

THE UNIVERSITY *of York*  
Computing Service

# key notes

VOLUME 24 NUMBER 5 APRIL - MAY 1998

## Microsoft on the Ropes

Can the software giant defend itself against charges from the US Department of Justice and the EC?



*Also in this Issue:*

york.announce

New software

New PCs in Alcuin

Library CD-ROMs over the network!

# keynotes

Volume 24, Number 5

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## From the Editor

The year progresses apace, and we have many things to tell you about.

The Windows 95 service has been updated again—there's a lot of new software to try out. We also have an article about upgrading to Windows 95, if you haven't done so already. Plus we have many other articles, covering the Millennium, administrative computing, and CD-ROM networks. Quite an issue!



Ah yes, Microsoft. Can't live with them, can't compute without them. But the corporation has come under increasing scrutiny over the last few months over its practices concerning its Internet browser, Internet Explorer. Our feature story covers this, and gives you an idea why the issue is so very important.



Finally, a note: *Keynotes* will be published only once during this summer. We have many things developing in the Computing Service, but they will not be ready until later in the summer. Expect a large issue then!

*Ray Drainville*

## Colophon

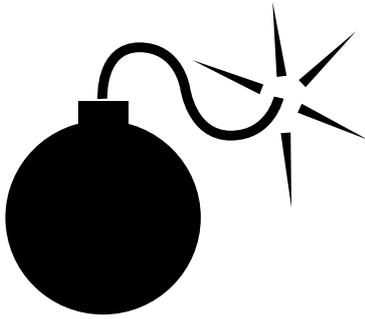
The type in *Keynotes* consists of Palatino (the University's official font) at various point sizes for text and Helvetica 95 Black at various point sizes for headlines, sidelines, and pullquotes.

The content for *Keynotes* is assembled digitally with the following tools: Adobe Pagemaker 6.5, Adobe Illustrator 7.01, Adobe Photoshop 4.01, Adobe Streamline 4.0; MetaCreations Vector Tools; Corel WordPerfect 7.0; Microsoft Word 6.01 and 7.0.

Artwork was created on an Apple Macintosh computer, and everything was thenceforth assembled on a Viglen PC running Windows 95. The material was printed by the University of York's Printing Unit.

This issue of *Keynotes* was assembled by Ray Drainville; if you have any questions or comments, feel free to contact him by e-mail at [information-officer@york.ac.uk](mailto:information-officer@york.ac.uk).

2000



### Millennium News

*Mike Jinks* keeps you up-to-date about the Y2K problem at the University

As mentioned in a previous article of *Keynotes*, the University has set up a Millennium Working Group. This has met on several occasions and has collected information from suppliers of both hardware and software on the compliance of their products. A digest of this information will be made available on the University's web pages with links to more detailed information where appropriate. Provision of this information is only part of a general awareness campaign to be mounted by the group to ensure that everyone is aware of the potential consequences of systems failing to be Millennium compliant. In addition to the web pages, the group will advertise some general seminars and provide advice and guidance for Heads of Department.

Millennium compliance is not simply a computing issue. The Directorate of Facilities Management are investigating the compliance of many systems with embedded processors, and the Registry and the Finance Office are investigating some of the main processes in their respective areas. We will continue to provide further information both in *Keynotes* and on the University's web pages as it becomes available.

### Staff News

*Mike Jinks* tells of staff changes

Trevor Bolton left the University at the end of March to take up a post at Sheffield Hallam University. Trevor has been with the University for 21 years, working initially as a programmer in the Finance Office and finally as Head of the MIS Group within the Computing Service. During this period he has seen a major growth in the use of computer systems to support administration of the University, and has been responsible for many of the developments undertaken over the years. In addition to support of the central administrative departments, Trevor has been involved with academic departments and with the Library in the early days of Library systems.

Trevor has thus had a major impact throughout the University in the several posts he has held, and we wish him every success in his new role at Sheffield Hallam University.

### Information Desk news

*Brian Souter* presents some good news and better figures

#### Bank Holidays

The Computing Service building, including the Information Desk and entrance lobby, will be closed on the Early May Bank Holiday (4 May) and the Late May Bank Holiday (25 May). All computer systems will be left running with classroom facilities available as normal.

#### Alcuin College Study Centre Room A/140

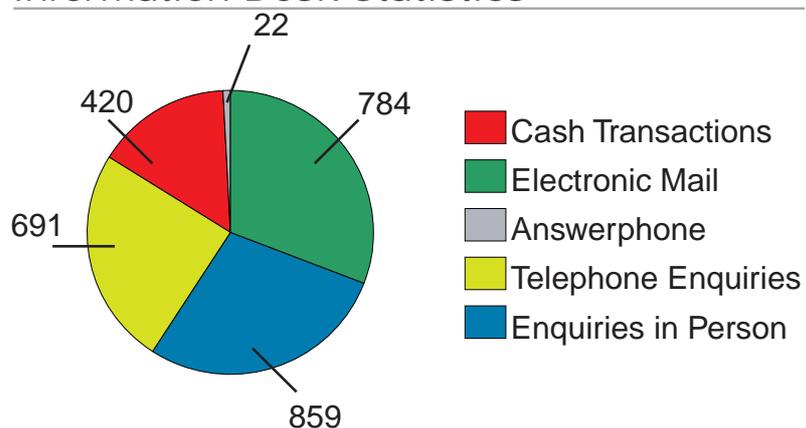
The new multimedia PC facility in Alcuin College, room A/140, opened in the first week of the Easter Vacation, only slightly behind schedule. Once again, we apologise for any inconvenience during the upgrade, and remind you that the scanning equipment from A/140 is now located in Langwith College, room L/051.

