interACTIVE

HP and Audi – a winning team

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Contents

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Letters to the Editor

You will notice a focus in this issue of *interACTIVE* on quality and reliability. Just as these two critical elements have always been of paramount importance in the design, manufacture and support of HP products, so too are they vital in our customers' businesses.

In this, the 6th edition of *interACTIVE*, we discuss PC storage and backup reliability and the many factors besides hardware failure that can cause crippling data loss.

We also examine the definition of print quality, particularly in relation to colour inkjet printers, and explain HP's Print Quality Advantage.

Other articles in this issue look at how HP products are adding value to the diverse businesses of our customers, including AMPAC Life, Audi Motor Sport and the RAAF.

I look forward to your comments on this issue.

Adrian Weiss
Editor

Thank you for your letters and comments in response to the 5th issue of InterACTIVE. Many readers commented favourably on the "new look" InterACTIVE. Other letters focused on individual articles, and some on specific new HP products.

The winning letter, below, came from Chris Grylls, of Core Specific Hospital Systems Consultants. Chris wins an HP OfficeJet LX printer/fax/copier. Congratulations Chris, and thanks for your letter.

Dear Adrian,

Thankyou for your great magazine interACTIVE. Unfortunately this is the first time I have received a copy, so I am sure that I have missed out on some great reading in previous issues. I found it very useful to be able to read about your latest product releases and yet find this very nicely balanced with other articles of both technical and human interest; particularly when you are aware of the business concerned. I refer to the very interesting article on Chris Hales Imaging.

Being an avid HP printer user, and noting the release of three new models in this issue, one of the things which is causing me concern is the fact that in this fast moving world of IT, we often make great advances on the one hand and yet take two steps back on the other. I refer to the forthcoming Windows 95 release (of which I have no actual hands on experience yet) and to Windows NT 3.5. Having just moved across to the Windows NT 3.5 platform, I find to my great dismay, that this great operating system, whilst it contains drivers for HP printers, does not contain a driver which is in any way comparable to the ColorSmart driver. The end result is a poor print job from my DeskJet 550C, when I know that its output can be really quite impressive. Hopefully one day we can get it right and go forward with both feet.

Thanks again for a useful and informative publication. I look forward to the next issue.

Yours sincerely,

Chris Grylls

Audi Sport and HP *a winning team*

Hewlett-Packard Australia and Audi Sport have teamed up to provide state of the art computer technology for this year's round of the Australian Super Touring Championships – and beyond.

The team's two Audi 80 Quattro competition sedans, driven by Brad Jones and Greg Murphy, rely heavily on Hewlett-Packard computers for testing and race-tuning the highly sophisticated German machines.

The Audi Sport Australia ORIX team utilises four distinct models of HP's extensive computer range, with each one critical to the team's success.

The HP OmniBook 4000CT 4/100 Notebook PC is a compact, rugged portable computer used specifically for analysis of on-board chassis and engine data at the race track. This data, once recorded and stored in the race car's on-board computer, includes vital tuning information relating to wheel speed, engine power, the longitudinal and lateral G-force and suspension travel.

This information is down-loaded to the HP OmniBook and analysed by team engineers, allowing decisions on any changes to the car to be made quickly and accurately. The Audi Sport team also employs the HP OmniBook 4000CT 4/75 Notebook PC specifically for

Audi Sport Australia ORIX team engineer Richard Hollway (left) and driver Brad Jones study data, courtesy the HP OmniBook 4000CT 4/100 Notebook.

"The Audi 80 Quattro is one of the most advanced and sophisticated racing cars in the world, so we need the latest in computer technology to get the best out of them and Hewlett-Packard delivers," he said.

Back at team headquarters in Albury, NSW, the enormous computing power of Hewlett-Packard's HP Vectra VE 5/90 desktop PC is the backbone of Computer Aided Drafting (CAD) systems, engine dynamometer development and detailed post-race analysis of all essential data.

Audio Sport also use an HP Vectra VE 4/66 desktop PC to handle a multitude of office requirements, providing valuable backup support in administration and accounting systems, greatly reducing the paperwork and time requirements of team members responsible for these tasks.

