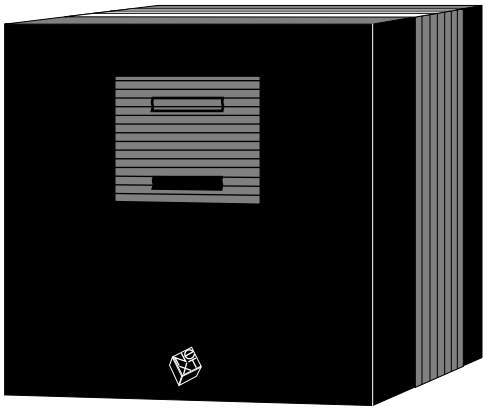
rmNUG

Rocky Mountain NeXT Users' Group Newsletter



October, 1990

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October Meeting of Rocky Mountain NeXT Users' Group

I am pleased to announce that Andrew Stone will be the special feature for our October meeting. It will be held in the Engineering Center on the CU campus in Boulder on the 11th of October at 7:00pm. Andrew Stone is a registered developer for NeXT and is the president of Stone Design, a software house which specializes in applications for the UNIX, Macintosh and NeXT platforms. Andrew will be discussing the design and utilization of TextArt along with the presentation of new software projects that he is currently developing.

Here is an summary from the press release on September 18, 1990. Stone Design Corp. introduced two new products for NeXT computers: DataPhile and ArtDraw.

Andrew states that "DataPhile is a full-featured flat-file database program created specifically for NeXT computers. DataPhile contains all the features users have come to think of as indispensable in a flat-file database, combined with the easy-to-use interface that is essential to NeXT computers."

ArtDraw for the NeXT Computer is a major new graphics application inspired by the widely acclaimed TextArt program. ArtDraw allows instant creation of color graphics with any combination of the following: neon outlines, light-source shading, shadows, multiple copies, radial fills, and skewing. A few of ArtDraw's features are: color support, bezier curves, unlimited zooming and a unified interface model.

Directions: Coming either from north or south to boulder, get on 28th street (36 turns into 28th street) and turn west on Colorado St. Take your first left and park in the faculty parking lot on your immediate right.

The Engineering Center is the huge building straight west of the parking lot. Walk straight west toward the big atrium with the fountains.

You are now on the 0 level. We will have signs for you to follow from there. Room: EE00-30. Time: 7:00pm. Date: Thursday, October 11th.

Editors note: It is not true that there is a large piece of cheese located somewhere in the maze of corridors at the Engineering Center.

rmNUG's Software Contribution Program.

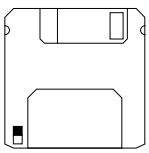
Stone Design is the first software company to donate their product to the Rocky Mountain NeXT Users' Group. I'd like to take this opportunity to personally thank Andrew for contributing TextArt. Roger Rosner from Lighthouse Design is sending us the "First Compilation Disk" this week and will be sending us the 2.0 version of "Diagram!" when NeXTOS 2.0 is readily available. Media Logic has contributed a full-blown version of TopDraw to rmNUG and also sent along an evaluation copy [will not save or export files] to freely distribute. You might also want to get a copy of the free TopDraw tutorial, an incredible work in and of itself. Adobe Systems has accepted our request for Displaytalk 1.0 and the "Adobe Plus Pack" set of fonts. The contact person there promised to ship both of these products the first two weeks of October.

"The 040 is a technological breakthrough"

As always these applications, along with all the others we will be receiving under the contribution program, will be available each meeting for you to use.

Here is the current software wish list for the contribution program:

BugByte 1.0
Absoft Fortran 77
FrameMaker 2.0
Wingz 1.1
PaperSight
Contact! 1.0
Communicae
Click Art



If you would like to see any other programs donated to rmNUG, please speak with me and I will see what can be done.

Baran's Tech Letter

Baran's Tech Letter is an independent newsletter covering news and technology relating to the NeXT Computer. The goal is to provide timely coverage and analysis of new products and technological developments affecting the NeXT environment. The letter will offer a combination of news articles, opinions and analyses of new products and technologies, and "hands-on" features, providing practical solutions to problems facing NeXT users.

The editor and publisher of the letter is Nicholas Baran, a registered NeXT Developer and former employee of BYTE magazine. Nicholas has agreed to provide rmNUG with a complimentary monthly subscription to the letter. I will have these issues at each meeting so that by perusing them, you will be able to determine if you care to subscribe. Subscription cost is $125.00 per year for 12 issues.

Baran's Tech Letter
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NeXTWORLD Magazine.

On September 18, 1990, International Data Group, Inc. announced the publication of NeXTWORLD, a bimonthly magazine that will be the most incisive source of information about the NeXT Computer. The publication will launch its premier issue on newsstands in December with a cover date of January 1991. In both its scope and presentation, NeXTWORLD will move beyond the boundaries of traditional computer magazine publishing. It will cover not only the hardware and software developments for the NeXT platform, but also the topics, trends and themes of an important and powerful generation of computer users.

Currently registered owners of a NeXT, along with all new buyers receive a form for a complimentary Premiere Issue of NeXTWORLD.

We should have complimentary order forms available at the October meeting. If you are unable to attend you can call Jeannine Barnard at (415)978-3183.

The Motorola 68040.

As you have probably heard by now, the new NeXT computers are all based around Motorola's 68040 chip. You may notice that NeXT is reporting lower performance numbers than Motorola. This is because NeXT has chosen to use the more conservative (realistic?) estimates of the 040's speed

I recently discovered a short and sweet article about the 68040 in a Motorola document called "Update". Here is a restatement of the highlights:

Motorola's new MC68040 has all the outstanding traits of the M68000 Family, plus an array of new features that make this new 32-bit microprocessor faster and more powerful than any other CISC microprocessor as well as many RISC products.

The "040" is a technological breakthrough: It delivers 20 MIPS at 25 MHz. It packs 1.2 million transistors on a single piece of silicon (4x the 68030), making the 040 the most sophisticated microprocessor available. It's manufactured using Motorola's 0.8 micro HCMOS technology and includes more than five processing units that operate concurrently. An instruction can be processed every 1.3 clock cycles.

The 040 inherits the 68000's $4-billion, 32-bit software base and $160-billion hardware

The rmNUG Newsletter is published monthly by the Rocky Mountain NeXT Users Group.

Readers are encouraged to send their comments or contributions to:

David Bowdish
73340.2146@compuserve.com

Any submissions of letters, artwork, articles, etc. will constitute implied permission for rmNUG to publish (in whole or in part) in print or electronically.

Sorry, but with our budget ($0) we can only afford to offer our sincerest thanks for any contributions you may send.

Special thanks to David Hieb, Brad Green and David Cook for writing the articles for this newsletter.

Editor:
David J. Bowdish

Contributing Editors:
David R. Hieb and Brad Green

"Thanks so much for the incredible response!"

base by being fully object-code compatible with all the members of the 68000 Family.

By including integer unit, floating point unit, two memory management units, a data cache and an instruction cache on a single chip, the 040's processing rate surpasses other 32-bit microprocessors. The 040 provides an average of 3.5 MFLOPS and a peak of 8 MFLOPS making it ideal for graphics applications, computer simulations, and financial analysis. The 040, already endorsed by NeXT, Apple Computer, HP, and many others is packaged in a 179-pin ceramic PGA package.

Here are some technical features about the logical processing units: Integer Unit - The 040's 20 MIP integer unit implements many high-performance RISC features. Instructions and addressing modes that are most frequently used are optimized for single-cycle execution. Performance is also enhanced by six stages of pipelining.

Floating-Point Unit (FPU) - The 040 incorporates an 80-bit FPU that works in conjunction with the integer unit to increase overall system performance. While being fully object-code compatible with the 68882, the math coprocessor used in conjunction with the 030, the 040 FPU delivers five to 10 times the performance of the 68882 on frequently used instructions. The FPU also includes a dedicated hardware multiplier (64x8) that increases system performance.

Caches - The 040 incorporates separate 4K data and instruction caches to support high system performance. These caches work simultaneously to provide data and instructions to other execution units at a rate of 200MBytes per second. The four-way set-associative caches support snooping of the external bus to allow multi-processing and offer concurrent cache lookup and maintenance.

Memory Management (MM) - The 040 includes separate data and instruction paged-memory management units that operate in conjunction with the caches. The MM units support both demand-paged virtual memory and real-time operating systems. They provide simultaneous instruction and operand access translations that are selectable for 4K or 8K page size.

Beta Testing.

WordPerfect, Lotus and Ashton Tate are in the process of developing software products for the NeXT [see the Software Release 2.0 section for a description of each product].

rmNUG has been selected by each company to participate in their individual BETA test programs. To date we have received PowerStep from Ashton Tate. WordPerfect and Lotus have informed me that they will be shipping their BETA products to rmNUG in October and should therefore be available for you to pick up at the November meeting.

If you are seriously interested in these products, check the correct box on the October rmNUG Sign-In sheet. For those of you in the Ashton Tate BETA testing program, bring an Optical disk to the October meeting so that you can copy the PowerStep application.

Digital Faces.