Room A/140 is non-bookable and open twenty four hours per day, seven days per week. It is not a teaching room but intended as a study centre, forming part of the library facilities in Alcuin College. We ask you to respect other users by being quiet at all times. **Game playing is not allowed and anyone browsing the web should give way to anyone wishing to do serious academic study.**

#### Information Desk Improvements

Recent staffing changes involving the merger of the computer operators and the information desk staff are reflected in recent statistics for the Information Desk, showing some very encouraging improvements. The total number of abandoned calls during February were down to 201, which compares favourably with 512 for January. Also, the number of calls answered within 30 seconds was up from 53% in January to 70% in February. Although the desk staff dealt with 691 telephone enquiries during February this was only a small part of the total, as shown.

#### Information Desk Statistics



Figures shown are the most recent available, 02/98.

## ATHENS3—Access to On-Line Data Service

*Chris Joy* tells you about the new authentication system

The University library subscribes to several on-line data services such as BIDS, EDINA and MIDAS. Usernames are currently provided by the Computing Service Information Desk. All access to these data services will change for the next academic year and this is an early warning notice to these changes.

A new authentication system, called ATHENS3, has been developed to allow users to have a personal username for access to these services. This is to allow a single username to cover many data services and allow new data services to come online with the minimum of problems.

To accommodate this change at the national level, the Computing Service and University Library are currently rationalising the procedures for requesting usernames and using these data services. A web-based procedure is being developed to be simple and fast, with new usernames becoming active 24 hours after request. Further information will be available in a summer issue of *Keynotes* and through library documentation. It is expected that the new procedure for requesting personal usernames will become live at the start of the next academic year. Old style usernames will no longer be usable after October 1998 so all current staff and students will have to request a new username.

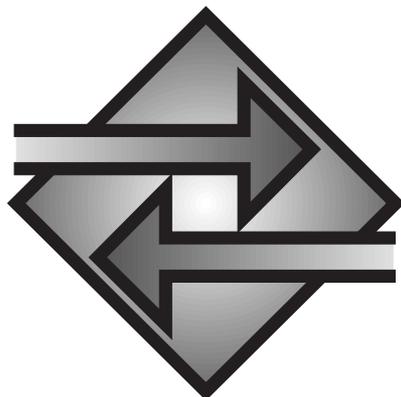
## Internet firewall

*Chris Joy* tells you about additional security at York

In conjunction with the rollout of the YHMAN initiative at York, the Computing Service would like to give an early warning notice to the implementation of a new Internet Firewall. This system will provide additional security to campus computer systems and will be installed over the summer months subject to appropriate funding being available.

Computer systems remain the cornerstone of departmental research and administration and the protection of these systems from outside malicious attack is a complicated issue. As part of a continued attempt to maintain the investments in research and teaching at York, the Computing Service plans to augment current security systems with a new internet firewall. This will allow a suitable level of protection from external attack for those campus systems which are currently vulnerable.

There is a serious implication for all the York-based NT and UNIX systems which are actively used across JANET and beyond. External access to a system will have to be explicitly enabled by the Computing Service and the procedures are currently being considered. Further information will be available to all departments in a future issue of *Keynotes*. However, if any department wishes to discuss the implications of this change, they can do so by contacting Chris Joy ([cj8@york.ac.uk](mailto:cj8@york.ac.uk)).



## Changes to Dialup Service

*Robert Demaine* tells of changes to the system

From its modest beginnings in late 1995 the dialup service has proved an increasingly useful tool for those users wishing to gain occasional access to the University network and the Internet while away from campus facilities.

In recent months, despite the installation of some additional lines, the service has come under increasing strain due in part to a minority of users who have used it in a way contrary to the spirit in which it was introduced. As a result, lines have been tied up for hours at a time causing frustration and inconvenience to others wishing to use the limited resources available.

In view of this, from next academic year dialup access will be restricted to staff and postgraduate students only. Undergraduates wishing to connect to York over dialup should consider a subscription to the JANET National Dialup Service (JNDS) operated by U-Net. Full details can be found at <http://www.u-net.net/services/janet>.

## Offensive E-mail

*Ray Drainville* warns of a delicate issue

Recently the Computing Service was contacted by an individual outside of the University who had received offensive electronic mail from a student on campus.

The University frowns upon the abuse of e-mail or the World-Wide Web in any form, but in the case of offensive e-mail, the damage can be much more onerous. Any individual at the University who avails himself or herself of the network tacitly agrees to comply with the SuperJANET code of conduct—which can be viewed on-line at <http://www.york.ac.uk/services/cserv/offdocs/juse.htm>. Moreover, some types of offensive messages can place the individual within the reach of a number of laws. Finally, offensive postings of any kind bring the University into disrepute. Please be careful about what you say.