"...we need the latest in computer technology ... and Hewlett-Packard delivers"

lap scoring, timekeeping and producing any documentation that may be required during a race meeting.

Audi Sport team manager Kim Jones said the unparalleled technology and customer support provided by a global leader in computer manufacturing was a key element in maintaining the team's competitive edge.

"The diverse technical demands of our operation prove that HP has a computer package to suit every application and budget."

- For further information contact: **Sally Bewsher,** *Audi Sport Australia ORIX Team*

  (612) 968 4500, or **(019) 644 227.**

RAAF flies

he Royal Australian Air Force is expected to realise a 300 per cent increase in speed on its Logistics Analysis systems following the installation of a series of Hewlett-Packard 100VG-AnyLAN systems.

At a cost of around $1 million, the RAAF is in the process of installing 100VG hub networks at 10 sites around Australia to support a suite of memory intensive and wide-band logistics management programs, under the RAAF's CAPLOG project.

Flight Lieutenant Slade Beard, a logistics systems analyst and CAPLOG application configuration manager, said the existing 10 Mbit/s Ethernet network was inadequate for the task, with some processes taking three hours to complete.

"The bad response times weren't the only problems," said Beard. "The application was using 75 per cent of the available bandwidth for periods as long as two minutes, and without network segmentation, other users on the LAN either couldn't get on it or faced long delays."

"HP100VG - AnyLAN offers network segmentation and eliminates network collisions"

The CAPLOG's application suite is used to itemise each piece of ground and air equipment and perform logistics support analysis on those items to determine the optimal logistics support solution for the weapons system.

On an F111 aircraft for example, there are 22,000 components; the file begins at 300 MB in its basic form and when completed could grow to as much as one Gigabyte.

"Recoding software to rectify the situation wasn't an option, so we took the hardware solution," said Beard. "Select Computer Technologies won the tender and provided a system that included Pentium-based Digital

even *faster*

Celebris workstations operating at 100 MHz and Digital Prioris 90 MHz servers, coupled with the HP 100VG network."

The HP 100VG-AnyLAN network doesn't require any new cabling, sits over existing software and hardware and is compatible with emerging standards such as IEEE 802.12 and ATM. Each site will have one 100VG hub with an additional unit located at Logistics Command Headquarters at RAAF Williams in Laverton, Victoria.

With up to 150 users per site using the existing network, the HP system offers network segmentation for the CAPLOG users and eliminates network collisions caused by the CAPLOG users.

Operating at 100 Mb per second, 100VG-AnyLAN consists of a central hub or repeater, with a link connecting each node – creating a star topology.

The hub is an intelligent central controller that manages network access by continually performing a rapid "round robin" scan of its network port requests, checking for service requests from the attached nodes.

The hub receives the incoming data packet and directs it only to the port with a matching destination address, providing inherent network data security.

Laboratory tests undertaken on all tender submissions demonstrated the Hewlett-Packard system could deliver a 300 per cent improvement in speed.

The HP network will also ensure smooth integration with HP OpenView, which the RAAF has selected as its network and systems management package.
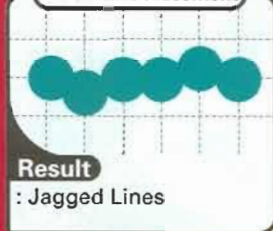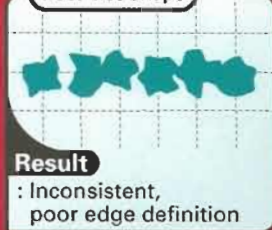
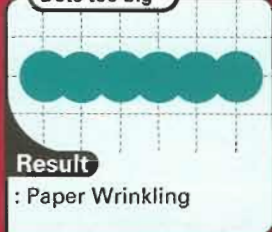**Sergeant Paul Smith connects the HP 100VG network**

