

TECHNOLOGY

F

Y

I

MICROSOFT  
**TECHNOLOGY**  
DEPLOYMENT

ISSUE 1 FEBRUARY 2003

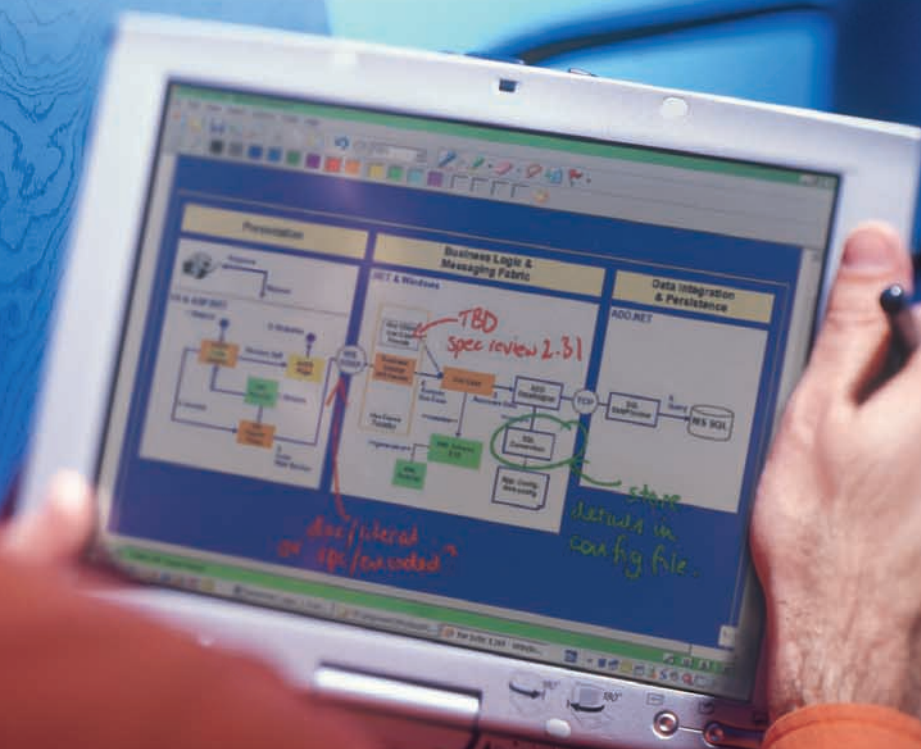
# FACE THE FUTURE

THE NEW PC  
IN TABLET FORM

**+PLUS**

PRODUCT  
SUPPORT

BUSINESS  
CRITICALITY



THE TRUTH ABOUT .NET:  
AND THERE'S NOTHING TO FEAR

TRUSTWORTHY COMPUTING:  
12 MONTHS ON

MOBILE APPS ON THE SERVER  
OR ON THE DEVICE...  
**WHAT'S YOUR  
VIEW?**

**Microsoft®**



**WHAT THE DOCTOR ORDERED 10-11**

“MEDICAL STAFF CAN USE IT LIKE AN A4 PAD AND  
HANDWRITE NOTES; THE DIGITAL INK FEATURE MEANS  
THEY CAN SEARCH BACK THROUGH THOSE NOTES, SO  
THE DEVICE DOES MORE THAN STORE BITMAP IMAGES”

Mansel Chamberlain, business systems manager at the Royal Brompton and Harefield NHS Trust, on the benefits of the Tablet PC.

**IN-BOX 2-5**

“I’ve recently been appointed network administrator. Any advice or dos and don’ts?”

These and other questions answered in the clinic.

**SECURITY: SOMETHING TO RELY ON 6-7**

“Trustworthy computing is about more than just security: it is about doing everything we can to assure the security, privacy, reliability and business integrity of their systems.”

Stuart Okin, Microsoft UK’s chief security officer, on the steps the organisation has taken in the last 12 months to achieve trustworthy computing goals.

**MOBILITY: REAL FAST FOOD 8-9**

“Proprietary technology established Wagamama as a pioneer and turned it into a market leader for sophisticated food.”

David Hunter of Geac explains the next step for the mobile warriors.

**QWERTY PHOBIA? TAKE A TABLET PC 12-13**

“For such a dramatic evolution of the PC format, the challenges it presents to both independent software vendors and systems integrators are minimal.”

And here’s why it’s not just the end-user that’s pleased.

**PRODUCT SUPPORT: WHEN YOUR NUMBER IS UP 14**

“The software industry has been really bad about this – it has been too self-centred.”

Microsoft’s Lars Ahlgren voices customer concerns on poor product support lifecycle information

**DESTINATION .NET 15-17**

“For anyone standing at the bottom of the .NET learning curve, just grasping what it is all about will be the first problem. This is not just a new way of writing code, but a vision of a new way of looking at the world of computers and information.”

Phil Jones takes the first steps down the road to .NET

**RELIABILITY: SHAKE OFF THE CHRYSALIS 18-19**

“We are competing in a very different world. The argument today is not about product features, it’s about an altogether more complex proposition concerned with scalability, manageability, availability and security.”

Microsoft’s Peter Cummins on the organisation’s drive into the business critical computing space.

**THE EXCHANGE 20**

When a company develops applications for use on mobile devices, should it hold them on the server or put them on the devices themselves?

Tune into Rick and Joe’s e-mail exchange to hear their views and add your own.

Editor: **Jo Russell** Technical editors: **Helen Beckett, Phil Jones**  
Associate editor: **Kate Pritchard** Creative director: **Crispian Brown** Art editor:  
**Erroll Jones** Account director: **Ingrid von Bibra** Production director: **Andrea St Hill**  
Editorial director: **Stuart Rock** Publisher: **Mike Bokale**

FYI is published for Microsoft Limited by Caspian Publishing Limited, Millbank  
Tower, Millbank, London SW1P 4QP. General enquiries: 020 7828 0706  
Editorial: 020 7828 0744 Fax 020 7828 0737  
E-mail: jr1@caspianpublishing.co.uk [www.caspianpublishing.co.uk](http://www.caspianpublishing.co.uk)

The views expressed in this magazine are those of the contributors for which  
Caspian Publishing and Microsoft Limited accept no responsibility. Readers should  
take appropriate professional advice before acting on any issue raised.  
Reproduction in whole or in part without written permission is strictly prohibited.

© 2003 Microsoft Corporation. All rights reserved. Microsoft, the Microsoft logo,  
Windows, Windows NT, Visio, Visual C++, Visual C#, Visual Basic, Visual J# and Visual  
Studio are either registered trademarks or trademarks of the Microsoft Corporation  
in the United States and/or other countries. All other trademarks are held by their  
respective companies.

COVER PHOTOGRAPHY: WILL WEBSTER

# LEADER

Welcome to the launch edition of *FYI Technology*.

The creation of this magazine, to be published twice per quarter, is in direct response to your feedback.



All of us suffer a similar problem regarding time – not enough hours to do too much work. We would all like assistance in making our lives easier, getting our hands on information that is relevant to us in our working lives and that will make the tasks that we have to

“LET US KNOW WHAT YOUR ISSUES ARE. *FYI* IS YOUR MAGAZINE – HELP US TO GUIDE ITS CONTENT”

perform run that much more smoothly. The phrase “work smarter, not harder” has been used so often that it starts to sound trite, but it is no less true for its repetition.

And this is what you have confirmed to us. Being inundated with information makes the task harder – but good, relevant information that is pertinent to the way in which you work and the challenges you are facing is welcomed.

Our aim is that *FYI* will play its part in achieving this goal. In this issue, we have included articles on systems security, integrity and reliability, mobility, implementing .NET, and product support, amongst others, knowing them to be issues high on your agendas. The in-box, which will be a regular feature, will answer questions that you have put to us. But this is a two-way street. If we are to improve our service to you, then you must let us know how. Tell us what your issues are, what you would like more information on and what topics you would like to see covered. *FYI* is your magazine – help us to guide its content. You’ll find details of how to contact us on page 5.

In the meantime, enjoy this issue.

**Neil Holloway**  
Managing director, Microsoft Ltd  
Vice-president, Microsoft EMEA

## QUESTIONS TO THE CLINIC:

In this regular feature you’ll find practical answers to some of those niggling problems that you’ve raised with us

**Q: I AM LOOKING FOR A WAY TO SET UP A “DISTRIBUTION LIST” OF EXTERNAL INTERNET E-MAIL ADDRESSES THAT WILL NOT DISPLAY THE INDIVIDUAL MEMBERS OF THE LIST IN THE TO: FIELD. WE USE OUTLOOK 2000 ON EXCHANGE 5.5. I DO NOT WANT TO CREATE HIDDEN RECIPIENTS FOR THESE OUTSIDE ADDRESSES. I HAVE ALSO LOOKED AT MAIL MERGING CONTACTS, BUT WANT SOMETHING THAT IS NOT TOO DIFFICULT FOR USERS TO USE. ANY SUGGESTIONS ARE GREATLY APPRECIATED.**

**RESPONSE:** When you create a distribution list, there is an option on the Advanced tab that has the option: “Hide Membership from Address Book.” That should fix your problem. For some caveats on the use of the “Hide Membership” option, see Q176145 - XADM: Administrators Can Edit DL Members Even When Hidden from AB <http://support.microsoft.com/default.aspx?scid=kb%3Ben-us%3B176145>

**Q: THE TERMINAL SERVICES ADVANCED CLIENT ALLOWS YOU TO LOAD A PROGRAM AT THE START OF A SESSION IF YOU SET THE SECURED SETTINGS INTERFACE ON. IT ALLOWS YOU TO DO THIS THROUGH THE STARTPROGRAM METHOD. THIS WORKS FINE IF YOU ARE TRYING TO LOAD AN EXECUTABLE, BUT I AM TRYING TO LOAD AN ACCESS MDE, AND I KEEP GETTING THE FOLLOWING ERROR:**

An error(193) occurred while creating user logon.

This initial program cannot be started  
C:\Test.MDE

Please check the initial program in the client configuration



## IN THE CLINIC THIS ISSUE:

**Donna Warburton &  
Mark Tennant**  
Server & solutions group



### IS THERE ANY WAY TO LOAD ANY OTHER TYPE OF DOCUMENT OR APPLICATION OR CAN YOU ONLY LOAD EXES?

**RESPONSE:** You should be able to accomplish it by using the executable in the command line e.g:  
c:\.....\access.exe C:\Test.MDE  
Remember your “” if you’ve got spaces in the path.

### Q: HOW CAN I AUTHENTICATE A USER ON A SITE, USING BASIC AUTHENTICATION BUT WITHOUT USING THE POP-UP DIALOG FROM THE OPERATING SYSTEM? IS THERE ANY WAY TO USE THE API TO SEND THE CREDENTIALS CAPTURED FROM TEXTBOXES TO A SERVER SIDE FUNCTION THAT ALLOW THE USER TO BE AUTHENTICATED WITHOUT SEEING THE WINDOWS DIALOG? (NOTE: THIS IS NOT SIMPLY FOR KNOWING IF THE USERNAME AND PASSWORD ARE CORRECT.)

