategy to contain costs while maintaining our commitment to open communication with employees," says Charlie Holleran, vice president, Corporate Communications.

"'digital today' has a fine reputation with the folks in the field," Charlie continues. "The expanded publication will give all employees in the U.S. important companywide news simultaneously."

"Employees can continue to access LIVE WIRE for the latest company news," adds Allan Csiky, manager, Corporate Employee Communication.

"However, many of the features that people are used to seeing in *Newsline*, like course schedules, will move to VTX infobases, and others, like Marketplace, are going away altogether."

"digital today" welcomes article ideas and submissions. Send them to SONATA::NEWS or NEWS@OGO. ○

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## DELTA PROGRAM RECOGNIZES TWO EMPLOYEES

Two New England employees, Laurie Orlov and John Baird, have been recognized this fall for their exceptional involvement activities and the results they've achieved.

Laurie, manager of Direct Marketing IM&T (Information Management & Technology) in Merrimack, N.H., was honored at the Desktop Team meeting, led by Jay Atlas, vice president of U.S. Channels Sales. At the meeting Jay noted Laurie's excellent performance and innovative management, which includes the creation of self-directed work teams.

"Because of Laurie's leadership," said Jay, "more projects are getting completed in less time and they are of higher quality than ever before. Employees in these teams will agree that the work she does is of the highest caliber."

John, a technical analyst with Advanced Services Engineering in Stow, Mass., will be recognized by John Caulfield, manager for Corporate Waste Management, at an event later this fall.

"John Baird," said John Caulfield, "is an excellent example of 'propose and do.'"

"On his own time, he has directed several very successful redirection programs at his site. He has reclaimed, recycled, and donated several thousand binders and audiotapes. Because he shares his ideas and processes, this work is being duplicated throughout Greater Maynard, and at several U.S. and Canadian sites. These efforts save money and waste and are enhancing Digital's reputation as a good corporate citizen."

Laurie and John were among two managers, two individual contributors, a team of two, and a team of eight who were identified by DELTA and the Corporate Quality group this summer for exceptional employee involvement efforts. All were to be congratulated at the June State of the Company event, which was cancelled. They are now being feted at functional events occurring during the remainder of the year.

The other people recognized include:

**Wayne Records**, Customer Support Center (CSC) manager, Atlanta;

**Joe O'Brien**, Digital Services engineer, San Bernardino, California.

**Rick Retterer and John Kendrix**, call screening specialists, Digital Services, Atlanta CSC,

The Ayr, Scotland, Systems Manufacturing group team of **Stuart Ross, Billy Price, Tom Wason, Tom Hearton, Charlie Barnes, Steve Joyce, Steve Connelly, and Dave Ferguson**.



LAURIE ORLOV HANGS UP HER DELTA RECOGNITION PLAQUE ON HER OFFICE WALL...



...WHILE JOHN BAIRD SHOWS SOME OF THE THINGS HE'S RECYCLED.

"Recognition of the exemplary efforts of these people by their functional groups is a significant way to support employee involvement," says Jim Pitts, DELTA program leader. "This acknowledgment extends the recognition that we began for exceptional employees with State of the Company last December. To show appreciation for people's extraordinary dedication is more necessary than ever." ○

## EDITORS NEWSLINE

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## RICH KITTLE TAPPED TO HEAD UP OPEN SYSTEMS MARKETING OFFICE

To further reinforce the OpenVMS open systems message both internally and externally, an Open Systems Marketing Office (OSMO), managed by Rich Kittle, has been created to support Alpha and VAX Systems (AVS).

As an integral part of the OpenVMS movement since its earliest days, Rich was instrumental in developing the "open" message, building the strategy to get it to the market, and gaining acceptance for OpenVMS across Digital and in the marketplace. Rich is managing this office from within the AVS Software Marketing group and reports to Phil Auberg, AVS Software Marketing manager.

The OSMO is responsible for positioning all AVS products for success in the open systems market, for advancing open systems issues for AVS across the industry, and for ensuring that open systems market requirements are incorporated into AVS product development.

"OSMO allows us to continue our aggressive efforts to keep the industry analyst and press communities abreast of OpenVMS' advances in open systems," says Rich. "Additionally, it allows us to

communicate to several levels inside of Digital." Rich will represent AVS on the Corporate Open Systems Marketing Team and will serve as alternate at the X/Open Marketing Managers Committee.

OSMO plans to work extensively in not only the United States and GIA, but with the European market where X/Open has heavy influence and open systems are a requirement of most information technology businesses.

Rich is currently working with Steve Gonzalez, a Digital UNIX partner, to develop a unified open systems message across product lines. The final outcome of their efforts will be a presentation within which each open systems product group can then position their products.

In the past, Rich has been instrumental in influencing OpenVMS engineering direction in open systems. He has worked with a team of OpenVMS Product Management and Engineering on the product delivery of POSIX V1.0 in February 1992. OpenVMS also

achieved XPG3 BASE Branding in June 1992, a certification by X/Open that an operating system is, in fact, open. ○



RICH KITTLE

## DIGITAL RECEIVES 'EMPLOYER OF THE YEAR' AWARD

The Greater Worcester Committee for Employment of Individuals with Disabilities has presented Digital's Assistive Technology Access Center (ATAC) with the Employer of the Year 1992 Large Business award "for continued efforts and commitment to enhance the quality of life for people with disabilities."

Digital employee Cynthia Lapierre also received the Carla Harling Cody Award 1992 for her continued commitment to people with disabilities.

Timothy J. Cooney, Jr., vice chairman of the Worcester City Council, presented the awards on behalf of Worcester Mayor Jordan Levy. Mr. Cooney extended "sincerest congratulations" to the ATAC from the Massachusetts House of Representatives.

Janet Gorman, ATAC manager, accepted the award and observed that many people in the room had taken advantage of the ATAC

as a resource, and spread awareness of its products and technology to others. She said she was inspired to see people who have taken

advantage of the technology and are "emerging as individuals who demonstrate their independence and productivity."

Richard Douglas, executive director of the President's Committee on the Employment of People with Disabilities, gave a riveting keynote speech on changing able-bodied people's awareness of those with disabilities. He noted it is important to look beyond the disability. He reminded the audience of more than 200 that "if we live long enough, each and every one of us will have a disability of some sort."