Dots too small

Result
: Broken lines, Poor fill

Inaccurate Placement

Result
: Jagged Lines

Poor Dot Shape

Result
: Inconsistent, poor edge definition

Ink Bleeds

Result
: Fuzziness, poor colour

Dots too big

Result
: Paper Wrinkling

Pen Plug up

Result
: Banding, broken lines
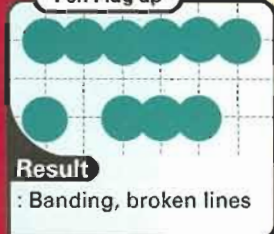
*P*rint quality is more perception than specifications. Defined by characteristics such as smoothness, sharpness, blackness and vividness, print quality actually is a subjective judgment for which there is no single specification.

Ultimately, a consumer must look at a printer's output before making a purchase decision. Is black text dark and crisp? Are images clear with high contrast? Do colour area fills look grainy or smooth?

Dots-per-inch, an aging standard:

In the printer market, print quality is judged most often by one specification: dots per inch (dpi). Dpi refers to how many individual ink dots can be squeezed into a horizontal and vertical grid of 1 square inch. For example, a 600 x 600 dpi measurement means that 360,000 dots can be placed within a square inch of media. Dpi has become the de facto print-quality standard, based on the theory that the bigger the number, the better the printer.

"Ultimately, a consumer must look at a printer's output before making a purchase decision."

However, the dpi measurement is purely theoretical. Few printers position the maximum number of dots in a given grid because to do so would use more than the optimal amount of ink and could severely degrade print quality. Instead, a printer must select the precise number of dots that will yield the most attractive output.

The problem with using dpi as the only measure of print quality is that it doesn't tell the whole story.

Other factors, including dot size, dot characteristics, placement accuracy, inks and image processing also have a significant effect on print quality.

Advances in print quality will be tied increasingly to improvements in elements of the printing system other than dpi. These elements are discussed below.

Ink formulation:

The key consideration for ink development has been to provide the best print quality for the widest variety of media, especially for plain papers found worldwide.

quality in inkjet
printers

HP analysed more than 300 types of paper stock from around the world for their unique chemical properties when reacting with ink. Properties such as ink viscosity and penetration were weighed against the possibility of improper spraying or bleeding. Ultimately, the opinions of HP customers determined which black and colour formulations were used.

In 1993, HP introduced pigment-based black ink for exceptional text print quality. Unlike regular dye-based inks, pigmented inks contain tiny particles of material that adhere to a paper's surface and thus retain their original intensity and vibrancy. Because they do not sink into the paper itself and gradually dissipate, these inks offer more permanence over time, faster drying and less fading when exposed to light.

Dye-based inks are still the standard for colour printing. HP has developed a new generation of colour inks with greater range and intensity and with less tendency to bleed into black ink and other colours. Improvements have also been made to permanence, light fastness and drying time.

Dot technology:

Dot size and the dpi rating are closely related. A higher dpi rating usually denotes a smaller dot, although some inkjet manufacturers have managed to increase dpi simply by passing a printhead several times over the same line and laying down twice as many large dots. Producing a smaller dot size, and increasing the accuracy of dot placement, required either the design of a new printhead with smaller nozzles, or varying the intensity level of the inkjet drops as they are placed on the page, or both.

A new printhead:

With the new HP DeskJet 600 and 660C printers, HP has developed a new-generation black printhead with three times the number of nozzles as previous models. The new nozzles are capable of producing smaller dots and make true 600 x 600 dpi possible without multiple passes.

Text and image processing:

In 1993, HP introduced Resolution Enhancement technology (REt) for HP DeskJet printers. (REt has been used in HP LaserJet printers since March 1990.) An intelligent image-processing technique, REt is a set of algorithmic rules that instructs the printer to vary the size and placement of dots to produce smooth text and crisp edges.

ColorSmart is HP's colour-rendering technology which uses object identification to recognise text, graphics and photographic elements separately, selecting the optimal colour or greyscale tone for each element. By reducing the process to a single easy step, ColorSmart is revolutionising colour printing for users in much the same way that autofocus cameras did for 35mm photography.