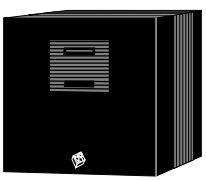
We will be taking (on a voluntary basis) a Digital image of your face at the October meeting. These graphics will be utilized in publications and will be available on the rmNUG ftp site, alumni.colorado.edu. For those of you that have been to Usenix, the graphics will be similar to the FaceSaver photos.

rmNUG Finances.

Thanks so much for the incredible response to our request for funds at the August and September meetings. As you might already know, we have deferred the issue of charging a yearly membership fee and have instead elected to collect funds at each meeting. These monies will go for covering the cost of mailing, photocopying, paper, toner and phone bills. Please understand that as much as I hate to have to collect the funds, they are necessary for the monthly operating budget of an active group like ours.

Jacob Gore has agreed to hold the position of treasurer until our formal elections in 1991. Jacob will not only be keeping track of expenses but will be helping out on establishing rmNUG as a non-profit, tax exempt organization. If any of you have direct experience in this area, we could sure use some more help and advice.

"NeXT needs a phrase that sticks in peoples minds"



Reviews, Columns and Miscellaneous.

I urge you to take a moment and think about what you might be able to do for an upcoming rmNUG Newsletter. Remember, this Newsletter is for US, and therefore in my opinion should be written by US as well. This type of collective effort will shed new light on rmNUG and produce a better Newsletter.

Here are some suggestions:

* Review a book or software package.
* Present a summary of a recent convention or SIG that you have attended.
* Share your thoughts, frustrations or elations in regard to NeXT.
* Present a "wish-list" for future enhancements.
* Include some tricks, traps and pitfalls that you might have encountered.

Usenet News

Each month we will include 1 or two interesting news items from the Usenet news group "comp.sys.next". This will give those of you that don't have access to Usenet news a flavor of what is going on in the electronic frontier.

Article: 7992 of comp.sys.next From: melling@cs.psu.edu (Michael D Mellinger) Newsgroups: comp.sys.next Subject: Cola war with Apple Date: 21 Sep 90 02:27:52 GMT Sender: news@cs.psu.edu (Usenet)

NeXT needs a phrase that sticks in peoples minds, like the "Real Thing", "the Pepsi Generation", or "The Computer For The Rest of Us." I would say they did a great job building the machine, but they have to sell it, which might actually turn out to be harder. Do you think there is enough brain power on the net to come up with an award winning slogan? Better yet, a NeXT song like "I'd like to buy the world a NeXT....":-)

-Mike

Article: 7989 of comp.sys.next From: eshook@Franz.COM (Elizabeth Shook) Newsgroups: comp.sys.next Subject: Allegro CL/ NeXT Announcement Date: 20 Sep 90 00:08:42 GMT Sender: news@Franz.COM Organization: Franz Inc., Berkeley, CA

There's been a lot of discussion in comp.sys.next regarding the future of Allegro on the NeXT platform. Franz Inc. is pleased to make the following announcement.

FRANZ TO OFFER ALLEGRO CL DIRECTLY TO NeXT CUSTOMERS

SAN FRANCISCO, September 18, 1990--

Franz Inc. today announced plans to directly provide Allegro CL (Common LISP) on Release 2.0 of NeXT's system software, for the new NeXTstation and NeXTcube computers. At the same time, Franz introduced a low-cost runtime option for delivering LISP-based customer applications on the NeXT platform.

Allegro CL is a powerful object-oriented programming tool for development and delivery of complex applications. With incremental compilation and powerful debugging facilities, Allegro CL is used to produce a wide range of commercial applications, including expert systems, CAD/CAM, and computer graphics. Allegro CL has a direct interface to NextStep's Objective-C, Interface Builder, and Application Kit, allowing the user to treat Objective-C objects as LISP objects.

"NeXT's customers will be pleased to hear that they can easily obtain Franz Allegro CL with NeXT's new computers," said Fritz Kunze, president of Franz. "We are committed to the NeXT platform, and we will continue to provide NeXT with powerful development tools." While Franz is making Allegro CL available to new users, NeXT will distribute a free upgrade to current Release 1.0 customers. Franz will provide software support to all Allegro CL users.

The new low-cost runtime option is a compact version of Allegro CL, without development features such as a compiler or debugger. NeXT developers pay a one time fee for the right to distribute, plus a per-copy fee equaling two percent of the delivered product's price. This means that commercial developers can minimize costs to include an optimized runtime LISP with their application. And educational, research, and government agencies will be able to distribute non-profit applications on a low-cost or no-cost basis.

"LISP is not only an excellent language for prototyping, but also for commercial deployment," said Kunze. "With the new runtime option, NeXT developers can take

advantage of the sophisticated development environment of Allegro CL, and still have a clear path for delivering cost-effective applications."

Allegro CL 3.1 for NeXT is available now directly from Franz for $1,500. Next year, Franz will port Allegro CL 4.0 to the NeXT platform, including native CLOS (Common LISP Object System) and Allegro Presto, an automated runtime generator.

Franz Inc. is the leading vendor of LISP-based software tools on standard platforms. Franz Inc. was founded in 1984 by affiliates of the Computer Science Department at the University of California at Berkeley, including original developers of Franz LISP and BSD Unix. Allegro CL and companion products are sold and supported worldwide through Franz' direct sales force and distribution partners. Franz customers include universities, research institutions, and Fortune 1000 corporations.

For more information, contact Franz Inc., 1995 University Avenue, Berkeley, CA 94704, (415) 548-3600.

Allegro CL and Allegro Composer are registered trademarks of Franz Inc. Unix is a registered trademark of AT&T.

-- Elizabeth Shook, Franz Inc.
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Compuserve Access.

For those of you that do not have direct access to the Internet, but do have a modem, you can exchange email with our Internet users in a fairly easy fashion. Although this might only be an interim solution (until Colorado Supernet provides Internet access to us), it seems reliable and can be utilized immediately.

From the Internet: user#1.user#2@compuserve.com From your UUCP site:...!uunet!compuserve.com!user#1.user#2.

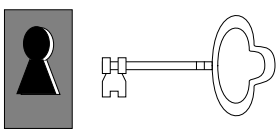
If you already have compuserve access but still have a U.S. air mail address (instead of email) for your rmNUG mailing list entry, please put your compuserve address on the sign-in sheet.

Available Software at the meetings.

The following list of software will be made available for those that brought their Optical Disks. We will continue to add new packages as they are available and keep the most current copies of the ones that we advertise. Note that this list will also start to include the projects which have been the special features of past meetings.

I have included the file 'README' from nova.cc.purdue.edu for those of you not familiar with the 'tar' and 'compress' commands.

* Music directory.
* X-Windows directory.
* Tao directory of all issues.
* Comp.sys.next file of NeXT news.
* BuzzNUG directory of all issues.



FTP access for the rmNUG Newsletter.

Issues of the rmNUG Newsletter are now available via anonymous ftp from the following sites:

nova.cc.purdue.edu:~ftp/pub/next/Newsletters/rmNUG.

cs.ubc.ca:~ftp/next/rmNUG.

The rmNUG Newsletter (along with other goodies) will also be available on our local ftp site, alumni.colorado.edu (ipaddr == 128.138.240.32):

alumni.colorado.edu:~ftp/pub/rmNUG.

This represents a big step for rmNUG as far as national recognition goes. I hope that the rmNUG Newsletter (along with others) will help serve as a motivating paradigm for user groups around the world.

"This is the first time that a foreign company has ever won the Grand Prize"

* NeXT On Campus directory of all issues.
* gnu directory of all the gnu packages and source.
* NeXT Answers directory of the latest installment.
* Applications directory which the apps. on the Internet.
* Mathematica directory of my Mathematica article/graphics.
* Interface Builder directory of the IB labs from NeXT developers camp.
* GIF directory which contains GIF images and related GIF/PS/TIFF stuff.

Available Literature On NeXT Related Issues

We will have several stacks of NeXT related literature available at each of our meetings. I'm sure the wide variety of topics we are able to provide will in some way interest you. By the way, if you are interested in some literature that you do not see present, contact myself or Brad Green. Here is a listing of the titles.

* Third Party Software catalog.
* The classic NeXT introduction booklet.
* The classic NeXT Desktop Publishing booklet.
* Workstation Publishing Samples.
* The MacWeek NeXTWEEK booklet.
* The UNIXWORLD article on the NeXT.
* The MACWORLD article on the NeXT.
* The Personal Publishing booklet.
* The Adobe Type Catalog.
* NeXT On Campus.
* Mathematica booklet.
* DIT's product release featuring the Cube Floppy 1.4.
* Pacific Micro's product release the PM 1.44 Floppy Disk.

The November rmNUG Meeting.

We have yet to commit ourselves to anything solid for the November meeting. Please be sure to mention any suggestions you have as we discuss the issue at our October meeting.

Hopefully, we will have some of the new NeXT computer products available for demonstration.

The December rmNUG Meeting.