# Upgrading to Windows 95

*Doug Moncur tells you what to do*

The existing campus pcnfs service based around Windows 3.1 is living on borrowed time and is unlikely to survive the millenium due to year 2000 compliance issues on what will then be a product who's development stopped several years earlier.

This summer will see the withdrawal of Windows 3.1 from Computing Service managed classrooms—departmentally-provided facilities may continue to offer Windows 3.1 for a while longer, and you may be thinking that it might well be time to bite the bullet and go to 95. But are you making the right choice?

If you look at the IT supplements of most of the quality papers they're full of news about Windows 98, NT workstation and Hydra.

## Windows 98

Windows 98 is planned as an operating system for the home user and is very tightly coupled to Internet Explorer and the web. It is very unlikely that the Computing Service will deploy Windows 98.

## NT workstation

A fine operating system, but it does require a more powerful machine than 95. The current version is version 4, and we have a tentative plan to deploy a classroom service

based around the next version, version 5, in summer 1999.

We are also discussing what we may do regarding office machines in the future but as yet have no plans, tentative or otherwise.

## Hydra

Hydra is Microsoft's multi-user NT product where you can run a virtual PC on a server from some other device—a bit like being able to run Windows on a terminal. The device could be an old slow PC or even a Macintosh, and the client software has even been licensed to Psion and to Nokia—imagine being able to run MS-Word from your phone!

Seriously, it's a product that would be ideal for either reusing older slower PCs or for offering a way of connecting remote users, eg those using a laptop over a dialup link or working from home a connection to a standard software environment.

Such a technology also has implications for distance learning.

Currently we have no plans regarding Hydra but hope to carry out a proper investigation this summer.

However, it is important to realise that computing power has to come from somewhere and that if this

was to be deployed in the University there would need to be significant investment in servers.

## So where does that leave us?

This summer, the only place to go to is 95. Whatever happens you will have to upgrade by summer 1999 or else face carrying on as an unsupported connection after the withdrawal of the Windows 3.1 service. Unsupported really does mean unsupported, whereby our only responsibility is to ensure basic connectivity to the campus network.

## What do I need?

To be able to upgrade to Windows 95 the absolute minimum you need is a 4DX2-66 PC with 16MB of RAM and 200MB free on the hard drive.

Software tends to be written with a Pentium machine with 32MB RAM in mind, so it is to be empasised that this is a bare minimum, and the performance of some applications may be less than you expect. Further, as software is updated you may see a further drop off in performance on your 486.

It's preferable if you have Pentium based machine with 32MB RAM.

If your machine is less than a 4DX2-66 you should seriously consider replacing the machine, and if your budget will stretch to it, you should consider replacing all your older 486 based machines and older Pentium-based machines by summer 1999.

## PC Classroom Windows 3.1 support

*John Illingworth clarifies the issue*

Like Orson Wells' "War of the Worlds" broadcast, the headlines for our article on the removal of Windows 3.1 from PC classrooms spread fear and panic throughout the campus. However, the truth, though out there, is really not so bad.

The PC classrooms referred to in this statement are are D/114, L/117, G/169, K/120 and W/218 only. They all currently offer a choice of Windows 3.1 and Windows 95. From October

1st 1998 there will no longer be such a choice. All the PCs will run Windows 95 only.

If you have Windows 3.1 teaching software currently running only on the Windows 3.1 system and you would like it moved onto the Windows 95 system, first endeavour to discover if there is a later, Windows 95 version of your software, and then contact the Computing Service.



## MIS News

*Kay Robinson* brings you up-to-date with the administrative system

### MIS Surgery

The Surgery times have recently been amended and the new times are as follows:

Wednesday 14:30 - 16:00  
Friday 09:30 - 12:30

The Surgery is held in Heslington Hall, Room H/B40. (H/B40 is located in the same corridor as the Print Unit.) During these times a member of the MIS team will be available to help with any questions or suggestions that you have regarding administrative computing e.g. MAC, reports, Data Warehouse. We will be pleased to see departmental staff—this is not just a service for central administration.

### User Accounts

We are in the process of standardising ADVAX user accounts with those used by other computing facilities in the University. Some ADVAX users still have accounts in the old format, for example, BLOGGS\_J. The standard which is in use now is, for example, JB1. We intend to convert all accounts in the old style into the newer style at the end of April. Use of the new style will make administration of user accounts easier. Those ADVAX users who will be affected will be contacted individually to be informed of their new account name and password.

### Upgrades

The next upgrade to the MAC system will take place at the beginning of June. Exact dates have yet to be finalised—more details will follow in the next issue of *Keynotes*. Data Warehouse Training MIS are holding a number of training courses jointly with the DBA's of the Finance, Estates and Student Record MAC modules. The courses scheduled for May and June are now full but we are intending to operate an ongoing program of training so look out for details of more courses in the autumn term. We aim to keep the class size small so that the needs of individual attendees can be addressed. We will also be sending out a pre-course evaluation of training needs to those people who are registered for our current courses.