Media influence:

Media type also affects print quality. The output from a printer may look different on an expensive piece of stationery than it does on copy paper. Also, certain applications look best on certain types of paper; for example, a scanned image may look best on glossy paper (to simulate photographic quality) while black text may look best on a bond paper. HP designed its inks to provide the best and most consistent print quality on any media used.

Printing on transparencies for presentations is a popular use of colour inkjet printers. HP has developed special print modes to automate this process and allow for adequate drying times so that the possibility of smearing is minimised when several transparencies are printed and stacked on top of one another.

HP has also automated envelope printing by incorporating an envelope sensor to eliminate user intervention and the potential for errors.

There are many factors that affect print quality. Other issues such as printer-software compatibility, pen-to-paper spacing and paper-feed rates play a role in overall print quality. Consumers should consider all these factors before deciding on the printer they need. They should also compare similar, or preferably identical, sample output from several printers. Importantly, this output should be representative of what the user will actually be printing.
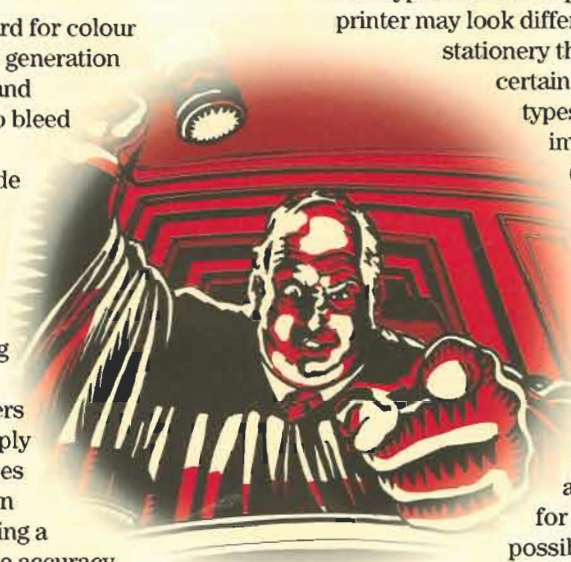
Backu

*I*t has been said that there are two types of data: that which has been backed up and that which has not yet been lost. With current standard hard disk capacities of 540 MB and more, users stand to lose huge amounts of valuable data should their hard disk fail or their computer be damaged or stolen.

According to a 3M study, companies that suffer hard disk failures can expect to lose more than one week of productivity per PC user – a potentially crippling cost.

Half of all companies who experience computer downtime lasting 10 days or more will either go out of business or be sold within one year. Only 6 per cent of businesses that suffer a catastrophic data loss will survive. And yet, only 4 per cent of PCs in Australia and New Zealand are currently being backed up on a regular basis. This percentage has increased dramatically from the 1 per cent just a year ago, and the number is expected to rise exponentially over the next few years as more users realise the benefits of regular backups. Can you afford not to backup your data?

Why backup?

- Because files get accidentally deleted ...
- Because PCs get stolen ...
- Because power spikes erase data ...
- Because fires, floods and earthquakes DO happen ...
- Because hard disks get full ...
- Because data is shared between departments, branch-offices, home and office ...
- Because historical data must be saved and archived reliably ...
- Because all your business records could disappear in a flash if your PC went down ...
- Because you wouldn't do without insurance for your home, car, health or property ...

Why backup? People backup because data is important to them!

Backup, don't stackup ...

Nearly everyone has backed up data to a floppy disk. But as hard disk drives grow in capacity, the time and expense of shuffling dozens of floppy disks becomes prohibitive.

The solution is tape backup. It's easy, flexible and trouble-free insurance for your data, and less expensive

Half of all companies who experience computer downtime lasting 10 days or more will either go out of business or be sold within one year.

data

tabank /'deɪtəbæŋk,

n. **1.** plural
onstrued as sing. or pl.)
wn or available;

data /ˈdeɪtə/ ... plural of datum. 2. information
figures, etc., known or available; information
databank /ˈdeɪtəbæŋk, ...
database /ˈdeɪtəbeɪs, ˈdatə-/, n. 1. a large...
stored in a computer and organised in categ...