**RESPONSE:** Try this one: <http://username:password@domain.com/page.htm>

Alternatively, how about Microsoft® Site Server and Forms Authentication? Forms Authentication is a group of ASP pages that first prompts the user for a username and password, then it passes this information to a Verify page, which, if the username and password are found in the membership database, it then passes to a membership page. If it doesn't verify, you get a different page. Once the user is verified, a cookie value is created. The cookie works until it expires, and it allows the user to browse the site without having to specify a username and password. As the user goes through the site, the cookie gets renewed, so while they work with the site, they don't expire.

The Site Server user gets mapped to a Windows® NT® user, so NTFS permissions will work. See Microsoft Site Server Home Page.

### Q: I'M RESPONSIBLE FOR MANAGING MY COMPANY'S USER ACCOUNTS. ONE OF MY COMPLAINTS ABOUT NT IS THE AMOUNT OF TIME AND EFFORT NECESSARY TO CREATE USER ACCOUNTS AND THEIR ASSOCIATED RESOURCES (E.G. PROFILE DIRECTORIES, HOME DIRECTORIES). NT'S DEFAULT ADMINISTRATION MODEL FORCES ME TO GO THROUGH

Microsoft Windows NT Server 4.0 Resource Kit utilities, access to the resource kit is necessary on the system from which you run the script.

The batch file's syntax is makeuser <server> <drive> <username> <password> in which server is the name of the server that houses the user's home directory, drive is the drive letter on the specified server that houses user home directories, username is the NT username of the created user, and password is the user's password.

## “IF YOU KNOW HOW TO WRITE BASIC SCRIPTS, YOU CAN ACCOMPLISH MANY TEDIOUS STEPS WITH A BATCH FILE”

### SEVERAL TEDIOUS STEPS TO COMPLETE THIS TASK. DO YOU KNOW OF AN EASIER WAY?

**RESPONSE:** There are several solutions. If you know how to write basic scripts, you can accomplish many of those tedious steps with a script or batch file. For example, you can create a simple batch file that accepts a username and password as parameters and uses this information to create the account, create and share the home directory, and then set the appropriate directory permissions.

Makeuser.cmd is an example batch file that performs these functions. The script requires administrative privileges. Also, because the script uses several

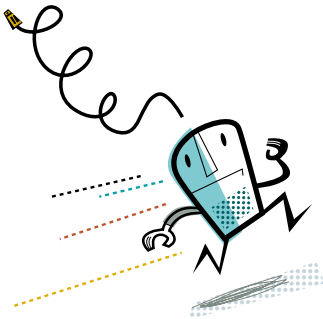
To create the home directory, share it, and set permissions. Use the resource kit utilities Xcacs and Rmtshare (permissions are admin=Full, user=Change) as follows:  
md \\%1%\%2\$\Users\%3  
xcacs \\%1%\%2\$\Users\%3 /t /e /g %3:C Administrator:F  
xcacs \\%1%\%2\$\Profiles\%3 /t /e /g %3:C Administrator:F  
rmtshare \\%1%\%3\$=%2:\Users\%3 in which \Users is the base user home directory folder on the server and \Profiles is the user profile directory. The script assumes that \Users and \Profiles are on the same drive. If they aren't,



⇒ adjust the references accordingly before you run this batch file. If the server name and drive letter are always the same, you might also want to hard code these within the script and remove them as variables.

Next, add the user and set the home directory paths in User Manager with a dollar sign (\$) at end (i.e. to hide the share): net user /add /domain %3 %4 /homedir:\\%1\\%3\$

This script is only a simple example – you can certainly make the script more useful with some creative tweaking. For example, you can modify



the script to accept additional parameters (e.g. other user property settings) or instruct the script to read user data from a file rather than from command-line parameters.

If you prefer using a GUI-based utility to manage users, the market offers several fine solutions. One such is Simac Software's UserManagement Lite. This freeware utility, a light version of Simac's UserManagement Professional, lets you quickly and easily create users and their associated attributes and resources. (Screen 1 shows UserManagement Lite's GUI.)

These characteristics include basic items such as home and profile directories and logon scripts, users' Microsoft Exchange Server mailbox properties, and NT Server 4.0, Terminal Server Edition (WTS) configuration settings. You can download UserManagement Lite at [www.tools4nt.com](http://www.tools4nt.com)

**Q: HAVING RECENTLY BEEN APPOINTED NETWORK ADMINISTRATOR FOR OUR DEPARTMENTAL SYSTEM, I WOULD BE GRATEFUL FOR WHATEVER ADVICE YOU CAN GIVE ME, AND WOULD PARTICULARLY APPRECIATE A CHECKLIST OF VITAL DOS AND OR DON'TS.**

**RESPONSE:** Network administration is all about attention to detail, and making the

## “ALWAYS TEST NEW SERVICE PACKS IN ISOLATION BEFORE APPLYING THEM TO YOUR LIVE ENVIRONMENT”

commitment to ensure that your network clients can rely on access to services and data on a round the clock basis. This starts with checking that the network you have inherited is fit for its purpose in the first place, so before doing anything else review whatever documentation and log file information has been left behind by your predecessor. If you find any anomalies in the documentation, this should go to the top of your list for action.

Assuming that you now have the network configured and tuned to your satisfaction, begin to map out a routine for ensuring that things stay that way. The most important routine task is to pay attention to security and to regularly check the Microsoft TechNet Security web site for the latest security bulletins and service packs. Keep up to date with Microsoft security updates, but always test new service packs in isolation before applying them to your live environment. This routine can be partially automated by subscribing to the bulletin notification service at:

[www.microsoft.com/technet/security/bulletin/notify.asp](http://www.microsoft.com/technet/security/bulletin/notify.asp)

To download service packs, go to:

<http://support.microsoft.com/support/servicepacks/default.asp>

Other actions to schedule into your work diary should include regular backups, and log file checks. However, it is not enough simply to do backups, remember also to test backup tapes to ensure that they recover properly, and ensure that rescue diskettes are kept up to date and ready in the A: drives to all servers.

Log checks should be done daily, and are the best way of anticipating network problems before they come to attention of your users. Guidance on

system utilities that can help with this and other advice on preemptive network maintenance can be found at:

[www.microsoft.com/technet/prodtechnol/windows2000serv/reskit/serverop/w2kopgd.asp](http://www.microsoft.com/technet/prodtechnol/windows2000serv/reskit/serverop/w2kopgd.asp)

If your predecessor has left you with comprehensive network documentation you will appreciate the long-term value of this house-keeping task. You will appreciate it even more if he or she hasn't! Documentation can be a bit of a chore, but is vital to the long-term health of the network. Using a database such as Microsoft Access is a good idea, and tools like Microsoft Visio® will help you map the network and keep track of resources. Click on: [www.microsoft.com/technet/prodtechnol/visio/visio2002/default.asp](http://www.microsoft.com/technet/prodtechnol/visio/visio2002/default.asp) for more information.

Although it is your job as a network administrator to serve the needs of your end-users, remember also that the network is your responsibility, and users must respect this. Do not allow users to treat network resources, including servers, as their own, and in particular ensure a clear separation between servers and workstations. This includes physically isolating servers by making sure they are properly housed in a secure area, which is kept closed to users.

No problems can be solved by rebooting a server. A reboot may get a network up and running, but it has not fixed the problem that caused it to fail in the first place. For more detailed guidance on how to diagnose network failures, try: <http://support.microsoft.com/default.aspx?scid=kb%3Ben-us%3B302552> and <http://support.microsoft.com/default.aspx?scid=kb%3Ben-us%3B302558> as two to start with.

*The information contained in this section represents a selection of the useful exchanges found on the Microsoft web site, and originates from various sources. It is for general information purposes only. Microsoft Limited makes no warranties, representations or undertakings in relation to this information, including but not limited to its quality, accuracy, completeness or fitness for purpose. Microsoft accepts no responsibility for reliance placed on this information. Always obtain appropriate professional advice on specific problems or matters.*



# MAKE SPACE IN YOUR DIARY FOR...

**20 February 2003**

**TechNet Spotlight Session**

Reading  
Active Directory  
Disaster Recovery

**20 February 2003**

**MSDN – Introduction to .NET Series**

Edinburgh  
Web Development with the .NET Framework

**20 February 2003**

**MSDN – .NET Expert Series**

Manchester  
ASP .NET Tips & Tricks and  
Deploying .NET Applications

**25-27 February 2003**

**DevWeek**

London  
Microsoft Sponsored Event:  
Delivery Developer  
Presentations

**26 February 2003**

**TechNet Spotlight Session**

Reading  
Microsoft SQL Server 2000

**26 February 2003**

**TechNet Evening**

Reading  
Internet Security and  
Acceleration Server

**4 March 2003**

**MSDN – .NET Designer Series**

Reading  
.NET for Component  
Developers

**5 March 2003**

**TechNet Spotlight Session**

Manchester  
Overview of Security Solutions

**12 March 2003**

**MSDN – .NET Expert Series**

Reading  
Advanced Windows Forms

**17 March 2003**

**XML & Web Services 2003**

London  
Microsoft Sponsored Event:  
Developer Presentations on  
.NET Framework

**26 March 2003**

**TechNet Spotlight Session**

Reading  
Microsoft SQL Server 2000

**28 March 2003**

**TechNet Spotlight Session**

Reading  
Overview of Security Solutions

**31 March - 2 April 2003**

**Microsoft Mobility Developer Conference**

Paris  
Mobility Tools and Strategies

**1 April 2003**

**MSDN – Introduction to .NET Series**

Reading  
.NET for Web Developers

**8 April 2003**

**MSDN – .NET Expert Series**

Reading  
Building Secure & Scaleable  
ASP .NET Applications

**9 April 2003**

**MSDN – .NET Expert Series**

London  
Building Secure & Scaleable  
ASP.NET Applications

## TECHNICAL EVENTS FROM MICROSOFT

Microsoft offers a wide range of events delivering technical "how to" information to IT professionals through TechNet, and to Developers through MSDN. These include regular free events, which deliver in-depth information on developing, deploying, using and optimising Microsoft technologies. You will hear directly from Microsoft technology specialists who deal with real-world implementations of our products and technologies every day.

**11 March 2003**

**MSDN – .NET Expert Series**

London  
Advanced Windows Forms

**18 March 2003**

**TechNet Spotlight Session**

Edinburgh  
Overview of Security Solutions

**20 March 2003**

**TechNet Evening**

Reading  
Implementing Clustering  
Technologies in Windows

For TechNet events, visit: [www.microsoft.com/uk/technet/tcevents/itevents](http://www.microsoft.com/uk/technet/tcevents/itevents) For MSDN events, visit: [www.microsoft.com/uk/msdn/events/events.asp](http://www.microsoft.com/uk/msdn/events/events.asp)

TECHNOLOGY



## THE COMPLETE PICTURE

### Want a free subscription to FYI Technology?

FYI Technology is a six-weekly publication from Microsoft. If you would like to receive regular copies, please visit:  
[www.microsoft.com/uk/fyitechnology](http://www.microsoft.com/uk/fyitechnology)

We'd love to hear your opinion of FYI Technology. Visit:  
[www.microsoft.com/uk/fyitechnology](http://www.microsoft.com/uk/fyitechnology) to give us your feedback.