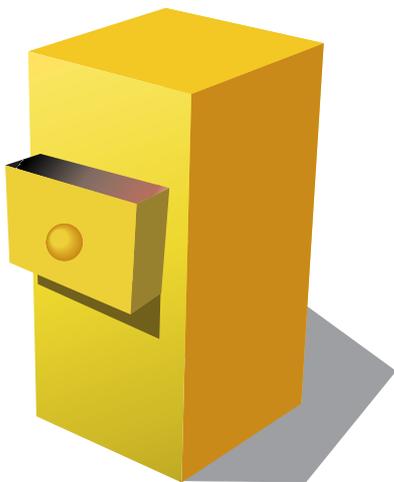
### Hardware Upgrade

Performance on the ADVAX computers has been very poor for some time due to the number of users who regularly log on to the system and the volume of data which the MAC system now contains. The poor performance has also been hindering the development of improved data entry and reporting facilities. To this end, Computing Service has purchased replacement hardware which we expect will deliver a significant improvement in performance and see the MAC system through the next three to five years. The new hardware consists of two Digital AlphaServer 4100 5/466 with disk storage consisting of a Raid 5 Array. As well as additional processing capability the new hardware offers an in-

creased amount of disk storage and greater resilience.

We have also purchased an uninterruptible power supply to enable the system to shut down properly following power supply failures—this is something which we currently do not have with ADVAX. The new hardware will be installed and configured during April and after a period of extensive testing we aim for the new system to “go live” before the end of the current financial year.

As part of our software testing program we will be conducting millenium compliance testing. The new computers have been named ALPHA1 and ALPHA2—look out for more details of the installation project in the next issue of *Keynotes*.



# York announces york.announce!

Mike Brudenell tells you about the latest news group at York

Within the Computing Service we have for a long time used locally-devised ways of informing our users as they login of news and changes affecting the central computing facilities. Those with long memories may recall the “news system” on the old VAX/VMS service. This was quite advanced in its ability to track which articles individuals had already read and so not show them again: a feature sadly lost in the system we now use.

The login news and notice system has never been intended as a general news system for the University, although we have on occasions allowed some departments to post important messages on it.

Over recent months it has become increasingly apparent that ever more people are realising the value of being able to make announcements promptly through the electronic medium. Indeed the number of articles sent to the Information Desk from other departments has grown steadily, to the point where the system — really designed just for the Computing Service’s own use — is being overrun.

What is really needed is a review of the ways in which the University as a whole can distribute announcements quickly, easily and efficiently. And indeed we understand that over the next few months the Administration will

be doing just this.

In the meantime we are offering to place any announcements from departments in the “york.announce” newsgroup.

A newsgroup can be thought of as a bulletin board, where people can display messages to be read by others. The york.announce newsgroup was set up a couple of years ago to hold messages from the University, departments and others. We are now placing greater emphasis on this and are using it more proactively to help us through this interim period whilst the review takes place.

So if you want to know what’s happening where check york.announce.

And if your department has something to announce — events, Open Lectures, etc — please feel free to send in an announcement for the york.announce newsgroup. If you are familiar with posting articles to Usenet News you can send it direct to york.announce, where it will appear after it has been accepted by a member of the Computing Service. Alternatively you can contact the Information Desk and ask them to insert the announcement on your behalf.



## Checking york.announce

One of the advantages of using a newsgroup to hold announcements is that there are many ways of accessing the information. Indeed many of them will, like the old VAX/VMS news system, keep track of which articles you have already read and either hide or de-emphasise them.

## Windows 95 users

From the **Start** menu select **Local News** to see to a Web page with Computing Service news; then click the “york.announce” link.

## For UNIX users

Give the command “news” (for terminal users) or “xnews” (for workstation users) to see to a Web page with Computing Service news; then click the “york.announce” link.

## For Web browsers

At the main University home page select the Information for Staff/Current Students link as appropriate. Then follow “General University announcements (york.announce)”.

## For people familiar with Usenet News

Subscribe to the york.announce newsgroup within your news reading program, and check it when you read your other newsgroups.

If you would like to know more about Usenet News the Computing Service publishes a Quick Reference Guide entitled “Accessing Usenet News from Pine”. Whilst originally written for use with Pine on UNIX it also applies to the PC-Pine program available under Windows 95.

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## Windows 95 software update

*John Byrne and John Robinson tell you about the newest additions*

### Additions

Over the vacation the Windows 95 network applications software was expanded (in fact twice—the precise details of the second upgrade are unknown at the time of writing this).

Teaching software is accessed via **Programs | Teaching**, and then the name of the department responsible. The Archaeology TLTP packages previously available under Windows 3.1 have been transferred, and some software for other departments.

The Papyrus bibliography manager is in **Programs | Databases**. This is in fact a DOS application, but as yet a more modern Windows based system is not available via CHEST.

The clip art for Powerpoint 7.0 is now working—albeit with a misleading warning message.

Most of the Paradox 7.0 experts are now working.

We hope to have improved the support for user writing their own programs—this depends on time available for installation work, and the delivery of installation kits from our software suppliers. If all goes well, the Programming section will include

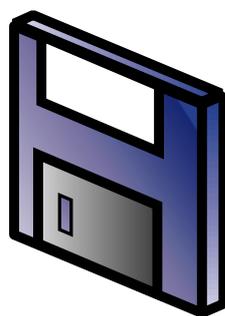
—Borland C++ 5.02—a later version of the 'pure' integrated development environment for Windows;

—Borland C++ Builder version 3. This is a programming environment for the rapid development of Windows 95 programs, combining a 'visual' interactive design of the user interface with C++ for the task-specific code. Also known as 'Delphi for C++';

—Jbuilder, again from Borland. This applies the visual programming paradigm used by Delphi and Cbuilder, with Java as the base language.