– don't stack up!

than you might think. For less than the price of good backup software and a stack of diskettes, you can have a tape drive to backup, restore and archive valuable data in minutes instead of hours. You can backup automatically and store all your data on a single mini cartridge the size of a deck of cards.

8 good reasons for tape backup NOW!

The human eraser:

It's easy to overwrite a file by mistake. Type "Y" when you mean "N". Or even reformat your hard disk by accident.

Hard disk failure:

Hard disks can eventually fail from old age – without warning! They can also be damaged from moving and shipping. Neither are predictable. Either way you'll lose all or part of your data.

Jam-packed disk:

The disk capacity that seemed endless at one time somehow disappears very quickly. You can free up some of that valuable space by archiving your seldom used files to tape.

Fire and theft:

With a single copy of data on your hard disk, you're very vulnerable. You could save your data, and possibly your business, with a backup copy – stored off-site, of course.

Disaster recovery:

Every company should have a disaster recovery program, and tape backup should be a key element. Data can be lost from storm damage, fire, floods and earthquakes. Many victims of recent disasters owe their livelihoods to a tape backup of their data which was kept off-site or in a safe.

Data portability:

The power of the PC is growing and so are the programs that run on them. Today, many applications take up several megabytes of disk space and their data is even larger. Data transfer becomes easy with tape. You can send a tape cartridge across the country, through the mail, or home from the office, in your shirt pocket.

Power spikes/loss:

Sudden power fluctuations can cause disk heads to land in the middle of data, overwrite data, or cause a system to spontaneously reboot itself, any of which can result in unrecoverable data losses.

The faster hard disk:

Over time, files get fragmented and your system slows down. A full disk backup, erase and restore defragments the hard drive and restores the system to its original speed.

> There are two types of data:
> that which has been
> backed up and that which
> has not yet been lost.

... And in the future:

Higher capacity tapes:

Increasing capacity of tape drives, with 2 GB capacity expected by the end of 1995.

Bigger hard disk:

Increasing hard disk sizes (1.5 GB will be standard by 1996, making tape the most practical backup method).

More networking and multimedia:

Networks are increasing in size and number, and larger applications and multimedia make data protection a must.

Need for easy backup:

With the increasing number of PCs used in the home for business purposes, users are realising the importance of data security and the impracticality of floppies.

Fast service, happy

Leading insurer installs Australia's first 100 VG AnyLAN

*W*ith products sold through 1100 Westpac bank branches around Australia and a customer base of over 600,000 and growing, AMPAC Life has built the foundation for a healthy future. A foundation made even more sound by the installation of 100VG AnyLAN technology.

Initially established in 1986 as Westpac Life, AMPAC Life produces and administers products to meet the investment, protection and superannuation needs of Westpac customers. Following the strategic alliance in 1991 between Westpac and Australia's leading life insurer AMP, Westpac Life was renamed AMPAC Life, and became a wholly owned subsidiary of AMP.

AMPAC Life products are sold through Westpac branches with the professional advice of Westpac financial consultants and Westpac financial planners, and also by direct mail to Westpac customers.
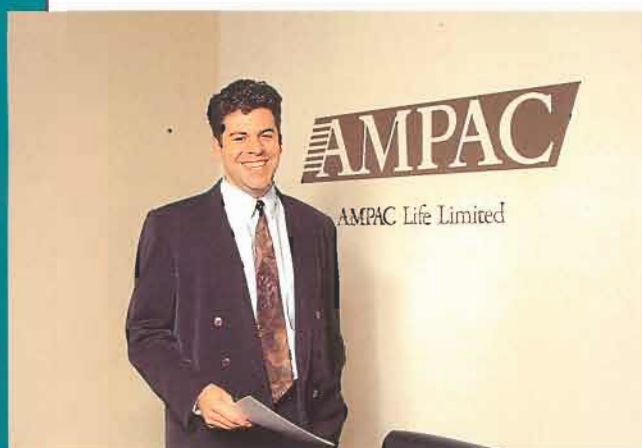
According to AMPAC's network manager, Joseph Marsella, it was AMPAC's drive to improve service to both customers and consultants that began the search last year for a more powerful network.