### Interested in receiving FYI Strategy?

FYI Strategy, the sister publication to FYI Technology, offers advice and best practice to senior business decision makers on many of the issues covered within FYI Technology. To receive a free copy, visit:  
[www.microsoft.com/uk/fyitechnology](http://www.microsoft.com/uk/fyitechnology)

If you would like to sign up to MSDN Flash for developers or TechNet Flash for IT professionals, our fortnightly e-mail newsletters, visit: [www.microsoft.com/uk/fyitechnology](http://www.microsoft.com/uk/fyitechnology)

# SOMETHING TO RELY ON

For the past 12 months Microsoft has placed emphasis on the need to ensure systems security, integrity and reliability in all its products and services under the banner of its Trustworthy Computing initiative. A year into the scheme, *FYI* talked to Stuart Okin, Microsoft UK's chief security officer about progress so far, and the benefits customers can expect to see.

**FYI: THIS TIME LAST YEAR, MICROSOFT'S CHAIRMAN OF THE BOARD AND CHIEF SOFTWARE ARCHITECT, BILL GATES, ANNOUNCED THE COMPANY'S TRUSTWORTHY COMPUTING INITIATIVE. SOME OF MICROSOFT'S CRITICS HAVE DESCRIBED THE INITIATIVE AS A MUCH NEEDED OVERHAUL OF THE COMPANY'S SECURITY POLICIES AND PRACTICES. BUT WHAT IS "TRUSTWORTHY COMPUTING," AND WHAT IS MICROSOFT TRYING TO ACHIEVE?**

Okin: The first thing to say is that this is not just about security. At Microsoft, we have done and continue to do a lot of good things in security. But, what Bill [Gates] was trying to do with his announcement last year was to galvanise the organisation to deal with security more holistically. For that reason, the Trustworthy Computing initiative is about more than just security: it is about doing everything we can to assure the security, privacy, reliability and business integrity of their systems.

Where security is concerned, obviously that means making sure that computer systems are tamper proof, and not vulnerable to malicious attack. Where privacy is concerned, it means making sure that the user, and no one else, is always in full control of their data. By reliability, we mean ensuring that future and present products are highly available and trustworthy, and when we talk of business integrity we are talking about ensuring that both our products and our people fulfill our customers' expectations of them. Ultimately, for Microsoft, trustworthy computing is also all about deepening the trust between ourselves and our customers.

**IT SOUNDS LIKE A VERY BROAD AND FAR-REACHING EFFORT. WHAT HAS MICROSOFT DONE SO FAR TO MEET THIS GOAL?**

In practice, these aims are addressed by a four-pronged strategy that talks about achieving trusted computing through design, by default, in deployment and through better communications with our customers and with the developer community.

Under the heading of design, we are concerned with making sure that all of our

**"COMPUTER SECURITY IS A JOURNEY, NOT A DESTINATION."**



products are architected with security and integrity in mind, but this concern doesn't stop with Microsoft. In the past year, we have trained some 11,000 developers across the US and elsewhere. It may sound surprising, but if you study for a computer science degree you are rarely taught about computer security. We are not trying to remedy this by turning people into security experts. Instead, we are raising developers' awareness of the possible implications of things such as buffer overrun; introducing them to the concepts of threat modelling; and encouraging them to test systems for things others than those that appear on the functional specification.

By doing these things, and by asking questions such as "does this code need to be running in this context?" we are responding to the lessons we learned from things like Code Red and the Nimda virus, and so by default we are reducing the attack surface that systems present to the outside world.

**THOSE ALL SOUND LIKE POSITIVE MEASURES THAT MICROSOFT IS ABLE TO IMPLEMENT DIRECTLY, BUT WHAT ARE YOU DOING TO SUPPORT YOUR CUSTOMERS AND PARTNERS IN THEIR EFFORTS TO REALISE TRUSTWORTHY COMPUTING?**

That's a good question, because clearly responsibility for systems security and integrity doesn't end with product and systems design, and Microsoft is certainly not neglecting the need to support the trustworthy computing initiative with appropriate services. There is already a huge code base out there that cannot wait for the next product release to be made secure, so we have been working hard to provide better support for the deployment of trustworthy systems.

For instance, we have produced comprehensive new guidance on issues such as how to better deploy and operate Windows 2000, and how to write secure ASPs [the active server pages created when deploying web-based applications]. There are a number of such guides now available at the Microsoft web site. These guides are free, and so are a number of new utilities and tools, such as the Microsoft Security Base Line Analyzer, which helps administrators to inspect their environments for potential security vulnerabilities.

More utilities and software patches such as these are being made available all the time, and it's becoming easier for customers to access them. As anyone who has used Windows XP knows, it is really quite easy to set it up so that it is always looking for patches and downloading the latest Microsoft software security bulletins. Of course, some enterprise customers are reluctant to use anything that downloads code automatically to their systems from somewhere else as they have additional concerns with application stack testing. But for these customers, the Microsoft Software Update Service also allows you to set up a federated services partition from within your perimeter, allowing you to draw down new software in a managed fashion.

**OK, SO THERE IS EVIDENCE OF REAL SUBSTANCE BEHIND THE MICROSOFT TRUSTWORTHY COMPUTING INITIATIVE, BUT WHERE IS THE CONCRETE EVIDENCE THAT ALL THIS EFFORT IS REALLY PRODUCING**

**MORE TRUSTWORTHY SYSTEMS?**

Even before the trustworthy computing initiative began, Microsoft decided to share some of its source code to public scrutiny for the first time, and invited two well-known independent security analysis companies to work closely with our development teams to audit the trustworthiness of the .NET Framework. Foundstone Inc and CORE Security Technologies have since published a white paper, "Security in the Microsoft .NET Framework," which concludes that .NET provides users with greater assurance that their applications can resist known security attacks "today and in the future." The report points out that poor design and administration can still leave systems at risk, but a key finding is that .NET Framework at least shifts the burden of making key security decisions away from end users, and gives more control and responsibility to system professionals.

The findings of CORE and Foundstone show that the commitment to trustworthy computing is embedded in .NET, the basis for Microsoft's future generation of products. But there we can also point to endorsement of the trustworthiness of our established products, such as with the award of Common Criteria security certification to Windows 2000. We have spent two to three years now pursuing the Common Criteria which are now accepted as measured evaluation of commercial software security by 15 government agencies worldwide. Windows 2000 has now been certified to Common Criteria EAL 4, which is about as strong as it is possible for commercial software to achieve without having specialised extensions made to it.

Other companies can also show Common Criteria evaluation, but we think a unique feature of our offering is that we have also been able to show that we can support several layers of flaw remediation. That means that, to the establishment of resources like the Microsoft Security Response Centre, we can offer assured processes that will handle the management and remediation of any security flaws that may be discovered. That's really unique.

**SO FAR, SO GOOD THEN, BUT HOW ABOUT MORE ADVICE TO CUSTOMERS ON HOW TO WRITE SECURE APPLICATIONS USING THE .NET FRAMEWORK, WHICH IS AN INHERENTLY MORE SECURE AND STABLE PLATFORM THAN THOSE BASED ON COM, IN THE FUTURE? HAS MICROSOFT CRACKED THE TRUSTWORTHY COMPUTING PROBLEM?**

In the next few months we will be offering the Windows .NET technology, which has been designed from the ground up to embrace the security paradigm. Of course, you might expect me to say that, but .NET technology really is designed to meet the demands of the internet era, unlike today's systems technologies which have their design roots in the early nineties, if not earlier. However, computer security is a journey not a destination, and it is the responsibility of us all to keep working to make computer systems as trustworthy as can be.

**WHERE NEXT:**

For a free security resource kit visit  
[www.microsoft.com/uk/security](http://www.microsoft.com/uk/security)

ILLUSTRATION: NICK REDDHOFF

THE RESPONSIBILITY LIES WITH ALL OF US"

# REAL FAST FOOD

DAVID HUNTER, DIRECTOR OF OPERATIONS, GEAC RESTAURANT SYSTEMS

## Wagamama maintains its industry status as the mobile pioneer

Noodle restaurant chain Wagamama has tapped into the capacity of wireless mobile to express its ethos of positive eating and living to the benefit of customer and business. Staff equipped with mobile workstations mean that customer satisfaction will not end with fresh food and speedy service, but can be enriched by other information services.

"This is a virtual desktop – they can not only take orders but browse the web for bus times and film timetables – all from the palm of their hand. As a customer service tool, it has great potential," confirms David Hunter, director of operations, Geac Restaurant Systems. The mobile workstation comes in the form of Microsoft's Pocket PC running on Compaq iPAQs over an 802.11b wireless LAN. All Wagamama's restaurants, central production kitchen and head office are linked over ADSL broadband.

A recent analysis of the mobile wireless model for customer service has revealed a compelling business case for technology investment. Until recently, the Kingston restaurant, due to its small size, was the only Wagamama outlet to take orders manually. However a recent upgrade enabled a before-and-after comparison of business. The analysis showed that each member of staff had two hours extra time a day, which translates into 3,500 more selling opportunities a year. If just ten per cent of these are converted into sales, it represents a significant new margin.

The noodle chain established its reputation for slick service back in 1992 when it pioneered the use of wireless handhelds to send table orders to the kitchen. Proprietary Geac Electronic Server Pad hardware and wireless technology connected the front and back office and was a talking point for customers too. "Staff would punch in the drinks orders – and these would arrive at the table and be served up while the food orders were still being taken," confirms Hunter.

Proprietary technology established Wagamama as a pioneer and turned it into a market leader for sophisticated fast food. However, it brought its own set of problems. The handheld devices used a Motorola radio board and the design trade-off between functionality and usability meant that resilience was compromised. "The devices were high maintenance. A couple of drops would unseat boards," recalls Hunter.

The move in spring 2000 to retain the mobile thin client model using off-the-shelf PC-based Tablets and Windows Server was therefore a no-brainer. At the time, there was no Pocket PC client for Win terminal services, so Geac implemented Windows CE onto iPAQ devices instead. It was just a case of being crafty and turning the landscape screen definition into portrait using drag 'n' drop, says Hunter.

Leicester Square Wagamama piloted the new touchscreen handhelds, which

connected to the suite of Geac applications. These included POS, stock control, central reporting for menu options and pricing, and back office applications such as employee records and time and attendance. Geac just had to modify its software to enable multiple sessions to be run from the terminal server.