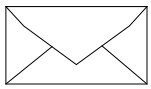
We are tentatively planning on having Doug Simons present his latest software package for the NeXT. Doug is a local NeXT developer from Fort Collins and is the president of Thoughtful Software. We are delighted that Doug is a rmNUG member and want to provide him (along with our other developers) with as much feedback and critique as is prudent.

Wanted: Ideas & Submissions

We will also accept letters to the editor and NeXT-related classified advertising.

All submissions may be sent to:
Dave Bowdish
73340.2146@compuserve.com

or by U.S. Snail



David Bowdish
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Denver, CO 80236

NeXT Milestone!

This is great news from Japan on NeXT products!

"The G-mark is an award given by the Ministry of International Trade and Industry (MITI) in Japan. Since 1957, MITI has awarded this mark to products available in Japan with outstanding appearance, functionality, quality, and safety.

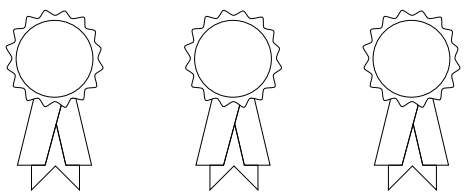
There are 13 major product categories including Audiovisual, Transportation, and Information Equipment.

Last year for instance, 744 companies submitted 3,787 products. Of these entries 1,146 products were awarded the G-mark.

The Sony 8mm Handicam camera edged out the Nissan 300ZX for the overall Grand Prize Award as the best designed product of 1989.

The NeXT Computer system is the **Grand Prize Winner for 1990!**

This is the first time that a foreign company has ever won the Grand Prize."



Starting Your Own Group

For information on how to start your NeXT User Group (or just NeXT user group information in general), send email to:

user_groups@NeXT.COM

The BIG ANNOUNCEMENT!

For those that missed the NeXT Intro, here is a complete narrative provided by Charles Perkins of the Boston Computer Society.

"This is the future of NeXT"

For me, the day begin at 5:15am setting up a breakfast we were hosting to "watch the dawn on a new era in computing." From about 6 to 8am, about 50 NeXT employees and enthusiasts came to watch the sun rise from the roof garden, and then I was off to Davies Symphony Hall for the Event.

Soon after 8, they let us in, and (having luckily gotten some press credentials from NeXTWORLD) I ran to the first row and sat closest to the podium (I knew I could almost touch the great man's shoes from there :-). During the tense minutes waiting for the presentation to begin, R. Perot (billionaire for many years and an investor in NeXT) came down the row, shaking everyone's hands and welcoming them. What a thrill! Two years ago to the day, Steve had, in this very same hall, first introduced the NeXT computer, and in that time I had gone from an admirer to a developer, reporter, and enthusiast here in "the front ranks" of the crowd. I was thrilled but also worried someone would throw me out of there! :-)

Finally, the crowd was quiet and the lights came down, and Steve appeared. He began simply: "This is the future of NeXT." (A quite serious statement, since so much was riding on this introduction and the momentum it would produce.) He went on to begin his slow dance with the audience, using the gentle introduction of slides with more and more information to punctuate each point in his usual dramatic style. You could almost taste the anticipation in the room...

First, he began with the main thrust of the introduction: lessons learned. NeXT had listened to its customers and had in January of this year started a program code-named Warp 9 to correct their concerns. After only 9 months of effort, their new products were substantially complete and the new version of the system software was in place, quite a feat in itself, but within NeXT's lean/mean corporate reach. He then specifically pointed out the feedback, how users loved multitasking, UNIX, ease of use, Postscript, etc., but how they had four serious complaints:

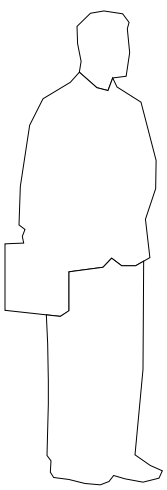
(1) Too slow
(2) Too expensive
(3) Not enough applications
(4) No color

He then turned to address each of these in turn and explain how their new products, new software, and third party developers had solved them.

On the speed issue, NeXT has the first shipping 68040s in quantity and is very pleased with their speeds (note that the numbers below are at the LOWEST end of the range Motorola publishes about the 68040, so I think NeXT is being conservative (or realistic) about these numbers). A slide shows the Mac II ci and fx at about 4 and 7 MIPS (I'm trying to write this all from memory, so forgive silly errors), the average of the IBM and Compaq 386 and 486 PCs at around 7 and 12 MIPS, and the SPARC SLC and about 12 and the SPARC 1+ at about 15 MIPS. Now remember that NeXT wants to be a "Super PC" not a traditional workstation, thus the comparison to other PCs, and thus also its positioning at 15 MIPS -- equal to the SPARC 1+ and exceeding all other available PCs. (With more than 2 MFLOPS on-chip, this accelerates the NeXT integer ops by a factor of 3 and F.P. by 5-10 which makes all Postscript drawing 2-4 times faster (I've seen drawing speed on the 68040 myself)). As a final touch, NeXT points out in a subtle way that actual throughput is more than MIPS (remember those 12 DMA I/O controllers and separate paths?) but just showing a complex Mathematica 3-D color plot and how long it takes to produce it on the screen (mostly F.P. but some V.M. I/O and a little drawing): 250 seconds on the Mac II ci, about linearly less on the fx, 386, 486 according to MIPS, 50 secs. on the SPARC SLC, 40 on the 1+, and... 26 on the NeXT 68040. And that is on the smallest new model with minimum memory. So in summary, Steve believes they have turned "Too slow" into "Fast."

On the price issue, he showed the same MIPS slides with the prices written above them for comparison. I believe they were approx. $8k for the ci, $12k for the fx, about $7k and $10k for the 386/486 pair, $6500 for the SLC (all machines had the cheapest disk added to

"Does Bill Gates exist?"



them to get them up to the 105 MB included in the NeXT), and $9k (?) for the 1+. The lowest cost NeXT comes in at only $4995 retail price. This includes:

- 68040 with 8 MB RAM - DSP 56001 / CD sound out - 105 MB disk with 2.0 pre-installed - MegaPixel 17" display - SCSI-2 interface and connector - 2 improved RS-423 ports - Usual (LOTS) of bundled software - Integrated microphone - 2.88 MB floppy disk drive - Twisted pair and BNC ethernet

These last two items were also user feedback -- the optical disk has become an option and the new 2.88 floppy is fully DOS and UNIX compatible for both 1.44 and 720k floppies, and the twisted pair on every NeXT means no rewiring for ethernet will be necessary throughout corporate offices. Considering once again the DSP, sound, and bundled applications, and noting that the SLC is $1.5k greater without any of these, I go along with Steve when he concludes "Too expensive" has been turned into "Low cost."

For the applications issue, there were four main thrusts. Steve presented the four areas of interest as: (1) business productivity apps (traditionally dominated by the PC market), (2) desktop publishing and layout apps (Mac), (3) custom-designed and tailored high-powered apps (Sun), and (4) To-be- discussed-later. I'll talk about each presentation in turn:

(1) By far my favorite part of the Intro was when Jim Manzi gave his talk about Lotus' new product. He began: "We are here today to try to answer some deep philosophical and theological questions. First, "Why?" <dramatic pause> Then, "Why the NeXT?" ... And finally, "Does Bill Gates exist?" <loud surprised laughter> My time does not allow me to explore the third question, but...." and then later in the talk: "Why did Lotus abandon compatibility and step back to reinvent from scratch the very meaning of the Spreadsheet? Because God told us to." It was a dry, understated, wonderfully cosmic-religious-comic introduction to the whole new approach Lotus had taken, delivered with brilliance and style. I hope someone was recording it.

The actual demo of Lotus (done I believe by the product manager), was just as stunning. It is hard to describe in words how simple and flexible Improv is... First, it has generalized formulas that use English, like "Net = Gross - Costs" which apply EVERYWHERE those categories appear, it has categories of rows and columns that organize and document the information (no numbers and letters), and if you view the grouping of these categories dynamically as providing a multi-dimensional space of information, you can "flip" the axes of this information space by pulling category names around in real-time. It is impossible to describe how cool this is...imagine that you have your spread- sheet organized by product type and the subcategories for price, cost, etc., then have columns that are Q1, Q2, Q3, etc. You can flip the x and y axes and have Q1 at the left with columns for the various products and sub-columns for the price, cost, etc. This reorganization takes the blink of an eye, and allows you to play with the many ways your data can be viewed, graphed, etc. in real time as easily as pulling it into the new form (literally). And for a final touch, Lotus announced that until the end of this year, all new machines and all 68040 upgrades will get a free copy of the product!! (it normally costs $695) This will be more impressive when I tell you about up-front sales later.

Also on the list of these apps was PowerStep, a traditional spreadsheet by Ashton-Tate, WingZ by Informix, various organizational and client tracking tools, etc. (Read the Fall 1990 product directory to see new shipping apps.)