—TCL and an associated graphical user interface builder SpecTcl provide an interpreted language system.

—NAG C Library DLL. This will give Windows programmers (primarily working in C or C++) access to a library of over 250 high quality numerical routines.



### Warning of removals

Please note that WordPerfect 7 and Delphi 2 (both of which have had later versions running in parallel for some time) will be removed at the end of the summer term.

### Systems Software

On office PCs, connections to users' M: drives and the teaching software N: drive are made using a software package called PC-NFS. The version of the package currently installed (5.13) has a number of problems, most notably in examining and modifying file properties. A new version (6.01) is available for users who wish to install it themselves. If you have not been experiencing problems, then there is no urgency to upgrade this software. If you do wish to upgrade it, close all open applications, then run

```
s:\95sys\nfs601\setup.exe
```

The program should install without operator intervention. Reboot your PC as requested and "cancel" the running of "parmset" when the PC boots (you can run parmset if you know what you are doing).

## Tcl/Tk 8.02p

*Rob Fletcher tells you about the latest version of this application builder*

The latest stable version of John Ousterhout's Tcl/Tk package is now available on the Silicon Graphics systems in the /usr/local/bin directory, along with an interactive GUI builder, SpecTcl.

The windowing shell (wish, see below) is also available on the Windows 3.1 systems hidden in "Courseware"/"Chemistry CourseWare".

The Windows 95 versions of Tcl/Tk and SpecTcl will be mounted over the Easter vacation.

### Background Information

#### tclsh

Tclsh is a shell-like application that reads Tcl commands from its standard input or from a file and evaluates them. If invoked with no arguments then it runs interactively, reading Tcl commands from standard input and printing command results and error messages to standard output. It runs until the exit command is invoked or until it reaches end-of-file on its standard input. If there exists a file .tclshrc in the home directory of the user, tclsh evaluates the file as a Tcl script just before reading the first command from standard input.

If you create a Tcl script in a file whose first line is

```
#!/usr/local/bin/tclsh
```

then you can invoke the script file directly from your shell if you mark the file as executable.

To start the Tcl interpreter simply type the unix command

```
% tclsh
```

#### Wish

Wish is a simple program consisting of the Tcl command language, the Tk toolkit, and a main program that reads commands from standard input or from a file. It creates a main window and then processes Tcl commands.

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To start the windowing shell, type the UNIX command

```
% wish
```

### SpecTcl

SpecTcl (pronounced "spec tickle") is a Tcl/Tk application for the design and testing of a graphical user interface. It can produce code for a number of target systems, but in general you would choose Tcl/Tk. The code generated with SpecTcl should run on any Tcl/Tk platform (UNIX, PC and Macintosh).

SpecTcl is started using the unix command:

```
% specTcl
```

### Help and Documentation

Comprehensive on-line help for the Tcl/Tk package is available in HTML format at: <http://www.york.ac.uk/services/cserv/docs/tcltk/>

The man pages are in `/usr/local/man/` under `man1`, `man3` and `man` subdirectories.

A comprehensive SpecTcl user guide is available for printing in `/usr/local/doc/SpecTclGd.ps` (122 pages)

For those requiring more printed documentation, copies of the (old) draft of John Ousterhout's book are also available for printing on `/usr/local/doc/TclTk;book.p1.ps` `book.p2.ps` —Intro and scripting `book.p3.ps`; `book.p4.ps` —Tcl and Tk C API.

## Microsoft on the Ropes

Ray Drainville tells you about Microsoft's day(s) in court

Can Microsoft defend itself against accusations of anticompetitive practices?

The software giant Microsoft has been under intense legal scrutiny by the US Department of Justice and by the European Union for the past several months for the way in which it distributes its free World-Wide Web browser, Internet Explorer. The legal proceedings centre on whether Microsoft is acting as a monopoly, driving out competition.

The issue may not seem important to those who browse the web at the University of York, since the Computing Service provides the rival Netscape Communicator software for use. However, the issues are of very considerable importance for the users of Windows PCs, and the legal proceedings against Microsoft may in fact decide how the company introduces innovation in its software in 1998 and beyond. The issue also may decide whether software maker Netscape will exist in a couple of years.

### Background

Microsoft has been under investigation before for anticompetitive, or 'antitrust', practices. In the early 1990's, the US Federal Trade Commission and European Commission antitrust officials investigated the software maker for unfair practices in requiring PC makers to pre-install, or 'bundle', its Windows operating system software with all new PCs. It must be recalled that there are a number of alternative operating systems that also run on Intel processors—for example (but not exclusively) Sun Solaris, Linux, OS2, PC-DOS, and NeXTStep. While the US and the EC were officially successful in forcing Microsoft to back away from its position, the damage was done, and there are few credible alternatives to Microsoft Windows on Intel PCs—certainly it is very difficult to find any PC with an operating system other than Microsoft Windows, whether the variant be 3.1, 95 or NT. Similarly, Microsoft was blocked from purchasing the software company Intuit, which pro-

duces the successful money-management software Quicken, on the grounds that Microsoft would instantly gain a significant hold on the growing market of on-line banking.