One security expert who was dining at a restaurant also discovered – and pointed out – that the iPAQs talking to the base station over 802.11b were not encrypted or authenticated. This capability was activated and so Wagamama is fully secure from anyone placing false orders or snooping on their kitchen and business information.

The next phase of wireless mobile, in the process of roll-out since the New Year, will see further developments enabled chiefly by the installation of broadband and an intranet hosting a centralised database of resources. These will include pictures of menu options with accompanying lists of ingredients and allergy dangers – all accessible from the Pocket PC browser.

Waiting staff will become fully self-sufficient by the end of this year with the addition of 802.11b wireless belt printers enabling credit cards to be swiped and invoices printed at the table. Writing drivers to make the belt printers recognisable as a peripheral device will be the final tweak that converts each member of staff into a Wagamama satellite of customer service.





# WHAT THE DOCTOR ORDERED

DAVE GARNETT, MD, GRAPHNET AND MANSEL CHAMBERLAIN, BUSINESS SYSTEMS MANAGER, ROYAL BROMPTON AND HAREFIELD NHS TRUST

## Tablet PC in practice at Royal Brompton and Harefield Hospitals



"The only certainty in healthcare is that things will change. Scientific breakthroughs result in new treatments and so it's essential to be able to collect all types of information relating to patient care in one place." This is a key reason, says Tony Sharer, operations director of medical software supplier Graphnet, for Royal Brompton and Harefield NHS Trust taking part in a trial of Tablet PCs.

As a result of the pilot, the hospital believes there is great potential for the Tablet as a device to enable the storage and delivery of data from a single place. Mansel Chamberlain, business systems manager at the Trust, says that while the Tablets have to be further tested to ensure they do not interfere with hospital equipment in compliance with Department of Health guidelines, they have proved their potential.

"The benefit is that medical staff can use them at the bedside in a face-to-face situation, and they don't have to change their way of working. They can stick to handwriting notes and use the Tablet like an A4 pad. The Digital Ink feature means they can search back through their handwritten notes too, so the device does more than store bitmap images," says Chamberlain, who believes the Digital Ink facility heralds a new level of analysis in patient care.

By connecting the devices hosting to EPR (Electronic Patient Record) over a wireless local area network, doctors, nurses and other medical staff can update and annotate notes, diagrams or hospital systems from the ward. Sources of patient

PHOTOGRAPHY: JOHNNY MILLAR



data such as angiograms and x-rays can be accessed from the Tablet enabling improved consultation at the bedside and improving patient trust and confidence.

The Royal Brompton did some pioneering work with the Pocket PC two years ago, and found that the modifications needed to run the EPR application on the Windows CE operating systems were pretty straightforward. Because EPR was developed in XML, only the presentation layer of the application had to be adjusted to be legible on the device.

Porting EPR to the Tablet was even easier, requiring zero code rewrites. The Tablet PC Edition version of XP developed by Microsoft to work with Digital Ink and handwriting functionality meant that "EPR could be dropped straight in – even the handwriting functioned straight away," according to Dave Garnett, managing director of Graphnet.

However, the availability of what is essentially a wireless laptop will soon prompt demand for more specialist applications, reckons Callum Shillan, principal consultant with Microsoft Consulting Services. Shillan wrote an application in C# for a hospital consultant to enable him to take handwritten notes during his patient interviews using the Digital Ink facility of the Tablet PC, and to view them at a later date.

The writing of one-off applications is simple. Shillan believes the longer-term issue will be ensuring the supporting infrastructure behind the wireless LAN has sufficient bandwidth. For example, medical files such as heart scans are

hefty and when you multiply these by multiple patients, and again by a number of years, this adds up to a storage capability counted in terabytes.

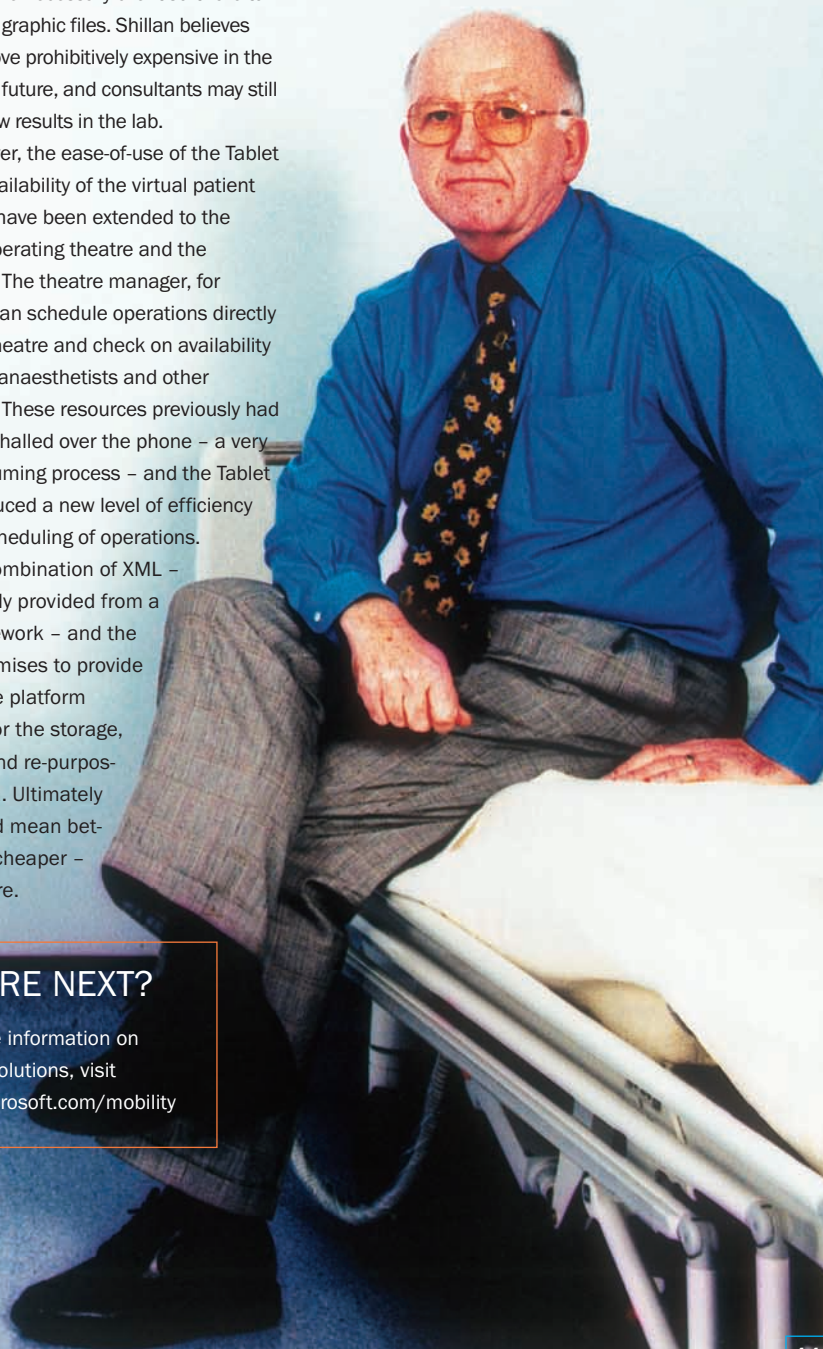
Because medical applications are in a niche market, the technology for scanning and converting medical images into digital files can be proprietary. There is an additional, and significant cost incurred in procuring the necessary client software to read these graphic files. Shillan believes this will prove prohibitively expensive in the immediate future, and consultants may still have to view results in the lab.

However, the ease-of-use of the Tablet and the availability of the virtual patient casebook have been extended to the hospital operating theatre and the pharmacy. The theatre manager, for example, can schedule operations directly from the theatre and check on availability of nurses, anaesthetists and other resources. These resources previously had to be marshalled over the phone – a very time-consuming process – and the Tablet has introduced a new level of efficiency into the scheduling of operations.

The combination of XML – increasingly provided from a .Net framework – and the Tablet promises to provide the flexible platform required for the storage, analysis and re-purposing of data. Ultimately this should mean better – and cheaper – patient care.

## WHERE NEXT?

For more information on mobile solutions, visit [www.microsoft.com/mobility](http://www.microsoft.com/mobility)



# QWERTY PHOBIA? TAKE A TABLET PC

Until recently, working electronically on the move meant wrestling with keyboards in awkward spaces, or compromising on power and storage by buying a PDA. Now the Tablet PC lets you walk, write and still carry your office in the crook of your arm.

**WHEN THE FIRST PERSONAL COMPUTERS APPEARED 20 YEARS AGO**, some pundits saw little future for them in the offices of senior managers and busy professionals. The problem was the keyboard, a strictly non-executive user interface which they guessed would see the PC forever stranded on the desks of personal secretaries. The pundits were wrong about the PC, but they may yet be proved right about the keyboard.

The power and utility of the PC has long since encouraged executives and other professionals to overcome their keyboard phobia, to the extent that it has become a standard feature of virtually every business desktop. In slimline form, the laptop PCs are becoming the ever present companion of many of us. Yet, for all this success, the marriage between the PC and the modern knowledge worker is not an entirely happy one.

For medical staff, field engineers, insurance inspectors and others who habitually work standing up, or even just for those of us who routinely scribble notes or doodle diagrams, the PC and its keyboard are an imperfect package. We may not have realised it, but almost all of us have spent the last 20 years waiting for the arrival of the Tablet PC. Officially that wait ended last November when Microsoft and more than five hardware partners unveiled the first of a new generation of PCs expressly designed to accommodate handwritten and hand drawn content.

There is an important distinction here between the Tablet PC and the computer industry's earlier attempts to mix the pen with digital content. Starting with the Apple Newton, continuing through the Palm Pilot, a variety of specialist niche terminals and culminating with modern Pocket PC-based personal digital assistants (PDAs), all attempts at pen-based computing have hitherto involved compromises in form factor and, critically, system design and performance. None of them have allowed users to walk away from their desktop or leave their laptop at home, and still enjoy all the same facilities they have on their PC.

The Tablet PC imposes no such compromises on PC users. They are full function PCs running a full version of Windows XP

and are designed to completely replace rather than merely supplement a user's conventional desktop or notebook. However, the combination of their active electronic matrix displays, and an extended version of Windows XP Professional, provides a new degree of flexibility and convenience. With the wireless local area network (WLAN) connections supplied as standard in many of the early models, the Tablet PCs will certainly appeal to mobile workers. However, their ability to impose something of the same order on ad hoc note-taking that e-mail and word processing have on correspondence and document generation means they may also prove attractive to users who rarely roam further than the staff canteen.

Indeed, although the early models from Acer, Hewlett-Packard, Toshiba, RM and Fujitsu Siemens and many other manufacturers are initially being marketed at the most likely early adopter communities, the Tablet PC's appeal is likely to be at least as generic as that of the notebook computer. Microsoft's own research, for instance, points to widespread latent demand for

technology that can bridge the gap between the worlds of electronic and pen-oriented working.