(2) Next up was the head of WordPerfect who not only gave the talk for his product, but demo'ed it himself. This was one of only a few glitches in the seamless presentations -- he was a little nervous and messed up the demo, but later Steve seemed to have noticed and showed off a little more of it himself as part of his demos. The thing that WAS amazing about this presentation was the speed at which re-laying-out was occurring. For about a five-page document, he made it multiple columns, stretched them, made it four columns, adjusted, changed to flush right, left, center, etc. and EVERYTHING took less than a blink. I literally could not seen any perceptible delay in any operation reorganizing the document. So not only was typing perfect and fast, every- thing was. I thought this was a good demo of 68040 speed (and, I guess, good algs. developed by WordPerfect). Also in this category was Quark Xpress for the NeXT, new Framemaker, a new tool for precise layout of text by Glenn Reid (Mr. Postscript), 1500 new fonts available for the NeXT via The Font Company, Adobe announced Illustrator 3.0 will ship first for the

NeXT, etc. In general, an impressive list of apps for this type of activity, all fully compatible with their PC or Mac cousins.

(3) Steve himself gave the example of how NeXT can do custom apps. (Though in the previous talk, Mr. WordPerfect said an amazing thing---they had STARTED their development effort for NeXT 6 months ago, and are going to be Beta this month and shipping in 3...an effort fully 50% shorter than they had planned for. Other developers site speed-ups as high as 3-to-1 in ports and much faster for new development. REALLY! I'm one of them!)

"Developers site speed-ups as high as 3-to-1"

He began showing the new custom, dynamically loadable objects in Interface Builder. This allows your new Objective-C classes to be interpreted in real- time and tested in I.B. (like a simple interpretive environment), and then be placed in palettes for other to use just like the standard buttons in I.B. The demo he gave was using some Database Kit objects NeXT had thrown together. Though simple in concept, if you stop to think what's happening in a COMMERCIAL not a research computer, this is exciting. He placed a browser for retrieving data and allowing selection, pulled down an icon representing the database, used the Inspector to set which database and what data field he wanted to view, connected the browser to the database, and then went into test mode. In seconds, the data popped up from the database queries in the browser. He popped back into Edit mode and added some fields and an RTF scrollable text area for ancillary data and comments about the browser's current selection, attached them all to the browser, and then tested again. Now when he selected a browser entry, the various fields filled with their values from the database, including a full multi-font comment popping into the RTF text area. Obviously, editing, manipulating, etc. is now trivial.

The neat idea here was people selling large sets of palettes, not just apps, so that other developers can leverage directly on each other's ideas and interface objects. Imagine a kit for Database, for Graphing, for Imaging in 3-D, added to the standard kits NeXT supplies for Music, Sound, Printing, etc. each as easy to use as pulling buttons off the palette and connecting them together! This is the vision of fast, easy user and customer customization that NeXT provides: they hope to do what more traditional workstations have been doing but much, much better.

(4) Finally, Steve described a new area for applications he felt would be as important as the above three in the 90s: interpersonal computing. Claiming that in the 80s, personal computing solved most of an individual's productivity needs, that the 90s will solve more group and collaborative productivity needs. (This is the research we began in the Smalltalk group when I was there around '84/'85, we even used the same words... :-) The general concept here was one of providing the environment for small, focused applications tools to interact, creating a flexible set of services the user can call upon from anywhere, and allowing the free and easy trading of these apps and their documents over nets.

He began by demoing some of the new features that 2.0 provides towards such an environment. These ranged from a new FAX option (anything that can be printed can just as easily be FAXed now, and the receiver gets a MUCH nicer looking FAX since Postscript can image directly and avoid scanning errors; FAXes can also be received and filed automatically, examined and edited) to a whole dynamic structure for allowing applications to register as providing services to other apps--old apps and new apps alike will see the new services and will be able to take advantage of any future apps as well. Services pop- up automatically for all available applications in a menu of that name in each applications' main menu. One of the most powerful demos of these features was when Steve popped up a received FAX in TIFF format (bits), selected the service provided by a scanning app for OCR from the bitmap editor, requested conversion to text, and a few seconds later, the text popped back in a fully editable form!! This service would be available to any app that requested it.

The new workspace in 2.0 has a new "shelf" on which commonly used documents, apps, and directories can be placed...like the radio buttons in a car radio, these allow easy wandering and remembering of past locations (like pushd/popd). The browser also allows multi-threaded copy/move/delete so the browser is not tied up during long disk operations (it also shows progress in nice ways and gives more status information and more options in general than before---it is very nice). The Mail application has been improved and extended to live more closely with other mail systems and to allow Icons to be dragged in AND OUT of Mail. In general, 2.0 now allows any app to drag icons for files

"This was a moment of Myth"

or for directories into and out of any view, and what happens is up to the app. For Mail, it does the tar/compress/uuencode on one side and uudecode/uncompresss/ un-tar on the other, so sound, music, graphics, bits, EPS, whole directory structures, etc. can be trivially transported. Combined with services, this is a powerful metaphor. One mail message suggested trying out some new legal files in somebody's home path...Steve workspace-browsed over the Net to the machine and the area suggested, messaged the Digital Librarian service to add the directory into it's targets, it popped up loaded with the new files, and he then searched around a little with it's standard full text search (which, by the way, was 3-5 times faster than before!! They've re-optimized the searching so it is almost blinding now.)

So, in summary, Steve said that "Not enough applications" had become "Great applications."

And, to address the fourth complaint, no color, Steve saved the best for last. He introduced a version of the $4995 NeXTstation called NeXTstation Color (both of which look like Pizza boxes in black with a display on top). This moderate color workstation has 16 bits (12 color, 4 alpha channel) of depth per pixel, and uses the same Sony Trinitron awesome-sharpness 16" monitor that the really-cool thing I'll describe in a minute uses, 12 MB of memory, and costs only $7995. Note: all B&W and color NeXT products I'm telling you about here have fully interchangeable software environments---the SAME code running on the Postscript above the depth 4 MegaPixel will work on the depth 16 color and the depth 32 color described below; they even do automatic dithering and other tricks to make it look better than you's expect. All the color machines use a TrueVu RAMDAC chip for window-by-window color depths, so for the 16-bit machine this means that ALL windows look good even if they have color maps with incompatible entries---true RGB goes out the back correctly! This "simple" color machine is obviously already better that the low-end Sun color (and blows away PCs and Macs of course), but wait there's more!

The really exciting thing was that not only was there a new version of the Cube with floppy, etc. (updated to be like NeXTstation and about $8k), but that into this or any old cube could be added a NeXTdimension board. Now you might be tempted to say, Yeah, so it's another RGB color board. Well...listen up. NeXTdimension has 32 bits, with 8 bits of alpha, allowing all sorts of magic special effects in draw and layout programs (like air-brushing in a pattern behind a car and seeing THROUGH the car windows the pattern behind the car but modified suitably by the color of the glass!). These are true 32 bits, no color tables. It has an Intel i860 built-in that does a minimum of 30,000 Gourand-shaded polygon fills per second, and that allows the standard NeXT U.I. to run as fast (and faster!) that the B&W U.I. even though it's pushing around 8 times more data for every window! Full 32-bit color windows can be dragged around in real-time just like the B&W windows can. Steve showed all sorts of really striking color images, and when you look up close, it is truly photo- realistic color like one of the best of the monitors at SigGraph.

Then came the section that brought the house down...Steve was looking at a door in B&W in the bitmap editor, and he pressed what looked like a large CD play button...the door was a frame from the Wizard of Oz just as Dorothy is about to enter Oz, and as we watched, it came to life and played full-motion color video in full-CD sound in real-time in the window. The Wizard of Oz ran and ran as people clapped and clapped. The damn NeXTdimension has real-time display of video on the screen, built-in JPEG compression in a VLSI chip that performs up to 100-to-1 reduction on the fly for I and O, it has two RCA video inputs (with an S-video slaved to one of them), and an RCA video output with S-video as well. Also RGB output. Also any color monitor can be used for output. Also, here's the price:

===> $3995 <===

When Steve announced that and then took a live video feed of himself, showed us it updating in real-time, captured a frame into the editor, and then composited in Donald Duck sitting on his hand, all in a few seconds, the crowd went wild. This was a moment of Myth. All of the hardware and software ideas of that momentous 1968 demo by Doug Engelbart were finally becoming available on an affordable platform, and we could feel the world changing around us. It was a feeling I won't soon forget.

Well, as you can tell from my reaction above, I am buying a NeXTdimension board and color monitor as soon as my budget allows.

"It is an exciting time we live in."

Along with my Digital Ears, this will give me full-motion, real-time editing in CD-sound to/from my VCR, any laserdisk, output to normal or S-video monitors, etc. I didn't mention, but developer and educational prices will be 30-35% LOWER than the above, so we are talking $3k for the cheapest NeXT and only $5.5 for the full upgrade to NeXTdimension for current NeXT cube owners (including the amazing Sony monitor). A brand new NeXTdimension LIST PRICE is $14k, about 1/3 to 1/4 the price of comparable ANYTHINGs, workstations, personal IRISes, PCs with all those extra boards, etc.

I think this really is the beginning of a new era, just as PCs brought down the price of individual computing, this will bring down the cost of individual multi-media, integrated environments that can as easily download and utilize the latest movie, MTV video, and local songwriter's MIDI performance info. as they can create their own programs, music, video, and movies. All information services can now begin to combine distribution channels, all forms of media can now be edited. I forget to mention, the NeXT also has a cheap CD-ROM. And don't forget the integrated networking, multi-media mail, and services. You can see the possibilities as well as I...it is an exciting time we live in.