Digital has an ongoing commitment to enhancing the quality of life for people with disabilities. Over \$10 million in cash and equipment grants worldwide have been invested for a variety of initiatives that enhance independent living for people with disabilities. ○



DIGITAL EMPLOYEE CINDY LAPIERRE WON THE CARLA HARLING CODY AWARD FROM THE GREATER WORCESTER COMMITTEE FOR EMPLOYMENT OF INDIVIDUALS WITH DISABILITIES FOR HER "CONTINUED COMMITMENT TO PEOPLE WITH DISABILITIES." THE COMMITTEE ALSO HONORED DIGITAL AS LARGE BUSINESS EMPLOYER OF THE YEAR.





WITH THE MERGER OF  
NEWSLINE AND DIGITAL  
TODAY ON OCT. 15  
(SEE ARTICLE ON PAGE 1),  
"THE MARKETPLACE"  
WILL NO LONGER BE  
PROVIDED.

BECAUSE OF THE  
VOLUME OF ADS  
RECEIVED, WE CANNOT  
RETURN ADS THAT  
HAVE NOT BEEN  
PRINTED. NEWSLINE  
REGRETS ANY  
INCONVENIENCE.

## CARS

- '90 MAZDA 323 COUPE, 5spd, ac, a/f/c, 58k mi, pwr strg, gd cond, \$6K, Denise, 381-2503 (NH)
- '89 CHEVY CUTLASS CALAIS, red, 4dr, auto, ac, exc cond, 45kmi, \$9.5K, Donna, 223-7318 (MA)
- '89 DODGE DYNASTY LE, red, mint cond, 55k mi, \$715K, Carol, 223-5886 (MA)
- '89 DODGE SHADOW, 4dr, a/f/c, ac, auto, 15k mi, \$6.5K, Tom, 223-7604 (MA)
- '87 PONTIAC TRANS AM, 5spd, ttop, loaded, exc cond, must sell, \$6.5K/bo, Terry, 226-5727 (MA)
- '86 TOYOTA CAMRY LE, l/b, auto, ps, pb, ac, vgc, 10wnr, 107kmi, \$3.3K, Brad, 226-7043 (MA)
- '85 BUICK CENTURY LTD, grey, 4dr, 3.8 ltr, auto, ac, 115kmi, \$2K, Bob, 297-2502 (MA)
- '85 CAPRICE WGN, 9 pass, ac, new brakes, no rust, 85kmi, Bill, 244-6362 (MA)

## FURNITURE

- DEN FURNITURE, grn plaid col-style sofa & chair, gd cond, \$150/bo, Jim, 226-5368 (MA)
- DINING SET, cont woodn tbl (66x40) & 4 blue cush. chairs, \$350/bo, Gopal, 264-4573 (NH)

## FURNITURE

DINING TABLE, round dk brn finish, 4 chairs, 1 leaf, gd cond, \$50, Paul, 226-6003 (MA)

OAK KITCHEN TABLE, 18" round, 1 year old, \$150, Debbie, 381-0382 (NH)

## MISCELLANEOUS

BABY CARRIAGES, 2 blue & grey, \$85; WOOD STOVES, free stnding \$350, Debbie, 244-7378 (MA)

GOLF CLUBS, Spalding Exact. Lefty, incl bag & putter, \$200, Alfred, 293-5087 (MA)

PATIO TABLE and 4 chairs, chairs sep. \$50, or set for \$100, Anne, 264-3529 (MA)

PLAYER PIANO, autopiano, sounds gd, rolls & bench incl, \$850, Jack, 296-5192 (MA)

RING, 1/2 ct cluster w/14kt gold band, wedd. band free w/purch, \$500, Marianne, 225-4847

ROWING MACHINE, Precor 612, adj resist, exc cond, \$150/bo, Dolores, 297-2477 (MA)

ROWING MACHINE, Westbend 5100, \$100; OMNI 2000 Stat Bike, \$120, Lin, 297-9789 (MA)

TIRES, Michilin 15" w/rims, 50mi exc cond for Bronco II, usd 5k, \$200, Dani, 244-7016 (MA)

WOOD STOVE, Thermo Blaze w/slide metal & heat shield, glass front, \$200, Rita, 274-6234 (MA)

ZOOM LENSE 28-80mm for Canon AE-1 camera, inc case & skylit filter, \$80/bo, Michael, 223-3988

## PETS

AKITA PUPS, 2 females, brinole, blk mask, 11wks, price reduced, Lea, 237-6924 (MA)

FREE KITTENS, 4, born 7/10, blk, shrt hair, hse broke & child. exposure, Sharon, 223-8264 (MA)

## REAL ESTATE

CAMBRIDGE, 2br condo, renov, yrd, pkg, betw MIT & Harv & BU, \$129.9, Darryl, 226-7302

HUDSON, MA 7rm gambrel, 3br, 1.5ba, porch, 1car det, w/d, pool, \$142.9K, Julie, 228-5258

HUDSON, MA condo top fl, cmr, 2br, 2ba, strge ac, all electrc, \$74K/bo, Jack, 226-5665

HYANNIS, 3br, 1ba ranch w/att garg, yr rnd hse, nr bch, \$117K, Brian, 237-6406

LEXINGTON, 4br 4yr new colon. 2car garg, cath ceil, stunning, \$379K, Phyllis, 221-5252

METHUEN, quiet, 2br, 2ba grdn-style condo, ww gas ht, ac, appl kitch, w/d, Dawn, 247-3052

NEW BOSTON, NH - LAND, 5.9 acres, exc loca, nr town, privacy, \$35.9K, Richard, 264-6027

## RECREATIONAL VEHICLES

BOAT, '90, 21' Larson Senza, 260hp w/350 merc, trailr, frsh wtr, \$15.5/bo, Bob, 223-2239

TRAVEL TRAILER '74 Holiday Rambler, 27', slps 4, ac, htr, 2 tanks, \$3K, Ed, 226-6212 (MA)