In a recent survey of knowledge workers, Microsoft found that 91 per cent regularly take notes by hand. Of these, 26 per cent transfer those notes to e-mail, but 23 per cent confessed to having misplaced their written work before, and 36 per cent said they are positively ready for a

new kind of note taking system. This, and other evidence, says Neil Laver, Microsoft's Windows product marketing manager, leads the company to expect sales of Tablet PCs to number in the "high hundreds of thousands" in Europe this year.

**“THE TABLET PC’S APPEAL IS  
LIKELY TO BE AT LEAST AS  
GENERIC AS THAT OF THE  
NOTEBOOK COMPUTER”**

Certainly, there appears to be no great obstacle to a rapid and widespread uptake of Tablet PC given that, for such a dramatic evolution of the PC format, the challenges it presents to both independent software vendors and systems integrators are minimal.

"There is really nothing about the Tablet PC that provides a major challenge to a software developer or to a customer's IT department. You can treat it as an ordinary laptop," says Mike Pelton, a Microsoft UK support engineer. "The only difference you will notice is that when you download the SDK it has two extra sets of controls which allow you to set up ink edit options for use with the hand writing system, and ink picture controls which will allow you to draw diagrams and to annotate graphics images."

These features will be unfamiliar to users and developers alike but they are not difficult to master, says Pelton, who even appears disappointed by the ease with which early adopters have got to grips with Tablet PC technology. "When they first began to arrive, we set up schedules for ISV's and customers to come down to see us and talk through any problems. After people had downloaded the SDK and the application upgrades, we found they were ringing us to say they wouldn't be coming. They were just getting on with things on their own," he says.

In practice, corporate users will want to customise their Tablet PCs to meet the specific needs of certain staff, and this will require IT staff to delve under the bonnet of the system, but even then the most they are likely to be doing will be applying small tweaks to the systems, says Pelton. Much of the real system integration has already been done by the application developers such as Adobe, Autodesk, Corel, Groove Networks, SAP, Siebel, and Microsoft itself, who are a few of the software companies that already produce Tablet PC-ready versions of their products.



Still, once inhouse development teams realise that the Tablet PC presents nothing to be fearful of, the more adventurous will no doubt seek out new potential in the format, and their likely starting point will be to seek out the subtleties of the device's touch screen technology, and the software which exploits it such as digital ink, and speech and handwriting technology.

The hardware itself, for instance, is sophisticated enough not just to provide clearer definition than we have been used to seeing from pen-based systems, but also to detect variations in pen speed and pressure. This capability allows the Tablet PC to distinguish between the light narrow strokes of normal sketching, and the heavier strokes a user might use to underline a point, or to cross out a mistake.

For its part, the handwriting software supports the concept of "gestures": specialised characters or marks which may have particular significance for certain kinds of user, such as the copy marks used by typesetters and editors, or the Greek symbols used by mathematicians. A Tablet PC can be configured not only to recognise these gestures and to render them cleanly on the screen, but also to act upon them. It is supplied complete with a range of gestures that can be turned on or off as required, but some development teams may wish to add new gestures suited to their own users, or ascribe new significance or actions to existing ones.

There are probably many other areas of potential innovation open to Tablet PC users, Pelton believes, and as the device gains traction in the market some are bound to find their way into mainstream use, having originated in some peculiar places. But wherever it comes from, the long awaited new killer app for the PC may very well have no use at all for a keyboard.

ILLUSTRATION: TERRY COLON

## WHERE NEXT:

If you want to find out more about the Tablet PC and developing applications for it, please visit both [www.tabletpc.com](http://www.tabletpc.com) and [www.tabletpcdeveloper.com](http://www.tabletpcdeveloper.com)

# WHEN YOUR NUMBER IS UP

The software industry has a bad reputation for leaving customers in the dark when it comes to lifecycling products. A new open approach to product support lifecycle policies should come as a refreshing change.

**AS THE WORLD WAS TOASTING** the passing of 2002 last New Year's Eve, Microsoft was "retiring" its mainstream support packages for Windows 95, Windows NT and a variety of other older business and consumer software products. Although these retirements might come as a shock to a few customers who missed Microsoft's announcement of its new support lifecycle policy last October, they can at least take comfort in the fact that the policy should mean there are no more nasty surprises to come in the future. Very few companies publish a full product lifecycle schedule for all their products, a fact which has become somewhat of a bone of contention among IT professionals. Should more follow suit, it might go some way to improving the less than customer-friendly reputation that certain quarters of the industry have acquired over the years.

Certainly, Lars Ahlgren, Microsoft Services' senior marketing manager for EMEA is prepared to admit that, "in some respects the software industry has been really bad about this [lifecycle scheduling]. It has been too self-centred, and not given customers adequate advance warning of support changes for fear of affecting sales."

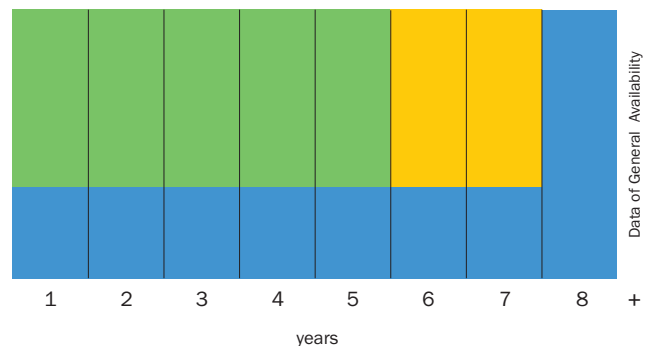
At least in the case of the products closest to the top of Microsoft's list for support retirement, it is difficult to see how early warning of a change to their support status could really affect sales. Windows NT 4.0 debuted in July 1996 and has long since been succeeded by newer versions to which the great majority of customers will have already migrated. In 2001, Microsoft announced support schedules for some of its products on an individual basis. But this announcement was not really taken up by the general public. Windows NT 4 Server and Workstation were given end-of-support dates along with Windows 98 and Office 97. This idea of support dates evolved to the Microsoft Support Lifecycle (MSL) schema of 5+2 years that was announced last October. Other products approaching support retirement are even older. The products with already announced support schedules however were not refitted with the MSL schema, but kept their original dates.

The old policy was dependent on a newer version being available on the market. Microsoft supported the two newest versions, which enabled customers to have a choice in their migration but not much predictability over time. In the case of NT 4 Server, support will be extended throughout 2004. This gives customers and third party solution providers the time needed to migrate to the Windows Server 2003 platform which becomes available later this spring.

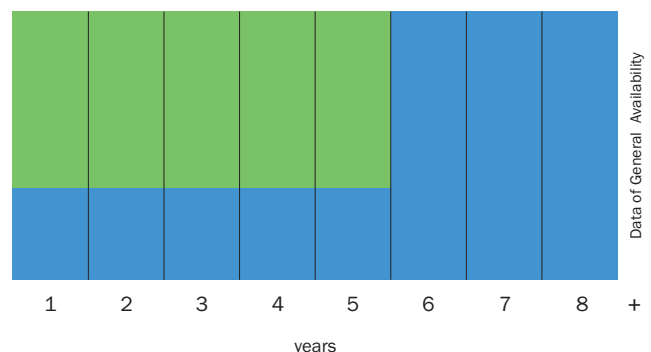
As a general rule of the new policy, Ahlgren says, all Microsoft products will be scheduled to lose mainstream support on the fifth anniversary of their launch date. Customers will then have the option of signing up for a further two years of extended support within 90 days of the mainstream support's retirement. However, no-charge assisted support will not be available under an extended

## Product Support timelines

Business and development software



Consumer/Hardware/Multimedia software



- Mainstream support phase
- Extended support phase
- Online self-help support

support agreement.

Previously, some Microsoft products have enjoyed mainstream support for longer than five years in some markets, so the new guideline on this option may seem harsh. However, part of the reason d'être for the new support lifecycle policy is to do away with these kinds of global inconsistencies, so that all customers will know what can be expected for all products in all countries soon after the product launches. "We've now published a schedule that allows everyone to predict what support they will have for all our products and services over time, so they can plan and budget accordingly," says Ahlgren.

## WHERE NEXT:

[www.microsoft.com/uk/support/lifecycle](http://www.microsoft.com/uk/support/lifecycle)



# DESTINATION .NET

Despite Microsoft's efforts to publicise every facet of its latest software architecture, some customers are still viewing it as a potentially unwelcome journey into the unknown. Phil Jones talked to principal .NET systems engineer Tim Sneath, about why there should be no fear or loathing on the road to .NET.

**WITH JUST A FEW MONTHS TO GO** before the launch of .NET Server and with .NET Framework nearing the first anniversary of its release, the time is fast approaching when even the most conservative developers and users should be turning their attention to a future based on Microsoft's latest software architecture. The many thousands who have already downloaded .NET Framework will testify that there is much to celebrate about Microsoft's latest system software products, but both for them, and especially for those that have yet to take the .NET plunge, there is still much to learn about Microsoft's vision of software development in the internet age.

Certainly, for anyone still standing at the bottom of the .NET learning curve, just grasping what .NET is all about is likely to be the first problem they find themselves wrestling with, because in its broadest sense, .NET is about a lot more than just a new way of writing code - it is a vision of an entirely new way of looking at the world of computers and information. Not surprisingly then, says Tim Sneath, principal systems engineer with Microsoft UK's .NET developer group, "everyone seems to have a different idea about what it is. There seems to be quite a bit of confusion at the moment."

Officially, Microsoft describes .NET as "software that connects people, information, systems and devices" - a definition that could arguably be applied to virtually any modern software. However, according to Sneath, the true significance of this definition becomes clearer when it is realised that the emphasis lies on the word "connection" and by connection, we mean the internet.

"For the last five years, and probably for the next five years too," says Sneath, "the internet has and will continue to be the biggest single influence on the evolution of software and software development." The recognition that systems do not exist in isolation from one another, and, in particular, that the data they feed on

is routinely distributed throughout the internet, must inevitably have a profound effect on how commercial systems are designed and implemented.

To some extent this was first recognised in the nineties when "distributed development" became a buzzword for the software community. In reality though, people were still largely building monolithic systems that were only loosely and connected at a data level. Today, says Sneath, "real distributed development is where it's at," where different systems are brought together to solve one business problem, sharing logic as well as data. Real distributed development, he says, is not an issue of systems integration, and it's not a monolithic approach based on a single server. It is about combining aspects of different applications to solve problems, and brings with it dramatic new concepts which may initially intimidate developers, but will ultimately empower them as never before.

In the near future, Sneath believes, technologies such as UDDI (the Universal Description Discovery and Integration protocols), which .NET embraces and contributes to, will enable systems to dynamically hunt out all manner of logic and data resources across the internet, allow-

ing them to interact with one another almost without programmer intervention. However, to get to this future, there is still the small matter of coming to terms with a variety of new concepts, which, in Microsoft's world, means mastering .NET.