Charles

NeXT's Press Release

NeXT ANNOUNCES
FOUR NEW 68040 PRODUCTS

SAN FRANCISCO, September 18, 1990 P NeXT Computer, Inc., of Redwood City, Calif., today announced a family of new computer products, as well as Release 2.0 of its system software.

Specifically, the company introduced four products based on Motorola's 68040 microprocessor: NeXTstation, a more powerful and compact NeXT computer that costs less than $5,000; NeXTstation Color, a 16-bit, PostScript color version of NeXTstation; NeXTcube, an expandable NeXT computer with extremely flexible configuration options that can be used as a network server or high-end desktop computer; and NeXTdimension, a high-end, 32-bit PostScript color solution.

NeXTstation and NeXTcube will begin shipping in early November, with the two color products scheduled to begin shipping in Q1 1991.

In separate announcements, a number of third-party developers introduced new software applications and peripheral products for the NeXT platform.

"We've listened carefully to our current and prospective customers," said Steven P. Jobs, president and CEO of NeXT, "and many have told us that our new products and suite of NeXTstep applications have exceeded their expectations. These customers have also applauded our decision not to quote artificially low prices for diskless or incomplete products. NeXT's low prices are for real, complete, high-performance computers.

"Based on these customer reactions, we expect to announce several large corporate relationships during the coming quarter," he said.

Shared Identity Across the Product Family Constant among all the new products is their support for interpersonal computing: the concept of increasing individual and group productivity by improving people's ability to communicate and exchange information and ideas.

Many of NeXT's decisions governing the design of the software and hardware for its computers were made with interpersonal computing goals in mind. As a result, an impressive number of capabilities are standard on all four new NeXT products. Each NeXT computer includes the following software features:

* *Release 2.0 system software* - Release 2.0 is binary compatible with Release 1.0 and adds new features and capabilities, such as a more graphical Workspace, integrated fax support, plus support for color, DOS floppy disks, international versions of applications, the 68040 microprocessor, and both thin and twisted-pair Ethernet.

Applications written for Release 1.0 run unmodified on Release 2.0, only faster, and Release 2.0 runs on 68030-based NeXT computers. Also, Release 2.0 maintains the outstanding features of Release 1.0, such as the NeXTstep interface, WriteNow, the Digital Librarian searching and indexing tool, and an on-line version of Webster's Ninth Collegiate Dictionary.

* *NeXTstep* - All NeXT computers have NeXT's graphical user interface and development environment, NeXTstep, which makes the power of the UNIX operating system accessible to all users.

NeXTstep also helps software developers

"most highly integrated and sophisticated single processor available today."

speed the development of applications with graphical user interfaces. Any software application that runs on one NeXT computer will run on any other NeXT computer, with absolutely no modification. *This rule applies even to color*: Although color images will not appear in color on a monochrome display, otherwise the application will function fully as designed, without user intervention. Also, an application designed to work in color will do so on any color NeXT machine (16-bit or 32-bit), adjusting automatically to the number of colors offered by the individual system.

* *NeXTmail* - NeXT's electronic mail (e-mail) application forms the underpinnings for interpersonal computing on NeXT computers. NeXTmail allows users to create messages that include text in a wide variety of fonts and styles as opposed to a single typewriter-style font plus graphics, entire documents from any application, voice annotation and music. The result is a form of electronic communication that better supports how people in an organization actually work.

Release 2.0 of NeXT's system software has greatly enhanced NeXTmail by adding the abilities to show color, to adjust to users' personal mail habits and to send legible messages to non-NeXT systems.

* *Display PostScript* - NeXT was the first company in the computer industry to ship a computer incorporating Display PostScript, a unified imaging model that makes images on the screen appear just as they will look when printed. In Release 2.0 of NeXTstep, NeXT has included Adobe Type Manager, Kanji font support, a variety of performance improvements and a more flexible printing architecture.

The new NeXT computers also share certain hardware features, starting with the same microprocessor: * 68040 - The top of Motorola's 68000 microprocessor line, the high-performance, high-speed 15 MIPS 68040 is the most highly integrated and sophisticated single processor available today.

In addition to the memory management unit, the 68040 also includes an on-chip floating-point unit, for extremely fast mathematical calculations. The single-chip design is more reliable and costs less than multichip processors. In overall system performance, NeXT's 040-based computers are at least three times faster than the original, 030-based NeXT Computer.

* *2.88 MB floppy drive* - In response to suggestions for a more convenient and lower-cost software distribution method, NeXT has made a floppy disk drive standard with all its computers. Not satisfied with existing drives, however, NeXT uses a 2.88 MB drive, which can store twice the data of a 1.44 MB floppy drive. The 2.88 MB drive, which is expected to replace 1.44 MB capacity as the industry standard, is compatible with 720K, 1.44 MB, MS-DOS and UNIX-formatted disks.

* *Built-in networking* - All NeXT computers now include both thin and twisted-pair (i.e., telephone line) industry-standard 10 Base T Ethernet networking. Twisted-pair Ethernet is an attractive option for many customers because twisted-pair wiring is already installed in most buildings. Also, the computers support TCP/IP, a popular standard network among academic and government institutions.

* *DSP* - In the new products, additional memory capability can be added to the Motorola 56001 DSP chip, making possible an even wider range of DSP applications that incorporate CD-quality sound, signal and image processing, and voice recognition.

* *MegaPixel Display* - Whether monochrome or color, every NeXT display is of megapixel quality (1120 x 832 resolution), which ensures crisp, clear images. Also, the NeXT monochrome monitor weighs less than the previous model and now has a built-in microphone so users can more easily include voice annotation and other recorded sounds in NeXT applications and documents.

With all NeXT computers, this extremely high level of functionality is standard. From there, each model offers advantages that appeal to different kinds of customers and situations. Depending on their needs, many NeXT customers will use two, three or even all four of the new NeXT products in their organizations.

NeXTstation - With a suggested retail price of $4,995, NeXTstation is the most affordable NeXT computer. This price includes all the basic NeXT features described above, including a 2.88 MB floppy drive and 105 MB hard disk drive, Release 2.0 pre-installed on the hard drive and 8 MB of memory. Options include memory expansion to 32 MB and a 340 MB hard disk drive. Although its price and ease of use put it in a class with personal computers, NeXTstation offers the performance of much higher-priced workstations, with its built-in standard networking capabilities,

multitasking, and large screen size and storage capacity.

NeXTstation is also the most compact NeXT computer. Its single-board, flat case (14.4 inches by 15.7 inches by 2.5 inches high) fits comfortably under the MegaPixel Display. With its magnesium structure and plastic cover, the case weighs very little (14.5 pounds, including the hard disk) yet is strong enough to support large displays. NeXTstation's combination of price and capabilities will probably make it the predominant NeXT model in most departments or organizations.

NeXTcube - NeXTcube offers users the greatest number of options within the NeXT family in terms of expandability, storage, memory and pathways to high-end color. One of its most important uses will be as a network file server.

"We do 2D color better than anyone else"

NeXTcube is based on the one-foot cube that characterized the original NeXT Computer, but it has been updated and improved to reflect the most recent changes in the NeXT product line. Besides the 68040 microprocessor, 2.88 MB floppy disk drive, 105 MB hard drive and all the other standard NeXT computer features, the NeXTcube supports a variety of storage options, including 340 MB, 660 MB or 1.4 GB hard disk drives, 256 MB optical drive or CD-ROM drive. Memory can range from 8 MB to 64 MB. With its wide variety of storage options, the NeXTcube can easily be configured as a low-cost, large-scale network file server, in which case it would include between 16 MB and 64 MB of memory. The optional 256 MB read/write/erasable optical drive provides an excellent option for conveniently storing or transporting large amounts of data, especially graphics and sound; for private, secure storage; and for backing up files.

The entire standard NeXT computer fits on a single board, leaving three NeXTbus expansion slots available on the NeXTcube for adding options such as color, accelerator boards or special-purpose I/O boards.

NeXT in Color: NeXTdimension and NeXTstation Color NeXT's approach to color begins with its NeXTstep software environment and system software. For NeXT, color means full-color, device-independent PostScript; a Color Panel that is highly intuitive and, therefore, highly effective for allowing users to choose the precise colors they want; and software applications that work equally well on all NeXT computers, whether the computer has monochrome, 16-bit or 32-bit color capabilities. For now, according to Jobs, "We do 2D color better than anyone else because we have 32-bit color PostScript on the screen." NeXT has implemented color solutions in two forms: NeXTdimension and NeXTstation Color. Each offers capabilities and a price to meet the color needs of a different segment of users.

NeXTdimension - NeXTdimension raises the expectations for 32-bit color in the desktop computing market. It provides demanding color users with an 1120 x 832 pixel (megapixel), 32-bit, true color display of more than 16 million colors.