## RENTALS

LEOMINSTER, twnhse, 2+br, 1.5ba, w/w, dshwr, dspl, patio, tennis, pool, \$725+, Carl, 237-6880

MAYNARD, 2br, lg lr w/dining, ac, deck, quiet, nr dwntwn, \$675+elect, Jean, 226-5528

MILFORD, NH twnhse 2br, 1.5ba, ac, ww, gas, 11mi from MKO, \$600+util, Nancy, 276-9476

NASHUA, NH, bright 1br appl kitch, w/w, pkg, \$100 wk util incl, Joan, (603) 888-8095

PAXTON, MA, 1br, appl, w/w, pool, \$375 + heat, Lea, 237-6924

PELHAM, NH 1br inlaw apt, sunrm, lg yrd, frplc nw kitch, ww, lg bath, Steve, 235-8568

STOW, 1br, 1ba, w/d, garg, tennis, frplc, lt cooking, priv, \$475+, Jean, 223-8873

## ROOMMATES

BROOKLINE, 1rm in 4br hse, w/d, hrdwd flrs, strge, \$375+util, Isabel, (508) 481-3127

N.CHELMSFORD, m/f to shr mod 2br loft twnhse 15 min to LKG, Nashua, \$400+, Samir, 226-7074

MAYNARD, m/f to shr 7rm hse, minutes from MSO PKO MLO \$400 incl util, Steve, 234-5246

## SEASONAL RENTALS

CARIBBEAN, ST. LUCIA, ocnview, 1 or 2br condo, maid svc, from \$375/wk, Alex, (508) 756-0448

LOON AREA, slps 6, rec ctr, furn, frplc, rvr frnt loca, nr all, wk/wknd, Peggy, 264-2959

LOON MTN, 3br & 2br or both as one, equip, frplc, tv, jacz, wk/wknd, Kendall, 264-0801

NEWFOUND LAKE, NH lux 4br, 4ba, slp 10, equip frplc, nr skiing, view, Janis, 227-4448

SUGARBUSH, VT, 3br, 2ba, slp 8, fully equipd, wlk to villg, pretty views, Tom, 223-7604

WHITE MTNS, Eidelweiss Villg nr Conway, 3br 2ba slps8, \$400/wk \$75/nt, Dave, 297-3560

## SPORTING GOODS

GAS REMOTE CONTROL CAR, Kyosho Assault, faster than elect, \$250, Ken, 237-6184

KAYAK, Yellow Dancer Percept. w/paddle & oth access, 11'7", \$375, Lucienne, 264-8021 (NH)

## WANTED

BUNKBEDS in gd condition, Bette, 223-7543

POLAROID CAMERA, MODEL 180 (older model for pkg film), Gil, 223-3070





## NEW 'EDUCATION PROGRAM' ADDRESSES PARENTS' CONCERNS

This fall, Digital is introducing a new service specifically designed to support employees with school-aged children. Called the "Education Program," the service is an expansion of Digital's Child Care Resource and Referral Program, which has been provided to all U.S. employees by Work/Family Directions, Inc., since 1988. A to-the-desk mailing, which will be sent out later this month, will describe the service in more detail.

"Through the new Education Program, employees can now get

counseling on ways to help their child succeed at school," says Erica Fox, Child Care Program manager.

"The counseling is provided by experienced education professionals, who will address concerns such as how to help your child reach his full potential academically, how to build partnerships with your child's school and teachers, and what to look for when selecting a new school system or private school."

Employees can reach this new education counseling service by calling the Child Care Resource and

Referral number, (800) 635-0606, 7 a.m.-9 p.m. Eastern time, Monday through Friday (9 a.m.-3 p.m. Saturdays). All employees who call will receive helpful materials as well, including the publication "How to Help Your Child Achieve in School."

Employees can still get help in locating quality child care by calling the number above.

For more information on Digital's new Education Program or about the Child Care Resource and Referral Program, call Erica Fox, program manager, at DTN 223-9587. ○

### MENTORING PROGRAM CONTINUES FOR "AT-RISK" STUDENTS

Digital is continuing to sponsor its successful mentoring program for "at-risk" students in Chelsea and Lawrence. Employees are needed to volunteer for a minimum of four to six hours a month, and to participate in several workshops during the school year.

The program's purpose is to create a business/education partnership that will deter students from dropping out, increase their self-esteem and enable them to learn to value their own and others' differences. Strong one-on-one relationship between the adult and the student are expected to develop through the program. Eventually, the program will serve as a model that can be replicated in other communities.

Students will be chosen by a counselor at each school. Mentors are committed for one school year and may choose to participate in a second year.

A two-day orientation for mentors will be held on Oct. 20 and 21. If you are interested in becoming a mentor to an "at-risk" student or would like more information about the program, contact Angie Rodriguez, DTN 232-2295 (@ACO or PIPPER::Rodriguez), or Grace Cantino, DTN 232-2399 (PIPPER::CANTINO). The effort is supported by Digital's Human Enterprise Organization.

## MAET TRAINING COURSES FOR NOVEMBER

"OSF/Motif Release 1.2 Update Seminar," Nov. 5, 8:30 a.m.-5 p.m., General Doriot Auditorium, MLO4-5. Course No.: 32CTS-03; Course Fee \$325. Project Leader: Linda J. DiSalvo, LEDDEV::DISALVO

Maynard Area Engineering Training (MAET) worked in conjunction with the OpenVMS DECwindows group and the DECwindows Motif Engineering Group in TNSG to develop this collaborative offering of the Open Software Foundation's (OSF) course.

The course will be divided into two sections, a technical overview of the new features in the latest OSF/Motif release and the DECwindows Motif extensions to that release. Prerequisites: Knowledge of OSF/Motif 1.1.1 (DECwindows Motif V1.0), or OSF/Motif 1.1.3 (DECwindows Motif V1.1).

"The OSF/Motif Release 1.2 Update Seminar" will include a one-hour Digital-specific presentation titled "DECwindows Extensions to OSF/Motif Release 1.2." The presentation, designed and developed by Digital's Cliff Straw, senior software engineer, describes Digital's value-added features to the OSF/Motif 1.2 toolkit, forming the basis for Digital's DECwindows Motif 1.2 release.