The issue is coming to a head very soon with the imminent release of Windows 98

and therefore dominate not only the computing industry but eventually the financial industry as well.

### The Internet onslaught

In 1994, a small company named Netscape was formed to create commercial software, now called Navigator, to graphically browse the World-Wide Web. Navigator is devoted to open standards—that is, the software's results were the same on whatever computer platform upon which it ran. Netscape went public in the following year, and instantly became one of the highest-performing technological stocks the US stock market had ever seen, in fact leading the charge of Internet public stock offerings. Netscape's web browser, Navigator, then enjoyed a near monopoly for web browsers.

During this period, Microsoft paid little attention to the growth of the Internet. The company believed that the on-line future lay in proprietary networks such as America On-Line

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feature: microsoft

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and CompuServe, and therefore made a considerable investment into the creation of the Microsoft Network, a rival to these systems. It only became apparent during 1995-96 that the Internet, and not proprietary systems, would establish the future of digital communications.

When the dominance of the Internet became apparent to Microsoft it became clear that the software giant needed to produce its own World-Wide Web browser—particularly when it noted that Netscape was able to virtually dictate the future direction of the World-Wide Web. They produced Internet Explorer, a browser based upon the first graphical web browser, Mosaic—which was incidentally created by the founding members of Netscape when they were postgraduates—and distributed the software free of charge. This last fact is highly important, as Netscape at this point charged for its browser. Microsoft effectively was undercutting the foundation of Netscape's entire business.

Netscape had little to fear in the beginning. The performance of the first few iterations of Internet Explorer were lacklustre to say the least. They were buggy, they couldn't download and view pages at the same time, and their handling of common HTML was idiosyncratic.

In fact it wasn't until version 3.0 of Internet Explorer that Microsoft created a more winning formula. This version of the web browser was significantly enhanced from previous versions. It handled HTML very well, it disposed of its bugs and even beat Netscape to the punch in the introduction of new web technologies such as Cascading Style Sheets (see previous article in *Keynotes* for a feature on CSS). And wither Netscape at this time? It too had produced the third version of its browser, which was filled with bugs and was significantly slower than Internet Explorer in its rendering of web pages. In a world where the digital citizen usually has to pay by the minute for access, this is a cardinal sin.

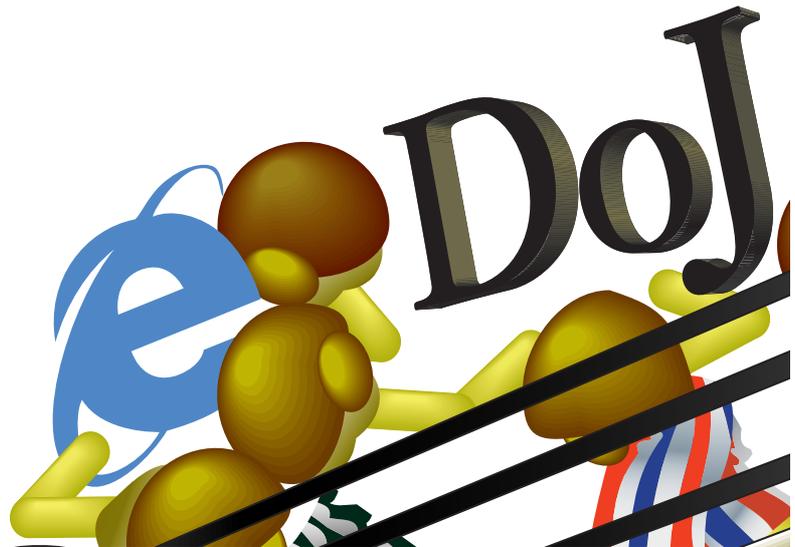
### Backroom deals

Microsoft's winning formula for Internet Explorer went beyond significant performance enhancements,

however. They also started bundling the software with revision 2 of Windows 95. This was very threatening to Netscape, as Microsoft's operating systems own virtually 90% of the desktop market. To have one's free competitor automatically installed on every machine purchased is potentially fatal.

It has become clear that Microsoft has been working very hard indeed to have Internet Explorer used as widely as possible. The software giant produced agreements with many hardware distributors—such as Gateway 2000, Dell and Compaq—throughout 1996 and 1997 that formally installed Internet Explorer as the only web browser on the Windows 95 desktop. Netscape's browser was nowhere to be found. In parallel, Microsoft vigorously pursued ISPs (Internet Service Providers) to bundle Internet Explorer with their software rather than rival Netscape's. These agreements have been taking their toll on Netscape. Its share of the browser market is down to approximately 60%, and it recently announced fiscal losses and made a sizeable proportion of its employees redundant.