To drive this high-quality display, NeXTdimension includes a high-speed graphics accelerator that preserves the feel and performance of the NeXTstep interface. Furthermore, NeXTdimension's media-rich environment integrates a variety of media on a single platform, including real-time full-motion video; still and full-motion image compression and decompression, recording to disk and playback; CD-quality sound; and complete PostScript text and graphics.

Unlike other color systems, NeXTdimension integrates all these capabilities into a single system, where they work together naturally; the user need not coordinate a number of disparate pieces. NeXTdimension was created for professional users who need high-end color in areas such as publishing, graphic arts and design and for individuals who develop and use programs that run in a media-rich environment such as for training, image database analysis and scientific work.

NeXTdimension can be purchased as a board upgrade to a NeXTcube, or as an entire system. The board makes 32 bits-per-pixel true color possible P 24-bit color plus 8 bits of alpha channel (transparency control). It also includes 8 MB of RAM (expandable to 32 MB), an Intel i860 graphics accelerator, video input and output, real-time JPEG video compression and decompression, and fast color PostScript capabilities.

The MegaPixel Color Display that NeXT offers with the system is based on Sony Trinitron technology, and features the same 1120 x 832 high resolution of the monochrome MegaPixel Display, but with more than 16 million colors. To take advantage of NeXT's sound capabilities, NeXTdimension users need a Sound Box, a unit that integrates a speaker, a microphone, headphone jacks and

"lowest priced PostScript laser printer in the industry"

RCA -style stereo output, plus keyboard and mouse interfaces. The Sound Box is also used when connecting the computer to larger-screen or multiple monitors.

NeXTstation Color - As its name implies, NeXTstation Color is a color version of the powerful, very low-cost NeXTstation. NeXTstation Color relies on the same fundamental NeXT system software as NeXTdimension, on a lower-priced platform. NeXTstation Color provides a 16-bit color solution that will meet most people's color needs. Its single board is configured for 12 bits of color plus four bits of alpha channel, for transparency, and the system displays 4,096 colors simultaneously. NeXTstation Color uses the same MegaPixel Color Display as NeXTdimension, with the same crisp, clear resolution; it also uses the Sound Box.

Other Products

Rounding Out the NeXT Family of Systems

Current NeXT Computer owners can now purchase an external 2.88 MB floppy drive, which connects to their computer via the SCSI port. In this way, existing customers can reap the benefits of inexpensive and convenient software distribution. The floppy drive, offered by Peripheral Land Inc. (PLI), can be purchased directly from that company; contact PLI for information. Current owners can also upgrade to the 68040 board and to Release 2.0 of the system software for $1,495. NeXT still offers its 400 dpi (dots per inch) Laser Printer, and has reduced the price to $1,795 (from $3,495). This price makes the NeXT printer the lowest priced PostScript laser printer in the industry, and even more affordable for individuals. The company has expanded its keyboard options to include Kanji, UK English, French and German keyboards.

Price and Availability - The following chart lists the suggested retail prices and expected availability of the four new NeXT products, in their base configurations:

NeXTstation system, $4,995, November 1990
NeXTcube system, $7,995, November 1990
NeXTstation Color system, $7,995, Q1 1991
NeXTdimension board, $3,995, Q1 1991

All NeXT products are available directly from NeXT or through Businessland in North America. Availability of the new products in the United Kingdom through Businessland UK and in Asia through Canon Inc. will closely follow the U.S. ship dates. NeXT products are also available through selected government and vertical-application VARs (value-added resellers); contact NeXT for specific information. Higher education and developer customers can continue to purchase NeXT computers directly from NeXT or through higher education resellers at reduced prices; contact NeXT for specific information.

OOPSLA

From Lighthouse Design.

It's about that time of year: OOPSLA runs from 21 October to 25 October, in Ottawa, Canada. I think we should take this opportunity to gather future-minded folks to talk about life, the NeXT, and everything.

My agenda includes the following items:

- Creating a market for end-user objects. - Extending IB to deal better with end-user objects. - Settling on an inset (cold link) messaging/data standard. - Thinking about new UI tactics (for cold links, hot links, persistence). - Where we think NeXT should go next.

Oddly enough, the NeXT universe is the only place where people can truly expect to make any real-world progress in these realms, so we should look on this as an opportunity to carve out the shape of the future for commercial objects. Exciting, eh?

The OOPSLA program says:

"Several rooms will be available 24 hours a day [for BOFs], from Sunday through Thursday noon. Rooms may be reserved on a first-come, first-served basis by signing up at the Conference Information Desk. There will be no advance reservations for these rooms prior to the conference."

If you're interested, please let me know by e-mail, so that I'll have a rough idea of how many to expect. I'll arrange to get a room once at the conference.

See you there!

Roger Rosner Lighthouse Design, Ltd.
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NeXUS Magazine

NeXUS Magazine, "For Users of Advanced Computers", is soliciting papers/articles/ columns for publication. NeXUS will be published bimonthly beginning with the November/December 1990 issue.

Statement Of Purpose NeXUS provides Information Workers with the knowledge they

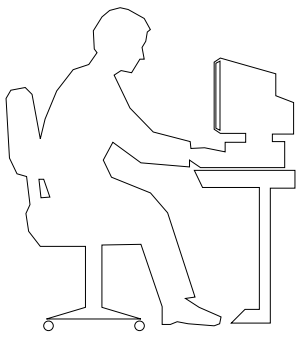
need to make the most productive use of their tools. The aim is to help improve their understanding of the details they need to work.

We present in-depth tutorials on applications for advanced hardware/software platforms in general, and the NeXT computer in general. The subject matter is detailed and presented in a highly technical manner excepting issues which are of abroader interest (i.e., unless there is a great need for it, there will be NO comparisons of hard drives, plotters, and the like, but there will be product reviews).

Format NeXUS is a magazine focused on providing highly-technical information to enable its readers to be effective in Today's competitive workplace. To accomplish this, an article guideline has been established: Each article must provide information about using a specific hardware and/or software tool productively, or must provide information on how to use the computer to fulfill a particular need.

Each issue will have a specific theme of which no fewer than three technical articles will be featured. Each chosen theme will also remain faithful to the article guideline. While there will be reviews and an occasional "Let's look at the whole forest" overview of some topics of interest, articles will generally be substantive.

Calendar The Editorial Calendar for the first six issues are: Issue #1: Putting The Cube To Work/The New Machines Issue #2: Programming for NextStep Issue #3: Desktop Publishing/PostScript Issue #4: Digital Signal Processing Issue #5: The Mach Operating System Issue #6: Databases/Information Systems



Planned articles include: Generating code for the Objective-C run-time mechanism Compiling C Incrementally Code Optimizations for '030/'882 Redefining Pitch Variables For Micro-Tonal Scales User Interface Issues In Display PostScript DTMF Synthesis/Decoding On The 56001 Designing A Usable User-Interface Fundamentals of Object-Oriented Design

Planned Columns include: Programming PostScript Using UNIX Q & A/Tips Calendar, Announcements, & User Groups

Topics of interest include: Interface Builder Digital Signal Processing User-interface design/programming Sound/Music Mach Networking NextStep Display PostScript Sybase SQL Server Groupware programming Tutorials & tips on specific applications (bundled or not)

If you have any unpublished articles you would like to have published, are interested in writing an article, or would like to do a column, please contact

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ISDN Today

Due to the flurry of development and product announcements in the last several months regarding the Integrated Services Digital Network and the services it can provide, I thought an ongoing column on the devices and applications evolving in this arena might interest my friends in RMNUG as much as it interests me.

While I had hoped to discuss some experiments I plan to perform on 2 Basic Rate Interface lines I am having installed for test purposes, a USWest miscommunication has delayed the installation of the lines so I guess that will wait until next month. In the mean time maybe a quick overview of the two ISDN interfaces might be a much better way to start out. Hopefully everyone has at least heard the term ISDN, if you haven't do not be afraid to e-mail me any questions and I'll do my best to answer them, your feed back will help immensely to direct this column so please don't be shy. (dcook@NYX.DU.EDU).

The Integrated Services Digital Network is the current embodiment of the ongoing evolution of the worlds communication infrastructure. Originally devised by AT&T in the sixties during the Kennedy administration long before personal computers it was decided that an ongoing process of enhancing the world's telecommunication technology would be necessary to provide the number and type of services necessary to support the economies of Man.

While mankind has made dramatic advancements in it's use and understanding of technology the ISDN direction has evolved as well. The basic role of the ISDN network is to extend the digital interface further out in the network until a fully digital network is realized thus replacing analog signalling for

"undreamed of possibilities with a NeXT"

voice, modem and video communication.

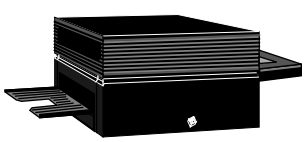
The two methods being pioneered today are the PRI (Primary Rate Interface) and the BRI (Basic Rate Interface). The PRI is an integration of the two types of signalling that have been used for Long Distance calling for over twenty years.