As part of its custom curriculum course, MAET will also offer

"X.500 Directory Services," Nov. 3, 8:30 a.m.-5 p.m., ECAD Training Room, MLO5-2/43C. Course No. 32CNT-10; Course Fee \$450. Project Leader: Sue-Lane Garrett, LEDDEV::GARRETT.

This live demo/lecture discusses X.500 Directory Services, the international standard for providing on-line directory information in support of user naming and addressing, network services access, and systems administration. The course provides a comprehensive understanding of the principles, information frameworks, models, services, protocols, and implementation approaches for this important standard. Intended for implementors and operators of X.500, systems engineers, and product managers.

Online registration is available. If you must withdraw from the course, please do so no later than 10 working days before the class start date to avoid being charged the full course fee.

Students who encounter registration problems should contact Maureen Gobiell, MAET registrar, at LEDDEV::GOBIEL.

For more information regarding this or other MAET "State of the Art" series offerings, contact Linda J. DiSalvo, MAET Educational Project Leader, at LEDDEV::DISALVO. ○





## DECIMAGE EXPRESS HELPS CUSTOMERS DIG OUT FROM UNDER PAPER AVALANCHE

Companies today are being buried under an avalanche of paper. Over 90 percent of business information is paper based, making it difficult to control, update, distribute, file, transfer and store.

But there is a solution — imaging. Imaging transfers hard copy information which exists on paper, magnetic tapes, microfilm or microfiche, into on-line databases or onto optical disks. Each page is considered an image, regardless of the data type — text, photographs, X-rays, maps, forms, graphs, for example. Images are simply another data type that should be as easy to use on a computer as text is today.

### EARLY IMAGING SYSTEMS

Some early imaging systems were replacements for film systems. Rather than store data on microfilm or microfiche, information was scanned into on-line databases, dramatically decreasing the space needed to store it. Although it took up less space, the data was still static. It couldn't be distributed to those who needed it.

Digital's DECImage EXpress, Version 1, introduced in 1991, had the unique advantage customers wanted — networking. DECImage EXpress provided complete imaging hardware and software packages based on a common set of networked imaging clients and servers (*see related article, page 7*). Newer versions are primarily image management software packages and do not include scanners or storage devices. DECImage EXpress systems can capture, index, store, retrieve, display, print and distribute image documents over the network.

The systems are based on Digital's VAX VMS platform and comply with our Network Application Support (NAS) strategy of creating standards-

based platforms. DECImage EXpress software can be integrated into multivendor computing environments.

### REALTIME APPLICATIONS AT DIGITAL

Realtime applications are currently operating in Digital's Records and Information Management (DRIM) business, managed by Bob Williams, at NRO2 (Northboro). Corporate Personnel employee termination files for 1990-1992 are being used as the first application. The DECImage system there is also used as a reference/demo site for the Imaging Product Marketing and Sales people. Here, interested customers can see first-hand Digital's records management programs and imaging applications.

Jay Maloney, Records Management consultant and DECImage EXpress program manager, is heading up the project to put the termination file data on-line. Here's how it works.

Hard copy data from the termination files is passed through an optical scanning device that reads the information, then records it on an optical disk. Each 12-inch disk can hold up to 100,000 images, or pages of data. The disks are stored in a device nicknamed a "jukebox." These jukeboxes are a mere seven feet high, six feet wide and three feet deep — a wonder of storage efficiency.

The retrieval operation brings back memories of the days when music buffs selected "three plays for a quarter." When a user logs in a request for information, a robotic arm inside the jukebox finds and picks the required optical disk and slides it into a disk drive to be read, or "played." Information is quickly routed on-line to the requestor.

### MARKETS ARE UNLIMITED

Virtually any industry or organization with large amounts of data to manage, store and analyze is a potential customer for DECImage EXpress. Markets being targeted include insurance, pharmaceuticals, banking and finance, health care, medical, media, automotive, the public sector, such as court systems and motor vehicle registries. The list is almost endless.

Imaging is increasingly being integrated with existing applications, supplying a unique opportunity for Digital to promote its systems integration business.

### WHY DECIMAGE EXPRESS?

Digital's DECImage strategy differs from that of other vendors in a few critical ways.

- Using optical disks, DECImage EXpress can network information, making it available where and when it's needed. Other vendors' systems provide specialized, dedicated systems to handle images that aren't capable of communicating image data to and from other computers.
- DECImage EXpress is rated high on expandability and scalability. Customers like the fact that they can start with one or two work stations and grow that system to 50 or 100 without changing applications or having to scrap hardware or software. With ImageNow software from Genesis Software Inc. as the "bridge," customers can add imaging capabilities to software running on IBM or other computers.
- Data storage on optical disks saves money. It costs five times less to store information on an optical disk than on magnetic media or paper.

CONTINUED ON PAGE 7





## MERRIMACK GROUP LEADS DIGITAL INTO NEW BUSINESS WITH DECIMAGE EXPRESS

The Image, Voice and Video Product Creation Unit (IVVPCU) in Merrimack, N.H. lays claim to developing DECImage EXpress, Digital's premier entry into imaging. Imaging is the emerging technology that promises to bring us closer to the "paperless society."

### DECIMAGE EXPRESS, THEN AND NOW

Digital's imaging strategy has evolved over time with each phase building on the previous one. As early as 1987 the first phase, named DECImage, introduced tools and components to integrate image capability into Digital's mainstream architectures (VMS and ULTRIX) and products.

The challenge in building an imaging system is to develop core software to manage image display, manipulation, data compression, storage and retrieval — and getting it all to work together.

Version 1, released in January 1991, was a complete hardware and software package for document image management. It came with everything a customer needed — workstations, servers, scanners and storage devices — ready to be unpacked and plugged in.

The Services Enterprise Integration Center (SEIC), also in Merrimack, served as the original sales channel. This group had the expertise to configure systems for customers and the mechanism to deliver them. SEIC was the expert resource the Field people called on for assistance with quotes. Since time-to-market was critical, the IVVPCU knew it could count on SEIC to guarantee rapid delivery.

Version 2, introduced in January 1992, was sold as a software only product. Customers can now order everything except optical storage devices through normal quoting

systems right out of the Digital price book. And to ensure that customers can get the help they need, IVVPCU trains Field people in imaging products.