There are three "key pillars" to the .NET vision: the .NET Framework itself, a rich application development environment built from the ground up to facilitate the design and construction

**"REAL DISTRIBUTED  
DEVELOPMENT WILL EMPOWER  
DEVELOPERS AS NEVER BEFORE"**





of applications geared to exploiting the internet age; XML Web Services, a textual technology that is likely to be the key systems integration medium of the next decade at least; and, smart clients, a raft of interface and formatting technologies whose existence acknowledges that in the internet world, end users may be as likely to access systems from their mobile phone, or via their car dashboard, as from a desktop PC equipped with monitor and keyboard.

Between them, these three key pillars will be the foundation for a new generation of internet computing, but the key impact for developers will probably be the discovery of CLR, the common language runtime technology which is at the heart of the .NET Framework.

The CLR provides a managed execution environment. This is a major evolution on the old COM approach, which only described interfaces and class libraries at a specification level. In the CLR, says Sneath, "there is strong code management, based on an understanding of the dependencies created by your application; you don't have to do all the legwork yourself to create and manage classed and interfaces." Indeed, in many respects, the CLR resembles an amazing labour-saving device for programmers, and even comes complete with its own in-built garbage collector.

The CLR garbage collector does exactly what its name suggests. It relieves developers from the burden of manually tracking resources that their programs access, so that they can be released again when no longer required, by essentially following on behind them and tidying away redundant resources while the programmers

get on with more important work. It is a role that Sneath believes will "alleviate a whole class of bugs around memory and resource leakage," and makes the CLR an attractive addition to the programmers armoury on its own. But that's not all that the CLR does.

For Visual C++® users, for instance, the use of a technique called try/catch handling within the CLR dramatically streamlines exception handling and makes debugging much simpler by replacing obscure error numbers with more explicit information about the nature of any fault. Also, the CLR's common type system, which works across all the .NET languages (C++, Visual C#™ and Visual Basic® and, later this year, Visual J#™) polices programming activity and ensures that byte arrays are never coerced into strings, for instance.

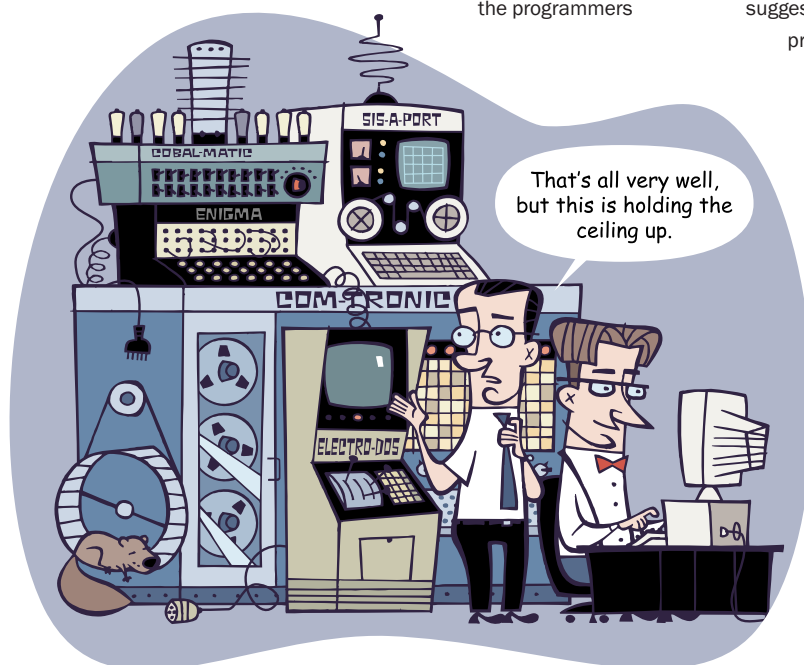
These and other productivity enhancing features will make the .NET Framework attractive to many developers, but they are not its only – or even necessarily its most important – role. As the underpinning of the .NET Framework, the CLR is also host to the .NET Assembler and intermediate language (IL) which will ensure .NET's future hardware platform portability, which is likely to be a key feature in several years time when the migration from 32-bit to 64-bit computing begins in earnest, and when entirely new breeds of silicon appear in devices such as PDAs and mobile handsets.

For today's Visual Basic and C++ programmers, the rich panoply of resources and features contained within .NET Framework are likely to prove both a mouthwatering and a daunting prospect, but the early experience of the developer community suggests that, despite its richness, the .NET Framework is surprisingly easy to digest.

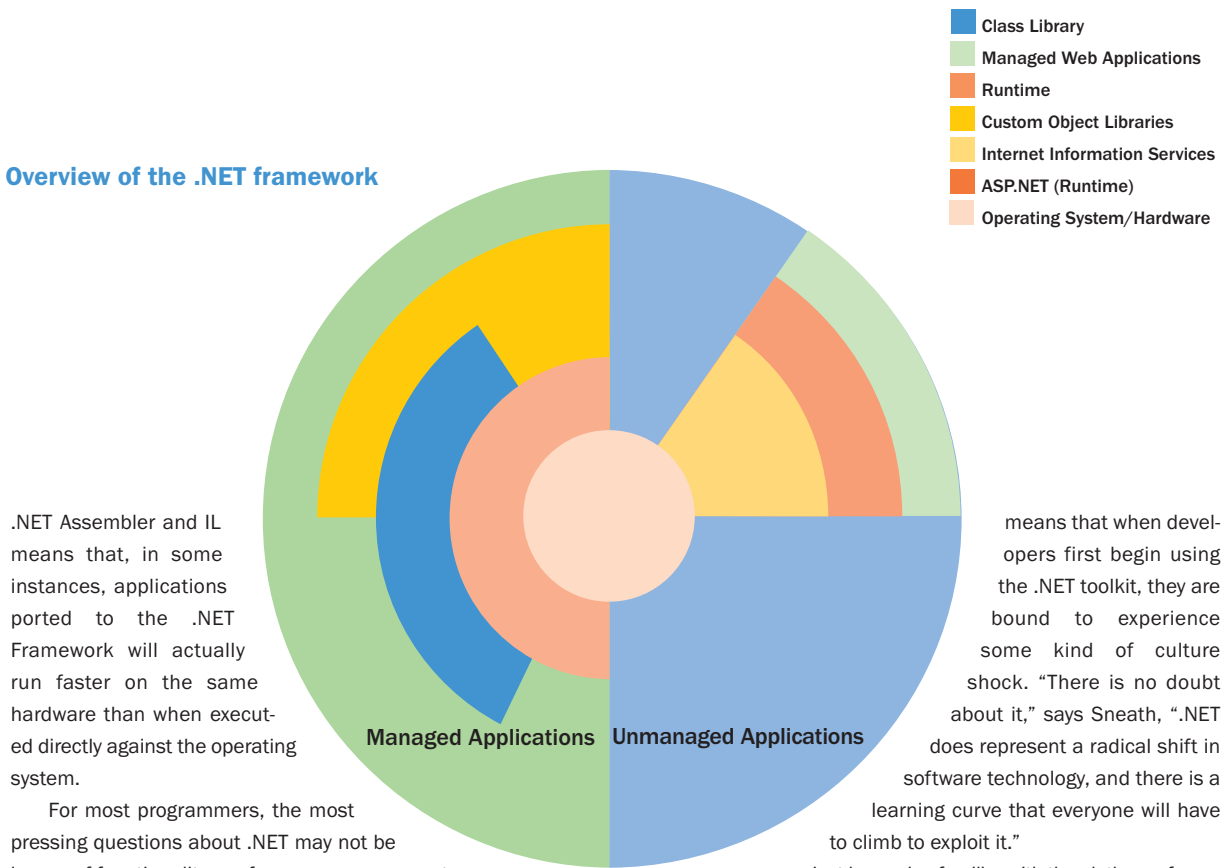
From the outset, for instance, Microsoft has made it both easy and cheap for interested developers to acquire the necessary software. "We have made it possible for people to get started with .NET without spending a penny," says Sneath, as the .NET Framework SDK itself is available as a free download from the web. The same is true of the .NET Framework redistributable, the .NET Frameworks' universal client identity, which is also available as a Windows update contained within XP Service patch 1.0. Both, of course, will also be packaged with .NET Server when that appears later this year.

Nothing about the .NET code base is particularly large or resource hungry either. The .NET Framework Redistributable client software weighs in at 20MB, about the same as the VB 6.0 runtime. Although the .NET Framework acts as an extra abstraction layer between the operating system and the application, the code optimisation employed with

ILLUSTRATION: TERRY COLON



## Overview of the .NET framework



For most programmers, the most pressing questions about .NET may not be issues of functionality, performance or even cost.

Rather, they are about how easy or difficult will it be learn to use .NET technology, and in particular the .NET language, C#. Software developers by nature generally enjoy playing with new technology, but no one really likes to be forced to completely relearn their jobs or, in particular, completely leave behind skills they have built up through using established tools.

The good news is that .NET does not force developers to do either, and has actually been designed to accommodate the skills of both the major Windows programming communities who work around C++ and Visual Basic. Microsoft believes that eventually "C# will be the enterprise development language of choice, and is already the language that many enterprises are choosing for large scale application development," says Sneath. However, in no sense will either the VB or C communities be forced to jump to the new language before they are ready.

For the C++ community, this may not be very long in any case, since C# simply elaborates on concepts and features with which they are already familiar. VB users may find the differences between the two languages more distinct, but to quell their worries, Microsoft has already prepared Visual Basic .NET to provide a simple rapid application development (RAD) stepping stone into the .NET world, and has also committed to retaining VB 6.0 for at least another ten years. "C# and Visual Basic are still very much treated as peer languages by Microsoft," says Sneath.

Nevertheless, the fact that .NET has been designed to enable a radically new approach to systems design and implementation

Just becoming familiar with the plethora of components, software wrappers and interfaces that come bundled with products like .NET Framework will require a significant effort on the part of C++ and VB users alike, and each community will also face individual challenges of their own. For the C++ community, says Sneath, this challenge may actually be to "unlearn" habits that they have developed over the years, particularly the expectation that class libraries and components always have to be custom built for every occasion. For the VB community, .NET and C# sharp may require them to embrace aspects of large-scale development practice which their RAD world has largely sheltered them from in the past.

Ultimately though, Sneath believes that C++, Visual Basic and even Java programmers (when Visual J# appears later this year), will find the path to .NET a relatively smooth and painless one. As with most long journeys, the most difficult part will be making the decision to start.

## WHERE NEXT:

If you would like to find out more about developing .NET application go to: <http://msdn.microsoft.com/net> and [www.gotdotnet.com](http://www.gotdotnet.com)

To read more about .NET in action, go to: [www.microsoft.com/uk/fyitechnology](http://www.microsoft.com/uk/fyitechnology) for a case study booklet, with examples from Nationwide and Royal Mail.