Basically when a call is placed an X.25 packet is initiated to contact the receiving end Central office to verify that the called party is valid once this is determined both ends work simultaneously to form a 64Kbps digitized channel end to end connection for voice communication. In a similar fashion a PRI line consists of 24 64Kbps channels Time Division Multiplexed into a 1.54Mbps data stream with 23 of the channels used for voice or 56Kbps data connections (8Kbps are used for overhead on the Data Connections) and the remaining 64Kbps channel used for call setup, network signalling and User Access.

Conversely the BRI line consists of two 64Kbps channels usable as voice or 56Kbps data connections and a 16Kbps channel used for call setup, network signalling and User Access. While the PRI line has numerous products from everyone from PBX vendors to LAN Manufacturers the BRI Market is as yet barely touched, Sure there are probably 30 PC boards available if you can write your own C code and build your own applications, but what if you use something else maybe more advanced like a NeXT, shouldn't you still be allowed to communicate and transfer data at 56Kbps and beyond? Of course you should, and there are available today numerous ways to take advantage of the ISDN network wether you have a NeXT cube or a cash register.

In the Coming Months we will look a little closer at how to obtain a 144Kbps BRI gateway into your home or office for well under $100.00 a month, we'll look into the really slick voice features that come with a BRI, We'll investigate how to connect a NeXT to a BRI line and what to expect when we do, and maybe look at some of the before undreamed of possibilities available with a NeXT and an ISDN Basic Rate Interface.

David Cook



NeXT Classroom

From Conrad:

If you are interested in a NeXT courseware discussion group or if your customers are, please read on. The purpose of the group is to provide a discussion forum for those that have used the NeXT in a teaching environment and those that wish to. Certainly the group should encompass applications and experiences involving NeXT usage in classrooms. There should be a variety of diverse and inventive uses of the NeXT in teaching use.

**The mechanics of joining the group: There has been set up "next-classroom" at Gustavus Adolphus College as a mailing list on MAILSERV@GAC.EDU.

To subscribe to the list:

* send a message to "mailserv@gac.edu", or "mailserv@gacvax1.bitnet"

* the subject of the message is ignored.

* the body of the message should contain: subscribe next-classroom "full name"

(or) help where "full name" is the real name of the person wishing to subscribe. Help would send back more information on using mailserv.

* mailserv will send back a message confirming the addition of your address.

To send mail to the list:

* send your letter to "next-classroom@gac.edu" or "next-classroom@gacvax1.bitnet"

Problems:

* send your problem to "postmaster@gac.edu" or "postmaster@gacvax1.bitnet"

thanks, conrad

P.S. (The advantage of this mail server is that it allows those on bitnet - IBM sites- to participate easily.)

P.P.S A note from Dan - the administrator of the group... Gustavus has an anonymous FTP site, at FTP.GAC.EDU (IP address 138.236.10.1). There is a submissions directory where people can leave files. I would then ask that a person send me a letter (to either FTP@FTP.GAC.EDU or dan@gac.edu) or leave and ASCII doc file so that I know who submitted the file, and what it does. I can also make the files in the anonymous FTP site available by mail through mailserv, for those who only have mail.

"Lotus's design ideas are truly innovative"

IBM Announcement

IBM To Support
NeXTstep Software Environment

WHITE PLAINS, N.Y. -DJ- International Business Machines Corp. said it plans to adopt the new release of NeXT Computer Inc.'s NeXTstep application software development and user interface environment. IBM said in a press release that enhancements in NeXTstep Release 2.0, including color capabilities, the more powerful Workspace Manager and expanded European language support, give it broad appeal among IBM customers and software developers. IBM said it has worked with NeXT since 1988, with cooperation that has included software licensing and patent licensing agreements.

Golden Nugget Award

Just an update on the Golden Nugget Award.

As you may remember from last month we had an opportunity to apply for a grant from NeXT for up to $5000. We formally submitted our proposal on the deadline, but the next day we received a memo from NeXT that stated that the deadline had been pushed back a few days. The deadline extension was allowed due to the large number of complaints that were sent by various Users Groups. Some which were apparently just started this month.

We were to hear which groups had won by October 1st, however because of the extension of the deadline, the announcement has also been moved back to an undetermined time. We expect the winners to be announced sometime in October, but we have been unable to confirm this.

September Meeting

The September meeting was held at the Businessland Offices in downtown Denver. We would like to thank Businessland for their participation. They also provided food and refreshments for the meeting. It is great to have Businessland involved with our group.

Special thanks should also go out to all the members who brought their NeXT's to the meeting. It was great to have the opportunity to try out several different programs.

For those of you who could not make it to our "user's night", we will be have another "user's night" in a few months.

From The Editor

What a month! It appears that NeXT is setting the pace for the rest of the industry. The response to the new computers has been outstanding.

My favorite headline on the announcement came from USA Today: Skeptics surprised by Jobs' NeXT trick. The media has given some very favorable reviews to the new NeXT's.

If you get a chance, read the October issue of BYTE magazine. They give a review of Lotus' Improv. Probably the most telling sentence in the article is "Improv is *much* easier to use than to describe." This is a product that is not only easier to use than traditional spreadsheets, it is more powerful. It *is* hard to describe Improve and to do it justice.

The reviewer (Tom Yager) also states in the article "In all, Improv knocked me out. It is the first *new* program that I've seen in months, and Lotus's design ideas are truly innovative ... if you sit down to use a spreadsheet five years from now, chances are it will have a lot in common with Improv."

I have also been following the comments that are posted on Compuserve and other BBS's. There has been a lot of excitement on the boards about the new NeXT's. Two current Macintosh developers stated that they are planning to switch over to become NeXT developers.

Aspects of the new NeXT's that received the most attention were the real time video compression and decompression and the fact that you can now buy a 15 MIP machine for only $5000.

I have made a formal request to Compuserve to start a forum dedicated to NeXT computer's and software. Compuserve has over 600,000 members and already has several computer related forums such as Amiga (3), Apple/Macintosh (12), IBM (10), Epson, Hewlett Packard, and Tandy (3). Several forums dedicated to particular pieces of software are also available, but nothing for NeXT users and developers.

I am still at the paperwork stage of the application process, but I am hopeful that they will accept. I will keep you posted

Special thanks goes out to Conrad Geiger at NeXT who provided much of the information that is in this issue, and. to Dave Cook, David Hieb, Brad Green, et. al. for their articles. This newsletter would be nothing without their valued contributions.

NeXT User Groups.

This public service message from NeXT was recently posted to the comp.sys.next newsgroup.

There are now forty-two NeXT user groups in existence, encompassing three countries and a multitude of states:

“There are now forty-two NeXT User Groups”

International

British Columbia	(lionel_tolan@cc.sfu.ca)
Quebec	(paulhus@calvin.cs.mcgill.ca)
	(phume@next.com)
Japan	(nexus-office@etl.go.jp)

United States

Alaska	(fsapm@alaska.bitnet)
Arizona	(jsoft!ggf@uunet.uu.net)
	(layhe@rcnext1.rc.arizona.edu)
California	(bang-request@meta-x.stanford.edu)
	(erone%pumpkin@hub.ucsb.edu)
	(leo@emerald.jpl.nasa.gov)
	(plowe@ucrac1.ucr.edu)
	(mahoney@grafix.cse.csulb.edu)
	(david@ece.ucsd.edu)
Colorado	(davehieb@boulder.colorado.edu)
District of Columbia	(joel@next.com)
	(pitre@ccf.nrl.navy.mil)
Georgia	(erica%kong@gatech.edu)
Illinois	(henderson@mcs.anl.gov)
	(parod@baris.acns.nwu.edu)
Massachusetts	
Michigan	(bonduku@msu.bitnet)
Minnesota	(mtie@carleton.edu)
Missouri	(71511.125@compuserve.com)
New Mexico	(jnjortn@cs.sandia.gov)
	(dmb@lanl.gov)
New York	(lissie!treed@uunet.uu.net)
Ohio	(dyer-c@osu-20.ircc.ohio-state.edu)
Oregon	(jasmerb@ohsu.edu)
	(leach@satchmo.oce.orst.edu)
Pennsylvania	(ibug@music.alleg.edu)
Texas	(pensoft!lorne@cs.utexas.edu)
	(lindahl@evax.arl.utexas.edu)
	(glover@uh.edu)
Utah	(tarbet@chemistry.chem.utah.edu)
Washington	(corey@cac.washington.edu)
	(gerkman@wsuvm1.bitnet)

Other NeXT-Related User Groups

Mathematica Special Interest Group	(mathgroup-request@yoda.uiuc.edu)
Frame Users Network	(framers-request@drd.com)
NeXT Music SIG	(next-music-request@usc.edu)
Network and Security Management	(next-lab-request@cs.ubc.ca)
Programmers SIG	(next-prog-request@cpac.washington.edu)

The above information was compiled by Conrad Geiger of NeXT, Inc. and reassembled by Declan McCullagh.

Internet Site Information

The following information is from j.cc.purdue.edu:~ftp/pub/next/ARCHIVES. We will continually provide the latest information on which sites are currently active and what you can expect to find. Please note the suggested time frames for each site.