### FUTURE ENHANCEMENTS, DIRECTIONS

Today, IVVPCU is working aggressively to develop imaging for the rapidly growing PC market. Says Barry Washington, IVVPCU product marketing manager, "Digital has a unique opportunity because of our relationship with Microsoft, Network Application Support and the introduction of Alpha AXP to move imaging into an environment that will redefine the kinds of things people will be able to do with imaging in the PC space."

Next generation versions of DECImage EXpress will allow different data types to be stored in the same application model. For example, in the future an imaging file will be able to accept and retain non-scanned images such as word processing documents, and other electronic reports and memos in the same file with scanned images.

Noting the tremendous opportunities for imaging, Barry explains, "Imaging is included in business plans for many Digital groups. Our biggest challenge is to develop the products to meet the market needs of our business units."

Says Bob Lindenberg, group manager, Image Voice Video Engineering group, "DECImage EXpress is still evolving but its client-server architecture and use of standard interfaces makes it relatively easy to add features or improve performance. It is rewarding to work on this product because of the interplay of various technologies (database, WORM storage, image services) and because the system is used directly in improving the productivity of our customers' businesses."

In addition to DECImage EXpress, IVV builds voice response and voice mail products (DECVoice, Voice:Mail, DECVoice Builder) and video/multimedia products (DECTouch, MediaPower).

For further information, call 1-800-344-4825. ○

### X WINDOW SYSTEM TECHNICAL FORUM TO TAKE PLACE AT ZKO

The next in a series of technical forums focusing on the X Window System will be held at ZKO this month. The intent of the forums is to update Digital employees on developments, techniques and trends in the X Window System and to improve communication among programmers in the X community.

No registration is required for the next forum on IXI X.desktop on Oct. 20 from 1-3 p.m. in Babbage

Auditorium (ZKO1/3). Featured speaker will be Will Walker, X.desktop project leader. This presentation will focus on providing an overview of IXI X.desktop and information on how to integrate applications into it.

To submit suggestions for future topics, contact Rich Takvorian, technical coordinator (STAR::TAKVORIAN). ○





## AFTER 15 YEARS, DIGITAL PRESS STILL HOLDS UNIQUE PLACE

Walk into almost any good-sized bookstore today and you'll find dozens of different books on computers and computer technology. From PCs to mainframes, there are titles covering virtually every aspect of computing.

That wasn't the case in 1977, when Digital took the unusual step of establishing an in-house commercial book publishing division. As Digital Press observes its 15th anniversary this year, it holds a unique place in the high-tech and publishing worlds. It is still the world's only completely self-contained book publishing group within a computer manufacturing company.

"We're much more market-oriented today than we were when we started out," says Digital Press Manager John Osborn. "Fifteen years ago, if you got something, you published it. Most (books) were computer science textbooks or technical references for professionals. Very little practical information was available. Then the PC came along and suddenly millions of people who would never have picked up a computer science textbook needed and wanted books on computers."

Digital Press met the demand by publishing *Technical Aspects of Data Communication* by John McNamara, who at the time was a Digital employee. John also collaborated with Gordon Bell and J. Craig Mudge on *Computer Engineering: A DEC View of Hardware Systems Design*.

Both books are considered classics in the field. *Data Communication* is now in its third edition, with more than 100,000 copies in print. *Computer Engineering* is still available through the bookstore at the Computer Museum in Boston.

"Today, it's about a 50-50 split between employee authors and outside authors," John Osborn says. "We're much more focused on the customer, which puts more emphasis on our finding the right author for the right book."

John believes that the best opportunities for Digital Press in the '90s are in four potential audiences: application developers preparing to upgrade to Alpha and new open systems platforms; PC users connected to multiple systems via LANs and WANs; network and system managers; and what he calls "futures," people who are building multimedia applications that incorporate full-motion video, sound, and so on.

Explains John, "We look for authors who have a work in process or who are interested in writing for us on a certain topic. We do some networking in the Boston publishing community, and we stay in touch with people who've written for us before. We've got a base of about 60 authors and freelance editors whom we work with."

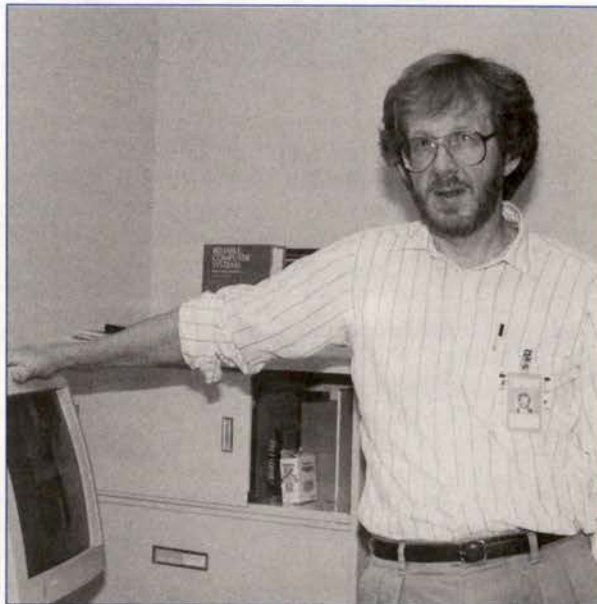
The nine-member Digital Press staff produces between 15 and 20 books a year. "That's overachieving," John says with a grin. "It takes time to edit a book and do a good job. Our best effort was three and a half months for *Using MS-DOS Kermit*. Printing and binding alone (which are done outside) typically requires four to six weeks. So for nine people to produce more than one book a month is pretty phenomenal."

Technology publishing is a \$400 million industry, small

change compared to the multi-billion-dollar information technology industry. The figure is somewhat more impressive when you consider that the average press run for a technology book is around 7,000 copies, and a best-seller may sell only half again that many.

It's estimated that Digital Press' sales represent about 4% of the professional computer book business worldwide, with annual growth in sales that has exceeded the industry average for the past six years.