Were all these successful agreements on Microsoft's part the result of intelligent and honest brokerage? This does not appear to have been the case



Were all these successful agreements on Microsoft's part the result of intelligent and honest brokerage? This does not appear to have been the case. The US Department of Justice started to look quietly into the manner by which Microsoft made agreements with hardware vendors; likewise the EU began a quiet investigation into, among others, the agreements made with ISPs. In the course of these investigations, sources leaked corporate memoranda and some hardware companies and ISPs (eventually) spoke out about the intimidatory tactics that Microsoft employed to ensure the widest market saturation possible for its software. And herein lies the question of whether Microsoft was leveraging its power as a monopoly—or indeed whether it is a monopoly at all.

### The smoking guns

The leaked memoranda and the testimony of hardware vendors and ISPs paint a picture of Microsoft—far and away the most successful software company in the world—as extremely paranoid that it would forever lose its market position.

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The memoranda were written by top Microsoft figures and talked about the threat of Netscape. They indicated that the best way to neutralise Netscape was to crush it. And they furthermore indicated that the best way to crush Netscape was to leverage their market position as the dominant operating system vendor against Netscape. It seems to have been their belief that Netscape's open standards could eventually lead the way to negating the necessity of using Windows as the operating system in the modern world.

Compaq eventually spoke out about Microsoft's tactics of leveraging their dominant position in the operating system marketplace. Microsoft threatened that if Compaq did not place Internet Explorer as the only web browser on their computers, Microsoft would charge them significantly higher rates for copies of Windows 95. This is a disastrous turn for hardware vendors who often operate on fairly slim profit margins per machine. Similarly, the EU has been investigating Microsoft for (among other things) threatening small ISPs with bankruptcy if they do not bundle the browser with their own software. Few ISPs have come forward yet, but this may be the case because the US investigation is further ahead in its proceedings.

### Forcing the issue

Throughout these investigations it must be said that Microsoft has done little to help its position, either in terms of calming people's concerns of anticompetitive practices or in minimising the potential damage wrought by the proceedings.

At first, a US judge ordered that Microsoft 'un-bundle' the browser from the operating system. Microsoft countered that doing so would completely disable the operating system, because the system and the browser share many vital resources. In an embarrassing turn, the judge himself showed the software giant how to remove the executive program—and the executive program only—from the desktop, and stated that the company would be held in contempt of court if they did not comply. The company complied.

At the same time, Microsoft has made it a requirement that system administrators who use Windows NT

(a high-end operating system used as a server and powerful workstation) use Internet Explorer in order to download server updates from the Internet. Microsoft claims that they simply wanted to ensure that their user base was all using the same software in order to weed out problems more easily; but in the light of the continuing investigations, the requirement came at a very sensitive time.

Finally, the issue is coming to a head very soon with the imminent release of Windows 98, the upgrade to Windows 95. Among other things Windows 98 completely integrates the Internet with the desktop. Internet Explorer and Windows Explorer are united—one browses the contents of one's hard drive with the same soft-

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## The current success of the DoJ's proceedings has emboldened several states to conduct their own investigations

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ware that one browses the Internet. It is certainly difficult to imagine that, when wishing to browse the Internet, a user is going to switch from Explorer to another bit of software. There have been indications that the DoJ will investigate Windows 98 issues, but it seems very late to do anything effective against the company.

## Where do we go from here?

Microsoft has been taking its lumps in the court of public opinion and it seems that it is starting to pull back from the brink. It is no longer requiring European ISPs to bundle Internet Explorer with their software. It has also 'un-bundled' Internet Explorer from revision 2 of Windows 95. But the issue is not over yet, and Microsoft claims that the proceedings of the Department of Justice is severely hampering its ability to innovate in the marketplace. Why indeed, they ask, should the DoJ be concerned about Microsoft's dominance of the World-Wide Web, when they were not as concerned with its dominance of the desktop? Microsoft does have a point when they counter that they are being targeted by their competitors—Netscape, Sun

and others—for being successful. It also claims in its defence that it is not a true monopoly because it a.) cannot control prices and b.) the computing industry is too uncontrollable for Microsoft to be considered a monopoly. It has stated that it acts aggressively because the computing world is so volatile that today's market leader will become tomorrow's has-been—and indeed, the company can point to VisiCalc, Lotus, WordPerfect, Corel and Novell as companies that once enjoyed powerful positions but ultimately lost to Microsoft as they competed head-to-head.

Nevertheless, the current success of the DoJ's proceedings has emboldened the district attorneys for several states to conduct their own investigations into the software giant, and the issue is far from closed.

The company is doing a poor job of winning public approval. Recently the *Los Angeles Times* broke the story that Microsoft was about to conduct a behind-the-scenes campaign to influence public opinion, and those local district attorneys, with letters to newspaper editors purporting to have been written by concerned citizens—when in fact they would be written by Microsoft public relations figures. At first the software company vigorously denied the charge and when further evidence came forth they admitted that they considered the idea, but ultimately rejected it. Newer evidence has come forth, however, that indicates they approved the scheme and were planning to implement it when it became public.

It is still very early in the DoJ's case against Microsoft and it is unclear where it will all lead in the end. One thing is very clear, however—Microsoft will not allow itself to be placed into the position of complying with a court-order. This would be tantamount to admitting guilt and certainly further embolden its critics into pursuing them. Microsoft will certainly come to some agreement with the DoJ. It is merely a question of the degree to which they give in, and the potential damage the agreement will have upon Microsoft's plans to integrate the desktop and the Web.