"A major factor in customer satisfaction at AMPAC Life is speed of paper processing and decision making," said Joseph. "Fast service means happy customers and happy consultants, and that means a growing and profitable business for us.

"A major factor in customer satisfaction at AMPAC Life is speed of paper processing and decision making"

"Due to growth in nodes on the network as staff numbers grew, the network was running at its limits. Users were constantly frustrated by bottlenecks and failures in the network. The limitations on the existing network caused business productivity to suffer and made network administration difficult," said Joseph.

"As network manager, I investigated how our network with both Ethernet and Token Ring LANs could operate faster, while accommodating more users and yet allow us to build an infrastructure to cater for future network needs."

Joseph Marsella AMPAC's network manager: Key criteria for AMPAC's selection of 100VG AnyLAN included cost, reliability, ease of integration and manageability.

customers,
profitable business

Joseph believes the key business criteria used when investigating networking solutions options included cost, reliability, performance integration with existing equipment, manageability, and it also had to be strategic.

AMPAC investigated many networking technologies, including 10 Mb Ethernet, 100 Mb Fast Ethernet, ATM, 16 Mb Token Ring, 100 Mb Token Ring and HP 100VG AnyLAN.

On the basis of the key business criteria AMPAC chose HP 100VG AnyLAN, even though it didn't have much HP equipment at the time except for printers.

Before implementation, extensive tests were carried out using HP 100VG AnyLAN products to ensure there weren't any conflicts with the existing network. The tests were carried out using UNIX, Windows NT and Novell based servers while running over NetBEUI, TCP/IP and IPX/SPX protocol to DOS and Windows for Workgroup based clients.

"To our surprise it was not difficult to install and run the test, and very few issues, minor in nature, were encountered," said Joseph.

Tests found the HP 100VG AnyLAN collision free protocol allows more users per LAN segment without having to invest in expensive switches. AMPAC also found the technology achieved 80-90 per cent effective throughput after removing protocol overheads.

"Our existing applications were tested as well and we found they functioned smoothly over the new mixed speed environment without requiring changes to applications or driver configurations."

The technology was employed when AMPAC relocated offices. Hewlett-Packard was commissioned to undertake the wiring, while all hardware and software were purchased from HP reseller CSC Limited. Over the course of one weekend last September, AMPAC's information technology staff installed 12 Hewlett-Packard 100VG AnyLAN hubs that were integrated with existing Ethernet environment and elements of the Token Ring network.