Prospective authors who would like more information should contact Jan Svendsen, Editorial Department, Digital Press (@OFO or DTN 274-6472). □



JOHN OSBORN, MANAGER OF DIGITAL PRESS, WITH SOME OF THE BOOKS THE GROUP HAS PUBLISHED. DIGITAL PRESS STILL HOLDS A UNIQUE PLACE AS THE WORLD'S ONLY COMPLETELY SELF-CONTAINED BOOK PUBLISHING GROUP WITHIN A COMPUTER MANUFACTURING COMPANY.



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# E&Rt ENGINEERING TIMES

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Volume 1 Issue 2

*The bat-lovers' gazette*December 1995

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## DRS for VxWorks Achieves ADK1 Milestone

In a step toward a new generation of real-time products, E&Rt Engineering shipped Distributed Real-time Services for VxWorks software, hardware, documentation, and training materials to the first Advanced Development Kit (ADK1) site on November 17.



Tzy-Hey Chang, Ron Widyono, Mark Naylor, Jeff Wiener, George Thissell, Joe Gobbini, Rebecca Bergersen, and Brian Harrigan relax while packing up ADK1 for shipment.

Distributed Real-time Services (DRS) for VxWorks is the first of several in a family of Distributed Real-time layered products planned as part of the Libra Program. DRS for VxWorks consists of a Domain Monitor and a number of services layered on VxWorks. These are the Distributed Operating Domain, Status Value, Name, Handle, Module, Event, and Computation services.

The engineering team is managed by Mark Naylor. The technical leaders on the team include Steve Ducharme, Brian Harrigan, and John Morse. Bruce Keith is the project leader and Tim Martin and Ron Widyono provide Libra Programming Model consultation. The engineers on the respective development teams put in extra hours throughout the summer and fall to implement the ADK1 functionality.

Tzy-Hey Chang, Rebecca Bergersen, and Dave Lunger worked on the Distributed Operating Domain, Module, and Name services. Joe Gobbini, Stan Mazurczyk, and Bob Raspallo worked on computations

and events, and Jeff Wiener and George Thissell worked on tools.

The documentation team, led by Donna Stolberg and including Jay Clark, Liz Field, Steve Wellcome, Jeff Staples, and Ross Warner, produced drafts of three documents, *DRS for VxWorks Programming Guide*, *DRS for VxWorks Programming Reference*, and *DRS for VxWorks Utilities and Application Development Guide*, which were supplied in hard-copy format. Online HELP for DRS for VxWorks was also implemented for ADK1.

Because ADK1 was planned to include on-site customer consulting, the training team, consisting of Mary Roche (leader) and Penny Howe-Mailly, played a major role by completing the slides and other training materials for a three-day consulting session. Many other individuals devoted concentrated time and extra hours to review slides, provide input, and participate in a walk-through and a dry run to ensure that the ADK1 customers receive high-quality training. Doug Jensen, Technical Director, commented that "Tim Martin, Brian Harrigan, Steve Ducharme, Mark Naylor, and Mary Roche deserve special recognition for the extra hours they devoted to pulling the training together."

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The Digital DRS for VxWorks software product is a set of run-time services, an interface definition language compiler, and an application monitoring tool for developing scaleable real-time applications that utilize multiple networked nodes transparently. In addition to supporting the more familiar client/server style of computing, DRS for VxWorks offers a distributed computing style that is very effective for real-time applications. With DRS for VxWorks, a group of distributed computing nodes appears as a single real-time system to the application. Using the application programming interface (API) and supporting service system, the engineer can program an application such that threads of execution (or computations) traverse and execute passive object-style module code.

## K2 Reaches First Debug Step

The K2 team, consisting of Lead Hardware designer Alan Milne, Senior hardware designer Andy Arnott, and Principal Firmware Engineer Sean McGrane, achieved early debug success with K2 in November. Once the team received the first prototype hardware modules it took them two weeks to get to the point ready for OS loading. Vikas Sontakke, Principal software engineer based in Marlboro, traveled to Ayr to achieve this Digital UNIX milestone. On his arrival Vikas and the team spent one day getting single user mode working and the next day they progressed to multi-user mode -- an outstanding performance. The team's confidence in the design was buoyed by this success, although they stress that there is a lot of debugging to do.

K2 is an internal code name for an Alpha 21064 CPU card that can be configured to either of two speeds, 233 MHz or 266 MHz. It is one component in the set of products comprising E&Rt's Digital Modular Computing Components portfolio (also known as LEGO).

Digital Modular Computing Components (DMCC) products provide a high degree of configurability and flexibility, which allows OEMs to meet a range of customer product requirements. Items in the family that are already shipping include 7- and 13-slot backplanes, enclosures and PSUs, and 75, 90, 100, 120, and 133MHz Intel Pentium based CPU cards.

## VxWorks Software Goes to Field Test

The VxWorks for Alpha version 5.2 product, supervised by Amy Kessler, went to field test November 20.

Project leader Ann-Marie St. Laurent and other engineers Jerry Spielman, Mike Garufi, Luis Torres, and Don Thulin, along with contractors Vincent Devore and George Surka, developed the software, including the complicated port of WindView 1.0.1 to run with Alpha targets and hosts.

Four field test sites, E-Systems, Vista Control Systems, Radstone Technology, and Encore Computer Corp., received the field test software, as well as 12 other customers who requested early copies of the code.

Version 5.2 of VxWorks for Alpha includes support for Digital UNIX V3.2. In addition, this release implements another step in the source code merge with VxWorks from Wind River Systems. Digital's VxWorks for Alpha V5.2 is source-code compatible with code of Wind River Systems in its implementation of POSIX semaphores, POSIX message queues, and POSIX memory management.

Field test start adds support for the layered product, WindView V1.0.1, a utility that enables users to watch the changing event stream from an instrumented run-time system. The utility is for use with AXPvme targets from Alpha hosts.

The console driver for AXPvme 160 and 230 systems has been modified. An alternate set of socket calls based on a data abstraction called zbuf is provided. Zbuf increases performance for large network transfers.

Other new support includes the Ping utility. Ping allows for testing accessibility over the network. The kdebug kernel debugger is also now supported for AXPpci33 targets.