**kn**

(C/Net's investigative articles on New.Com [<http://www.news.com>] have contributed to this article)

# York DataNet: bringing CD-ROM searching to your desktop

Christine Ellwood tells you about the new CD-ROM system

YorkDataNet is a new service which provides access to locally held CD-ROM and other databases across the campus network. The service has been planned and implemented as a joint project between the Library and the Computing Service which has facilitated its integration with the campus network. The service will continue to be managed jointly.

This article provides an overview of YorkDataNet, but it is an evolving service and every question cannot be answered here. In addition, YorkDataNet should not be seen in isolation; it complements other database host services such as BIDS, EDINA, MIDAS and ARC and the databases which are available on standalone PCs in the J.B. Morrell Library. Look at the Databases at York web pages for more detailed access information, a full list of databases available through YorkDataNet and other host services, answers to frequently asked questions and updates: <http://www.york.ac.uk/services/library/datanet.yrk/>

For several years CD-ROM searching has been restricted to PCs in the Library and many of the databases had to be run using DOS-based software. The new system allows access from supported and unsupported Windows 3.1 and Windows 95 PCs, plus Apple Macintoshes and dial-in, with UNIX access to be added later. Most of the databases now have a Windows interface, although there are a few which cling on to DOS.

YorkDataNet is automatically available on all supported PCs on the campus network. On Windows 95 supported PCs click on **Start | Programs | Information Resources | YorkDataNet**. On Windows 3.1 supported level 2 PCs an icon is available in the Information Resources group on the desktop. In addition, a number of departments have made it available on departmental machines and there are some dedicated PCs on the first floor of the J.B. Morrell Library (behind the Enquiry Desk). You can also download the client software yourself if you have an unsupported machine or are connecting from home.

You will see a number of differences between the service on Windows 95

supported PCs and on other machines. Although the menu looks similar there are some important differences with printing, downloading and the databases available. This is because we are actually running two separate NT servers. The CD-ROMs are cached (copied) to hard disk on the first server which speeds up searching considerably. On Windows 95 supported connections software is installed which connects directly to this CD-ROM server. It downloads the individual items of software required to access a particular database to your hard disk, runs them, and removes them afterwards to save space. Printing and saving work exactly as they would if the application was installed locally.

As we cannot predict exactly how software is set up on other PCs, and to allow access to non-PC machines, the second server runs Ntrigue which uses a version of Citrix thin client technology (see *Keynotes* vol. 24, no. 2 for more information on thin client technology). Instead of running the CD-ROM software on your hard disk it runs on this separate server and the database search software appears in a window on your screen. Searching works exactly as it would if the database was running locally. However, printing and saving (downloading) work in a slightly different way and a small number of CD-ROMs which run on outdated software are not available (see the Databases at York web pages for more information). It is the first server of this type which is being used to provide a campus-wide service at York and has given Computing Service valuable experience in using the technology and in assessing whether it might be appropriate for other services.

There is normally a limit to the number of simultaneous users for each individual database. This limit applies whether you are connecting via a Windows 95 supported PC or via another machine. The library guide for each database gives the limit for simultaneous users. In addition, there is a limit of 30 users at one time for access to YorkDataNet itself on machines other than Windows 95 supported PCs. We will be monitoring the usage of databases on both services

and will consider upgrading the number of users for databases where there are an excessive number of occasions when the limit is reached. Since these extra users can be expensive, decisions will need to be made within the context of available resources and priorities when compared with purchase of new databases.

We also encourage suggestions from you for new titles to be added to the service. There are a number of ways in which new databases can be funded and you should contact your Subject Librarian in the first instance to discuss your needs. In addition to price, we have to consider the technical features of a database before deciding whether to network it or install it on a standalone PC in the Library. The cheapest CD-ROMs are often the most difficult to make available!

There will be an official launch of YorkDataNet in the J.B. Morrell Library on Thursday 23 April which will be followed over the next week by a series of demonstrations and opportunities for hands-on practice. For details of times see the posters in the Library, or visit the Databases at York web page. We can also provide training for staff and students in a variety of ways. Please contact your Subject Librarian to discuss your needs.

Although we have tested YorkDataNet and each database on a range of machines, it is impossible to predict what problems may occur on individual machines. Some questions are answered on the Databases at York web pages which will be continually updated as we get asked questions and (hopefully) find solutions to problems. We also welcome your feedback on the service (good and bad) as this will help us to develop it in the way that you want. You can talk to your Subject Librarian or e-mail [ydnhelp@york.ac.uk](mailto:ydnhelp@york.ac.uk).

*Editor's Note: Christine Ellwood is Head of Subject Services and Information Systems.*

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Also, try the World-Wide Web: <http://www.york.ac.uk/services/cserv>

## Information Desk

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Telephone: ext 3838  
Email: [infodesk](mailto:infodesk)

The Information Desk is open from 9am to 5.15pm Monday to Friday (*closed for training Wednesdays 2pm-3pm*), for problem solving, advice and information, fault reporting, network connections, file conversion, sales, course bookings, registration and documentation. Printed output can be collected from the lobby entrance which is open from 8am to midnight.

## Contacting Computing Service Staff:

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