# SHAKE OFF THE CHRYSALIS

A joint initiative with Hewlett-Packard is just one factor in a drive by Microsoft to provide highly available, highly reliable enterprise class solutions and, in so doing, move itself squarely into the business critical computing space.

**LAST NOVEMBER, MICROSOFT AND HEWLETT-PACKARD JOINED FORCES** to launch the Availability Partnership for Windows. The services-led initiative will enable Windows users to realise the same levels of 24 x 7 reliability that have traditionally been associated with proprietary mainframe and Unix systems. The joint initiative should provide the key that will unlock the door to the data centre for Windows.

For over a decade now, according to Peter Cummins, Microsoft's head of business critical consulting, the company has invested a major part of its software engineering resources in building a genuinely enterprise class set of products and there is lots of evidence today that it has been a successful effort.

Today says Cummins, Windows 2000 and, soon, Windows Server 2003, offer everything that can be expected of business critical computing platforms. Microsoft has stripped out the myriad device drivers and other subroutines that plagued earlier versions of Windows server operating systems with destabilising calls to the kernel, and equipped the new products with a full suite of fault remediation, disk management, security features and other internal systems management features. At the same time, by working with OEMs, multi-node processor configurations and hardware clustering software have been added to address high-end capacity demands.

Partners such as Stratus and Unisys, Cummins points out, have also brought their experience of fault-tolerant and mainframe engineering to harden the Windows server platform even further. Stratus, for instance, now guarantees 100 per cent uptime on some of its products, and Unisys offers systems rated to around 99.999 per cent – the fabled five-nines reliability which has been the benchmark of truly highly-available systems since the technology first appeared.

The next challenge is to convey Windows' potential as a high availability business critical platform to the market. The aim is to heighten awareness of the fact that Microsoft, in transforming its technology platform to meet the business critical computing challenge, has also performed a significant business metamorphosis of its own.

"Microsoft is now a mainstream application server vendor, supporting business critical services that generate large volumes of transactions executed against large volumes of data for thousands of customers," says Cummins. "As a company we recognise that this means we are competing in a very different world from the desktop market where we had our roots. The

argument for us today is not about product features, it's about an altogether more complex proposition concerned with scalability, manageability, availability and security," says Cummins.

"We as a company, and our whole business proposition have evolved over the last several years, but the perception of Microsoft in the market place has not kept pace with this evolution. It is a mindset problem," Cummins believes. Most of the company's customers are used to viewing Microsoft products as a quick and inexpensive means of achieving a specific goal, and simply don't expect to have to invest the same time and effort implementing Windows that they would routinely devote to another vendor's product.

As a consequence, "too few enterprise customers treat Microsoft with the same respect that they treat our Unix rivals," says Cummins: a situation which is potentially as wasteful for them as it is frustrating for him.

Clearly, rooting out such ingrained attitudes is not an overnight job, and requires more than creating new technology to throw at the problem. Instead, Microsoft has enlisted the support of its biggest hardware partner, and one of the world's most respected business systems suppliers.

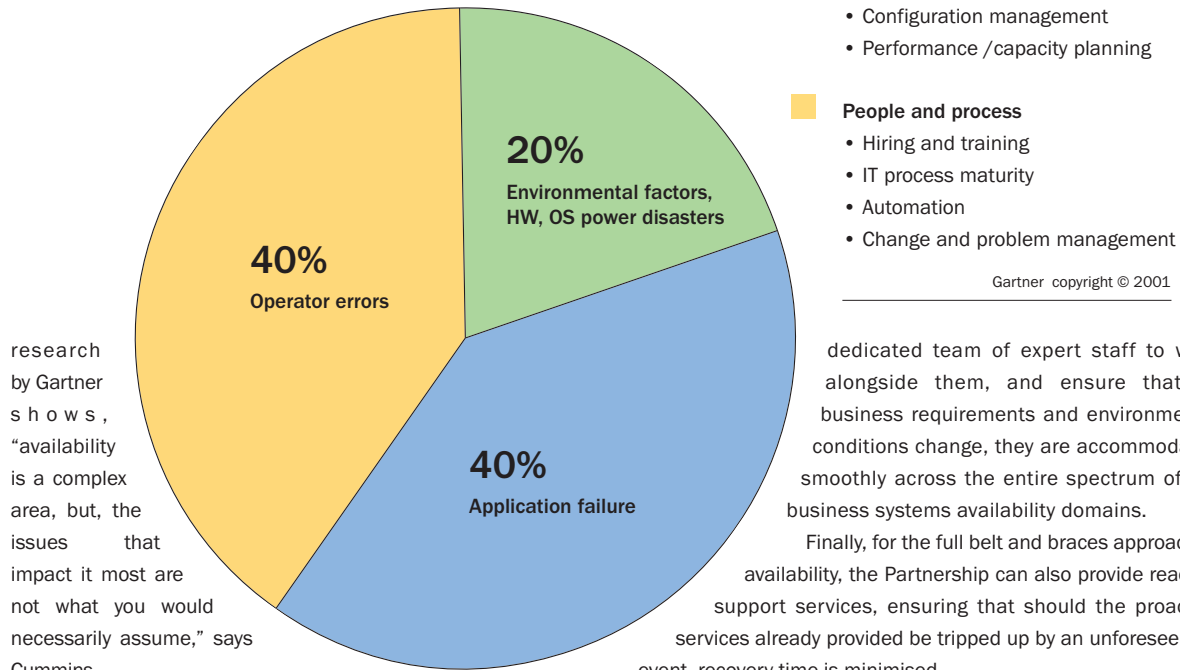
From a marketing perspective, just being able to draw on HP's wealth of experience in building mission critical computing systems will go some way to breaking down the scepticism Windows faces in the data centre, but the Availability Partnership is much more than just a joint marketing exercise.

As customers who choose to exploit it will find out, together Microsoft and HP have condensed 40 years of mainframe and software engineering expertise into a detailed methodology and service offering. This aims to both provide service deliverables to help users achieve their goals, and to educate users from outside the mainframe world in the arcana of high availability systems management.

When customers first apply to the Availability Partnership, some will be surprised at how little emphasis is placed on traditional concerns about hardware and operating system weaknesses. As



**Figure 1. Factors contributing to downtime**



research by Gartner shows, "availability is a complex area, but, the issues that impact it most are not what you would necessarily assume," says Cummins.

Indeed, according to Gartner 80 per cent of downtime can usually be traced back to either operator errors or application failures (see fig 1). In both cases, the failures stem from people and process flaws such as poor change management, insufficient training, faulty application architecture design and poor configuration management. In other words, human error plays a bigger role in systems failure than technology flaws.

For this reason, the starting point for an Availability Partnership service is an availability assessment, a comprehensive audit not only of the systems that customers have but also of the goals they are trying to achieve and of the people and processes employed to do so.

A sense of the thoroughness of the Availability Partnership approach can be gained from viewing the availability domains defined in fig 2. This seven layer model covers every part of the technology and service chain which delivers systems functionality from the hardware to the end user.

Obviously, says Cummins, if customers genuinely want to achieve operational excellence, each one of these availability domains has to be dealt with as thoroughly as every other, and HP and Microsoft experts will help ensure a holistic approach to availability.

Following the completion of the availability assessment, the Partnership offers three other broad areas of service. Customers seeking assistance with availability implementation, for instance, can call on HP and Microsoft consultants to work with them to design and implement systems addressing issues identified by the assessment.

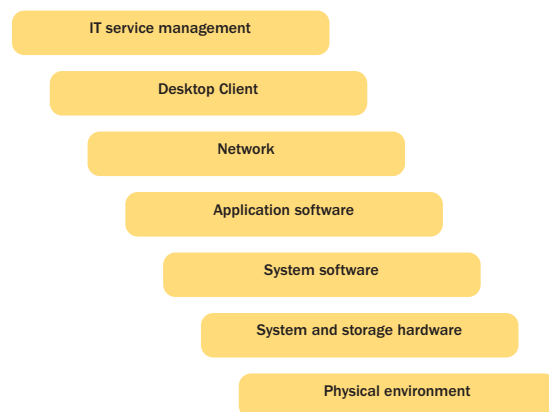
With these in place, the Availability Partnership itself comes into play. Customers can expect HP and Microsoft to provide a

dedicated team of expert staff to work alongside them, and ensure that as business requirements and environmental conditions change, they are accommodated smoothly across the entire spectrum of the business systems availability domains.

Finally, for the full belt and braces approach to availability, the Partnership can also provide reactive support services, ensuring that should the proactive services already provided be tripped up by an unforeseen for event, recovery time is minimised.

At the end of any Availability Partnership, some customers may feel that many of the procedures and techniques employed by Microsoft and HP are already known to them, and some certainly already exist in templates such as Microsoft's own MSA (Microsoft Systems Architecture) descriptions – but not all of them and not in such detail.

**Figure 2. Availability domains**



Others may feel that the obsessive attention to detail enshrined in the Partnership methodology runs counter to their expectations of what working with Microsoft technology is supposed to be about. But that is partly the point. As Cummins believes too many users have still yet to realise, "if you want Windows to behave like a mainframe system, you have to treat it like a mainframe system."



Inbox



Calendar

# THE EXCHANGE

When a company develops applications for use on mobile devices, should it hold them on the server or put them on the devices themselves? We eavesdrop on an e-mail exchange between two developers on the pros and cons of each approach.

**To...** rickthewalker@cdyoubc.co.uk  
**From...** joezantanello03@hotmail.com

Hi Rick,

Wanted to pick your brains 'cos I know you guys have been using mobile apps for a while now and the management here has just told me they want to start doing some development. From what I can see it looks like you have to decide whether the app's gonna sit on the server or the device and there's a bit of a debate raging here. Reminds me of the old network computer vs. powerful desktop argument in the nineties. What are your thoughts?  
Joe Zantanello

**To...** joezantanello03@hotmail.com  
**From...** rickthewalker@cdyoubc.co.uk

Hiya Joe,

You're right, it's similar to what was being proposed for the development of personal computers a few years back. However, the whole mobility paradigm changes the argument. Whereas in the desktop world it was almost a philosophical question, with mobile apps it all depends on the kind of application and the kind of device.  
Rick

**To...** rickthewalker@cdyoubc.co.uk  
**From...** joezantanello03@hotmail.com

So are you saying that at your company you haven't had to come down in favour of one approach or the other?  
Joe

**To...** joezantanello03@hotmail.com  
**From...** rickthewalker@cdyoubc.co.uk

Exactly. The fact is that scenarios differ greatly. Let's take the hardware: if you're developing to target a variety of simple devices (eg most 2G or 2.5G hadsets), there's just not the processing power at the device level to run rich client applications, so you'll need to keep the application back at base and simply use HTML/WAP etc to project the user interface out to the browsers on them. If on the other hand you're looking at powerful devices (laptops or Pocket PC phones for example), accessing the network remotely, they'll have the clout to handle rich clients. Then there's the software itself. If the mobile app is just an online game with devices sending simple instructions, like "queen takes king's pawn; check," it can sit on the server no problem. If on the other hand it's Excel spreadsheets, you don't want to be editing them online, so having a rich interactive experience on the device makes sense.