Changes have been made in the make files that will allow customers to use the Green Hills cross development tools from selected non-Digital hosts. When this cross tools product becomes available from Green Hills, it can be used for VxWorks development for an Alpha target. The Green Hills tools can be purchased and used by Alpha host developers for Alpha targets as an option. The Green Hills tools consist of a C cross compiler, a C++ compiler, the MULTI debugger, a macro assembler, a librarian, a linker, and utilities. Watch this space for projected dates of arrival of the Green Hills product.



## Web Page Goes Online

E&Rt is on the air! A team headed by Vince Yannett developed the E&Rt World Wide Web (WWW) home page and put it online for the internal Digital audience this month. The team, including Ed Bonver and Matt Cincotti, both Computer Science Co-op students, developed the web expertise and put the infrastructure in place to provide this valuable information source to a wide audience. Matt is a Northeastern University student and Ed is a Rochester Institute of Technology student.

Vince led a committee of engineers to plan the structure and content of the page. Vince attended the WWW Applications course to enhance his understanding of the issues and rules for Digital web implementations.

Nancy Fredrickson and Vince took photographs of many of the E&Rt people, whose pictures were scanned in by Ed. These photos bring a lively touch to the section on E&Rt people.

The E&Rt web pages are pointed to by the Components and Peripherals home page. The URL, or address, is <http://hubby.mro1.dec.com>.

The content and structure of the page are still under development, and will have on-going improvement and refinement. Regular updating of information is planned. A method for getting feedback from the field is currently being engineered.

The current contents of the E&Rt home page include:

- **E&Rt People**--Contains sections about people, their work and their areas of specialty
- **E&Rt Products** --Contains information about product offerings in the Alpha and Intel space for hardware, operating systems, and miscellaneous applications
- **E&Rt White Papers**--Contains a collection of white papers and application notes to assist customers in selecting the best software for their applications
- **E&Rt Engineering Times**--Contains this newsletter
- **Sales, Training, and Support**--Contains information about Sales aids, symposium materials, Electronic Learn Modules, and Video Training
- **E&Rt VME Partners**--Contains information about the VME Partners Program and catalog

- **Real-time Performance Reports for E&Rt Platforms**--Contains performance reports for E&Rt products as they become available
- **Web Tools**--Will contain information and tools for retrieving and viewing information on the web

Next month, look for DECTalk demos on the E&Rt home page.

## DECTalk Goes International Also passes EMI Certification

In October, the DECTalk engineering group announced plans for German, French, and Spanish versions of the product in addition to the current American English version. In addition, the new DECTalk PC passed its Federal Communication Commission (FCC) and European Community (CE) Electro Magnetic Interference (EMI) certification. The certification took place in November.

DECTalk, which was recently introduced to the E&Rt World Wide Sales team at the Sales Symposium in October, is a text-to-speech synthesizer designed for use in the assistive market for the sight and speech impaired. While a primary technology in the assistive market, DECTalk has gained a strong foothold in other markets, such as aerospace and weather broadcasting, for example, enabling it to become a forerunner in modern communications technologies.

DECTalk is a hardware product, with embedded software code, that can receive ASCII text data from a host PC, and digitally convert the text into phonemic groups (words). At the final stage of synthesis, DECTalk converts the digital sound into analog sound that can be heard through a conventional analog speaker.

The product is available in several hardware configurations and also as software only. In addition, it is available for custom software implementations.

## Cortex Success Achieved

The Cortex team, led by Jon Crowell and including Kevin Ludlum, Matt Benson, Joe Ervin, Cheryl Preston, Tom Landon, and Co-op Maria Salvati, successfully built and debugged a prototype memory and CPU module during the week of November 27.



The team has just released the I/O module etch design and should have finished modules back from Manufacturing in about three weeks. In the meantime, Joe Ervin is finishing the firmware to support the operating system boot.

Julie McGray is preparing the Digital UNIX code and Don Thulin the VxWorks code to support booting the new design in early January.

Cortex is the internal code name for the AXPvme single-board computer (SBC) that will have the product name AXPvme 4/224 or AXPvme 4/288. (4 signifies EV45; the second number is the clock frequency in MHz) We will be shipping two products with different speeds..

Cortex is an AXPvme single-board computer based on the EV45 chip. Cortex is a VMEbus device with the Alpha 21064A processor chip, memory, and peripheral device controllers on a single module. VMEbus stands for Versa Module Eurocard bus.

The market for this product is technical OEM developers of VME real-time and embedded systems who need high-performance and a Digital-supported operating system.

The product will consist of two modules: a CPU and an I/O daughter card. The I/O daughter card will first ship with the VIP/VIC64 VME interface, with an upgrade to the Newbridge logic after First Revenue Ship. The product supports either 512KB or 2MB of Backup cache on Double Inline Memory Modules (DIMMs) as an option. Main memory is supported by JEDEC standard X80 DIMMs. JEDEC is the organization that standardizes memory designs worldwide. Configurations can range from 8MB to 128MB.

## Performance Report Published

On November 8, E&Rt published a report on the results of some standard benchmark tests, which were used to measure the performance of the VxWorks for Alpha Version 3.1 and 3.2 product.

The report is entitled *Performance Evaluation of VxWorks® for Alpha*, Revision 3, and is available in hard copy format, on the E&Rt Web page (<http://hubby.mro1.dec.com>), and in the Integrated Repository (IR).

Jerry Spielman used two sets of tests, Basic Real-Time Primitives and Rhealstone Real-Time Benchmark, to characterize VxWorks for Alpha real-time executive running on several target platforms.

- Digital AXPvme 64 (based on the Alpha 21068, running VxWorks V3.1)
- Digital AXPvme 160 (based on the Alpha 21064, running VxWorks V3.2)
- Digital AXPvme 230 (based on the Alpha 21064, running VxWorks V3.2)

The study updated the work presented in *Performance Evaluation of VxWorks for Alpha AXP*, Revision 2, which was run on the DECstation 3000 Model 500 AXP.

Stay tuned for the upcoming report on performance tests of the Digital UNIX Real-time product.

## Pesky VAXELN Bug Fixed

Crack debuggers, Paul Wooster, Deb Skaltsis, and Ron Krueger solved a difficult VAXELN X-windows problem in November.