NOTICE: J.cc.purdue.edu is no longer the authoritative Purdue archive # These archives are being moved to sonata.cc.purdue.edu # (128.210.15.30) and nova.cc.purdue.edu (128.210.7.22) # Send questions to archive-management@cc.purdue.edu and # submissions to next-archive@cc.purdue.edu # # gerrit, 7/31/90

Purdue Archives (Midwest) FTP = nova.cc.purdue.edu 128.210.7.22 pub/next 1800-0700EST FTP = sonata.cc.purdue.edu 128.210.15.30 pub/next 1800-0700EST

Oregon State Archive (West) FTP = cs.orst.edu 128.193.32.1 pub/next 1800-0700PST

Maryland Archive (East) FTP = umd5.umd.edu 128.8.10.5 NeXT 1900-0800EST

Purdue Email Archive (Midwest) EMAIL = archive-server@cc.purdue.edu (subject of help for info) 1800-0700EST

Other archives

See also the file pub/anon-ftp on cc.purdue.edu for a much larger set # of general interest archives. This list tries to sum up a few of those # archives which are of particular interest to NeXT users. If you would # like your archive site listed here send email to next-archive@cc.purdue.edu.

Sound stuff FTP = winnie.princeton.edu 128.112.128.180 pub 1800-0700EST

Mac related stuff FTP = sumex.stanford.edu 36.44.0.6 pub 1800-0700PST

GNU stuff FTP = prep.ai.mit.edu 18.71.0.38 pub/gnu 1800-0700EST FTP = plethora.media.mit.edu 18.85.1.50 1800-0700EST

XNeXT, athena stuff FTP = athena-dist.mit.edu 18.71.0.38 1800-0700EST

PostScript stuff FTP = nic.stolaf.edu 130.71.128.8 pub/ps 1800-0700EST

Tiff stuff FTP = ucbvax.berkeley.edu 128.32.133.1 pub/tiff 1800-0700EST

T - an object oriented dialect of Scheme FTP = wheaties.ai.mit.edu 128.52.32.13 pub 1800-0700EST

KJV Bible FTP = cs.ubc.ca 137.82.8.5 tmp/Next/LocalLibrary/Liturature /Bible 1800-0700EST

Random stuff FTP = sutro.sfsu.edu 130.212.15.230 pub 1800-0700PST

FTP = eesun1.arl.utexas.edu 129.107.2.51 public/NeXT 1800-0700???

FTP = sachiko.acc.stolaf.edu 130.71.128.17??? 1800-0700EST

The following shell script is an alternative to having to manually ftp by hand. It basically supplies the correct information to the standard input for the ftp program. You can execute the script (with /bin/sh) during off hours with the at(1) or cron(1) commands. Make sure you edit each line as is necessary. This example ftps the binary file NeXTBibleReview.wn located in the ~ftp/pub/next/buzzings directory of the cs.orst.edu site.

>>>>>----------<<<<<CUT HERE>>>>>----------<<<<<

ITE=cs.orst.edu

ftp -n $SITE <<PTF

user anonymous davehieb@boulder.colorado.edu

cd pub/next/buzzings

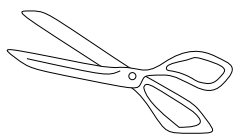
binary

get NeXTBibleReview.wn

bye

PTF

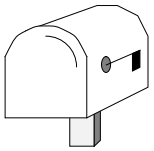
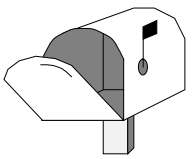
>>>>>----------<<<<<CUT HERE>>>>>----------<<<<<



You also might want to know about the comprehensive list of anonymous ftp sites that is published by Jon Granrose. This listing is available via anonymous ftp from pilot.njin.net (128.6.7.38) and is also included in each issue of NeXTAnswers. In case you miss it, here is the reminder that Jon includes:

REMINDER: Anonymous FTP is a privilege, not a right. The site administrators for the sites listed below have made their systems available out of the good- ness of their hearts. Please respect their wishes and restrict your FTPing to non-prime hours (1900 - 0600 hours local time for the site). This is especially true for sites not in your country. Please keep that in mind when you are FTPing. None of us want to see sites start to close down because a few are being inconsiderate.

rmNUG Mailing List

If you feel that you don't want to have your information published or the information is inaccurate, please feel free to contact me.

Name	Company	Phone (voice)	email address
Jim Alexander	USWest	(303) 889-6426	jima@uswest.com
Richard Beach	CSM		rbeach@mines.colorado.edu
Dan Beyers	Motorola	(303) 337-3434	
Steven Boker	Data Transforms	(303) 832-1501	datran2!smb@uunet.UU.NET
Ed Boring	CSU	(303) 491-7653	boring@euclid.math.Colostate.EDU
Dave Bowdish	Designer Documents	(303) 922-4893	73340.2146@compuserve.com
Mike Bush	USAF Academy		
Steve Coffin	US West		scoffin@uswest.com
David Cook	Cook Commun.	(303) 691-COOK	nyx!dcook%isis.uucp@nike.cair.du.edu
Robert Dahlen	DU	(303) 871-4385	bdahlen@du.EDU
Glen Davis	UCAR	(303) 497-8643	davis@unidata.ucar.EDU
Don Dazlich	CSU	(303) 491-8585	dazlich@erehwon.atmos.Colostate.EDU
S. DeAlwis	CU	(303) 492-0511	dealwis@Colophys.BITNET
John Devlin	Prud	(303) 750-5222	
Joe Dreitlein	CU(PHY)	492	jfd@pprince.Colorado.EDU
Barbara Dyker	CU	(303) 530-5275	Barb_Dyker@Amaze.UUCP
Kimberly Evans	CU		
Shelly Fields	USGS	(303) 236-5505	
Rich Fozzard	NOAA		fozzard@alumni.Colorado.EDU
Greg Friedman			
Conrad Geiger	NeXT	(206) 454-6398	Conrad_Geiger@NeXT.COM
Aaron Gordon	CSM	(303) 273-3868	agordon@slate.mines.Colorado.EDU
Jacob Gore	Gore	(303) 696-7893	jacob@blackbox.Gore.COM
Brad Green	CU/NEXT	(303) 786-9371	Brad_Green@NeXT.COM
Robert Gregory	USWest	(303) 733-6573	
Frank Hadsell	CSM		fhadsell@slate.mines.Colorado.EDU
David Hale	CSM		dhale@slate.mines.Colorado.EDU
David Hieb	CU	(303) 492-4316	boulder!kodiakthorn!davehieb
David Hieb	CU	(303) 492-4316	davehieb@boulder.Colorado.EDU
Al Humphrey			
Robert Gregory	US West	(303) 733-6573	
Kass Johns		(303) 594-4100 (2477)	
Bob Johnson	Martin	(303) 790-3641	
Warren Jokinen		(719) 637-1479	73437.3500@compuserve.com
Andrew Kessler	CU(ECE)	(303) 492-1290	kessler@boulder.Colorado.EDU
Chriss Koch	Ampex	(719) 570-3233	boulder!agcsun!soul!song!Chriss_Koch.COS_ENG
Kathleen Lamb	CSM	(303) 273-3436	klamb@slate.mines.Colorado.EDU
Adrianne Link	NCAR	(303) 447-1223	adrianne@ncar.ucar.EDU
Joe Lounge	UNC	(303) 351-2807	
Mehran Majidi	CU	(303) 786-1794	majidi@tigger.Colorado.EDU
David Menges	US West		boulder!uunet!uswat.uswest.com!dcm
Eric Mueller	CU		
Joan Nadue	US Geo. Survey	(303) 236-5504	
Abdullah Naim	US West	(303) 938-8685	naim@uswest.com
Ed Narvaez	Businessland	(303) 369-2726	
Bill Nelms	Ampex	(719) 570-3284	
Charles Noren	NCAR		boulder!ncar!dinl!noren
Douglas Pattie	CSU/NeXT	(303) 491-6477	dpattie@NeXT.COM
John Pierce	NeXT	(303) 694-6700	John_Pierce@NeXT.COM
Dave Randall	CSU	(303) 491-8474	randall@ncar.ucar.edu
Mark Richards	Bsland	(303) 671-0676	
Wayne Rogers	CU		rogers@spot.Colorado.EDU
Joel Rosenblum	DPI	(303) 733-8158/721-8926	
Ray Rosich	Hughes	(303) 341-3814	
Lisa Saltzman	US West	(303) 896-9533	
John Shive	Hughes	(303) 341-3207	
Karl Sierka	NCAR	(303) 497-1338	sierka@ncar.ucar.EDU
Doug Simons	Thoughtful Sftwr	(303) 221-4596	
John Steele	CSM	(303) 273-3663	jsteele@matchless.mines.Colorado.EDU
Julia Taylor	USGS	(303) 236-5453	
Coy Toavs	CU		toavs@tramp.Colorado.EDU
Chase Turner	CU	(303) 442-4711	chase@boulder.Colorado.EDU
Bruce Wood	CU	(303) 492-8172	wood_b@Colorado.BITNET
Dick Valent	NCAR		valent@ncar.ucar.EDU
Derek Wilson	CSM	(303) 273-3986	dwilson@slate.mines.Colorado.EDU
Beverly Young	FRAME	(303) 770-9404