**To...** rickthewalker@cdyoubc.co.uk  
**From...** joezantanello03@hotmail.com

OK, but if I opt for the server-based or the smart client solution, won't I be stuck with it?

**To...** joezantanello03@hotmail.com  
**From...** rickthewalker@cdyoubc.co.uk

Not necessarily. Certainly Microsoft allows you to mix and match, depending on your company's shifting requirements. They have the ASP .NET Mobile Web Application facility within Visual Studio for the server-based approach and the .NET Compact Framework to develop rich on-device applications for online and offline access. The beauty of it is that the back end can be the same for both, with the front end user experience being served up from base in the former scenario, while in the latter it resides on the device.

That answer your question?

**Does it? Would your answer have been the same? Go to [www.microsoft.com/uk/fyitechnology](http://www.microsoft.com/uk/fyitechnology) and let us have your thoughts.**

# Microsoft IT Professionals Resource Guide

Use this quick reference guide to take advantage of the wealth of resources available to help IT professionals be successful with Microsoft products and technologies

## COMMUNITY RESOURCES

### MICROSOFT TECHNET ONLINE

Information and community resources for IT professionals. Keeps you informed about Microsoft strategies and industry trends, providing "how-to" information. Serves as a forum to share information, ideas, and opinions with your peers in the IT community and with Microsoft.

### MICROSOFT TECHNET NEWSLETTER

Bi-weekly newsletter delivering information and highlights on technology issues, trends and events direct from Microsoft.

### IT PROFESSIONAL USER GROUPS

The TechNet User Group Program provides information and support to Information Technology Professional user groups and special interest groups.

### IT PROFESSIONAL NEWSGROUPS

Exchange ideas with other professionals, look for suggestions or answers, or supply some answers yourself.

### TECHNICAL CHATS

Chat with experts on important technology issues.

### TIPS FOR TECHIES

Share favourite tips on optimising, saving time, troubleshooting or similar topics.

### REAL PROBLEMS – REAL SOLUTIONS

Problems that other IT Professionals have faced and how they have overcome them.

### TECHNET TOP TEN QUESTIONS

Microsoft Support Professionals provide you with detailed answers and tips to questions submitted to Microsoft.

## SKILLS

### MICROSOFT SKILLS WEB SITE

A one-stop shop for Microsoft training information. Train in the style that suits you – from three hour interactive workshops to in-depth solutions-based training. Subsidised courses and flexible online learning opportunities offered.

### MICROSOFT CTECS

Microsoft Certified Technical Education Centres are the only organisations recommended by Microsoft for technical Training. They provide instructor-led hands-on training on a range of Microsoft products and solutions.

### FIND A COURSE

Use this tool to find the right course (and venue) for you, view the course syllabus or related exam information.

### MICROSOFT HANDS-ON LABS

Interactive technical workshops designed to help you discover the essentials of Microsoft products.  
Call 0870 166 6670

### MICROSOFT TECHNET EVENTS

Come to a TechNet Roadshow, Spotlight Session or evening event, or access our events library for archived presentations.

### MICROSOFT CERTIFIED PARTNER PROGRAM (C)

Global programme designed for independent companies providing Microsoft-based IT services and products to corporate, government and small or medium-sized businesses.

## SUPPORT & SERVICES

### MICROSOFT UK HELP AND SUPPORT WEB SITE

Whether you're setting up a new network, troubleshooting a technical issue or developing a customised application, this site is the one-stop shop for your technical support needs, including:

### MICROSOFT KNOWLEDGE BASE

Search more than 250,000 constantly updated technical articles created by Microsoft Support Professionals.

### MICROSOFT PUBLIC NEWSGROUPS

Collaborate online with other Microsoft product users globally.

### MICROSOFT SUPPORT WEBCASTS

Watch live presentations by Microsoft Support Professionals on new technologies, deployment and development scenarios.

### MICROSOFT TECHNET CD/DVD SUBSCRIPTIONS (C)

Annual subscription providing monthly updates containing the latest Microsoft service packs, resource kits, white papers as well as exclusive access to online support services and managed newsgroups.  
Call 0800 281 221

### MICROSOFT INCLUSIVE INCIDENT BASED SUPPORT

1 Microsoft Certified Partners receive a free professional 5 incident pack  
2 MSDN subscribers receive inclusive support incidents (excludes MSDN library)  
3 Microsoft provides two free support incidents (excluding MSDN library).  
4 Microsoft volume licensing programmes include free support for some products, for example Multi-Year Open and Open Subscription Licensing.

### MICROSOFT PROFESSIONAL SUPPORT (C)

Provides telephone or online incident-based technical support for Microsoft products.  
Call 0870 60 10 100

### MICROSOFT SERVICES PREMIER SUPPORT (C)

Provides the largest enterprises with a flexible, managed, direct relationship with Microsoft, giving the highest level of proactive onsite support and technical expertise.

### HELP FROM MICROSOFT EXPERTS (C)

If you are looking for a partner to help with your IT project contact a Microsoft Certified Partner or Gold Certified Partner as they have proven expertise in leading-edge technology, having met strict Microsoft certification criteria.

## ADDITIONAL RESOURCES

### STRATEGIC TECHNOLOGY PROTECTION PROGRAMME

Provides resources to help you build and maintain a secure network:

- 1 Subscribe to the Microsoft Security Alert Notification.
- 2 Order the free Security Resource Toolkit
- 3 For free virus support.  
Call 0870 60 10 100
- 4 Visit the Trustworthy Computing web site.

### MICROSOFT PRESS PUBLICATIONS (C)

Provides a wide range of books on the planning, deployment and maintenance of Microsoft products; on self paced training and e-learning training kits.  
Call 0870 60 10 100

### MICROSOFT PRODUCTS & TECHNOLOGIES

See articles, downloads, support information and resource kits on Microsoft products and technologies.

### DOWNLOAD RESOURCES

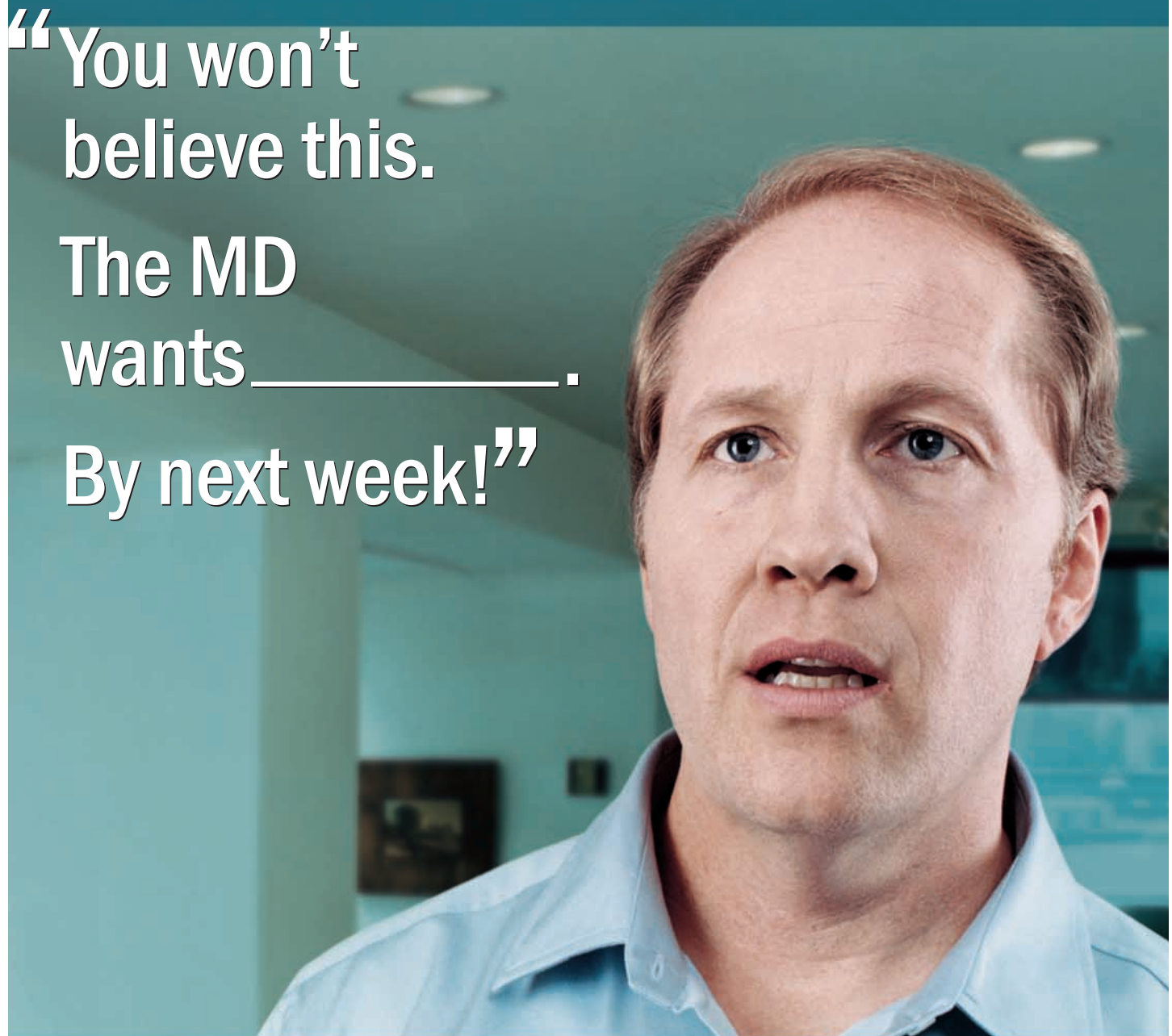
Central repository of Microsoft download resources for IT Professionals.

To access these resources visit  
[www.microsoft.com/uk/technet/itproguide](http://www.microsoft.com/uk/technet/itproguide)

Or Call 0870 60 10 100

C = chargeable

**Microsoft®**



“You won’t  
believe this.  
The MD  
wants \_\_\_\_\_.  
By next week!”

**Get your infrastructure ready for anything.**

To you the impossible is a daily request. As if you didn't have enough on your plate: relentless hackers, massive usage spikes, frantic requests from your MD. All on a 24x7 basis.

That's why you need to keep your infrastructure ready for anything. Even\_\_\_\_\_.! And that's exactly how the Microsoft platform is designed to help you.

Even better, the Microsoft platform delivers the security, scalability, reliability, interoperability and manageability your infrastructure needs to handle the unexpected. Or even the\_\_\_\_\_!

For more information on how to prepare your infrastructure for just about anything, visit [www.microsoft.com/uk/abilities](http://www.microsoft.com/uk/abilities)

**Software for the Agile Business.**

**Microsoft®**