The bug, reported by Fisher-Rosemont was a very intermittent X-windows problem. The software worked hundreds of times without failure and it was difficult to reproduce the problem. Because of the complexity, the problem took a long, dedicated time to fix.

The Digital Sales Representative for Fisher-Rosemont, Pam Jones, was so pleased with the fix that she sent a special message: "I appreciate the efforts and support of the team. I understand this required lots of hours and work. Thank you!... Sincere appreciation."



Deb Skaltsis, Ron Krueger, and Paul Wooster celebrate fixing VAXELN bug.



## 2. E&Rt Field News

### Europe Update

#### Generic VME Driver

A big thank you to Jan Duplinsky from the European OEM Support Center.

Jan has written a generic VME driver that allows users to easily perform direct memory access (DMA), program input-output (PIO), and VME mapping operations without writing a device driver. The driver exports VME driver functionality to the user (application) level, allowing applications to use the VME without writing kernel mode code.

The driver is already successfully installed by several customers on several platforms. Here are a few examples:

- Alenia                      AXPvme
- INFN                      AXPvme
- TNO                      Linden
- Atlas Elektronik        AXPvme
- Panasonic              Sable / Bit3
- Keiser Aluminum        AXPvme

If you are interested in the driver, you may obtain sources and documentation from:

<http://www.rto.dec.com/~jd/driver.html>

or you can contact Jan directly at DTN:865-2535, VAXmail: roggenn::jd, or Internet: jd@rto.dec.com

#### LEGO Win

Congratulations to the Dutch team (particularly Gerard van den Berg, Arie de Groot, and Robbert Kuppens) for the first Lego win and delivery to Philips for Video on Demand.

The Philips application is a textbook Lego win. Lego allows Philips to focus first on migrating to Windows NT (Intel). They will then move to Windows NT (Alpha).

#### Linux-Alpha

European E&Rt Distributors are receiving an information pack giving them all they need to know with regards to Linux-Alpha. This will allow them to

work with their resellers to deliver low cost Linux-Alpha systems to the Education and Research markets.

The first AXPpci33 boards will start arriving at European Universities for Linux-Alpha development and support. Currently, UCD in Dublin has a system, and we are targeting Edinburgh University within the next weeks. We are still looking for other European candidates. Send inputs to roggenn::gauthier.

### Americas Update

#### Lego Project at Xerox.

Following a significant Digital PC win last year, Xerox is planning to move to DMCC. Sales and FAE support includes project plan, hardware and software integration. Apparently Xerox feel the DMCC is an excellent alternative to Digital PCs with shorter term life cycles.

#### DRS for VxWorks win at Pressco Technologies.

Pressco has requested full involvement with the DRS and is purchasing the ADK. Pressco will use DRS on a future product performing visualization analysis of video information.

High performance is a requirement. The Pressco products analyze process finish goods for integrity and completeness. Upon detection of faulty product, Pressco's systems are able to signal alerts and shut down production lines.

#### DXML for VxWorks field test at Picker International.

Picker will soon be receiving the Digital eXtended Math Libraries for VxWorks from DXML Engineering. This group began a port from UNIX to VxWorks some months ago and now is ready to deliver product. This product should help AXPvme customers obtain higher performance with their boards. We recently achieved a 46MFLOP performance on a 1000x1000 Linpack test.

E&Rt Engineering has been involved with productizing a subset of these libraries for the digital signal processing market. E&Rt Engineering should be providing an update in the future.



### 3. Questions and Answers

**Q1.** What are the part numbers for the serial and parallel pig tail cables we should use with the noname cards?

Response:

The part numbers are as follows:

- Com port cable for AXPpci: 17-3833-01
- Floppy cable (two drive or one drive) is: 17-3458-01
- SCSI cables: -- anything with 50 pin headers will do fine
- KBD adaptors: Available from CompUSA

**Q2.** How can our E&Rt group ensure that requirements which we have, namely diskless UNIX, not be dropped by the UNIX Engineering Group?

Response:

The requirement for diskless support went into the product requirements document for Post-Platinum as a highly desirable feature. The UNIX engineering and product management groups will be reviewing all requested functionality over the next few weeks.

We have no sure way to keep diskless support on the features list, but we have given the UNIX group all the data sent in by the FAEs to build a business case.

**Q3.** The field has expressed a need for multi-headed support within Digital UNIX for some time. What is the status of obtaining this support and when can we expect to have up to 8 graphics heads supported by Digital UNIX?

Response:

UNIX will support either 2 or 4 heads depending upon the type of graphics cards. This is not a PCI slot limitation but a true OS limitation.

It should be noted that CSS will be supporting multiple heads with our AXPvme SBC with a Multi-headed TGA PMC graphics option.

### 4. Related Reading

*The following is the abstract of an article titled "New Distributed Real-time OS Technologies for Industrial Automation," written by Doug Jensen, Technical Director for E&Rt Engineering. It appeared in the October 1995 issue of the proceedings for the Instrument Society of America.*

*This article is recommended reading for those who want to understand underlying concepts for our DRS for VxWorks product.*

*Full article is at <http://www.tiac.net/users/jensen>.*

Traditional real-time computer systems have historically been focused on small, simple, centralized, static, subsystems for low-level, sampled-data monitoring and first-order control. While that remains a healthy market, the industrial automation regime (among others) is also expanding to include large, complex, distributed, dynamic, mission-critical real-time systems.

These impose dramatic new real-time operating system (OS) requirements, such as OS support for predictable end-to-end behaviors -- e.g., computation completion timeliness, consistency of distributed execution and data, fault detection and recovery -- despite inherent uncertainties (such as variable latencies and partial failures) in the application and computer system execution environment.

Conventional real-time OS concepts and techniques are insufficient to satisfy such requirements. This paper provides a brief overview -- first, of the new expansion of the real-time regime, and then of some of the more general and powerful distribution and real-time technologies which are emerging for next-generation industrial (particularly process) automation OS's.

#### **FEEDBACK**

Please send your comments and feedback to this newsletter to Jaspi Sandhu (HELIX::SANDHU) or Judith Scott (HELIX::SCOTT).