AMPAC's investment also takes in HP 100VG network interface cards that provide 100 Mbit/sec connectivity to
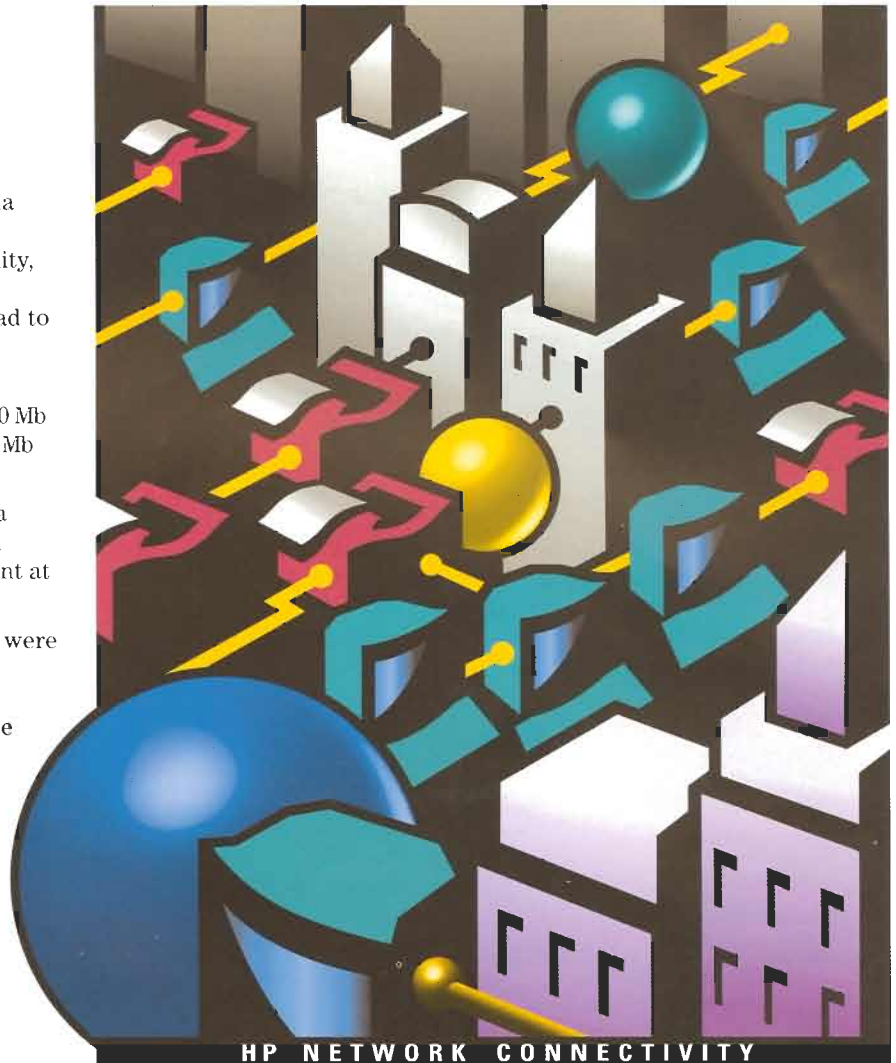
HP NETWORK CONNECTIVITY

the desktop. About 70 per cent of AMPAC's 200 workstations run HP 100VG AnyLAN.

One year on ... and AMPAC is looking at new products to implement.

Joseph said the company is continually looking at better ways of doing business. "Given the high bandwidth network infrastructure, we can employ projects such as work management systems that include imaging and workflow, further downsizing of mainframe applications and the automation of software distribution through the network.

"By alleviating the burden of administration of the network, enhancing user productivity and delivering data more efficiently, we can build an infrastructure that can support the company's technology needs in the future and, at the same time, enhance our competitive edge in the marketplace."

Sharelink Communications uses a combination of Hewlett-Packard ScanJet scanners, HP Vectra 5/90 PCs and Caere WordScan software to scan customers' phone bills, and identify rebates and savings.

*I*magine receiving a rebate from your telephone provider equal to a full month's phone charges. And saving an average 15 per cent on future phone bills beyond any phone savings plan you already use.

It may seem a bold wish, but for some individuals and companies that wish is already fact. They are taking advantage of a deregulated market to buy their phone services through a specialist provider – and it's not Telstra, or Optus, or any of the major players competing in the Australian telecommunications marketplace.

Hewlett-Packard is assisting a Sydney-based company, Sharelink Communications, to compete successfully in this new market.

According to Miles Smith, managing director of Sharelink Communications, the system will expand to cover all major utilities as those markets deregulate over the next few years.

Surprisingly, the services do not cost the customer a cent. "We are a performance-based company," said Miles. "Our job is to identify savings for our customers. Our charge is

"We use Hewlett-Packard hardware, which is sophisticated, yet robust ..."

simply a percentage of that saving. The more savings we can identify, the more the customer benefits and the more we benefit.

"We use Hewlett-Packard hardware, which is sophisticated, yet robust," said Miles. "So much so that we have developed the system as point-of-sale machines which are being installed in retail store test sites around Australia. We have also developed our own smart software to identify rebates and savings.

"Domestic customers can simply take their current phone bill to one of our machines, feed it in and follow a few simple steps to receive an immediate quote on savings we could provide, as well as picking up errors on their account.

"Firstly, the phone suppliers provide us with their latest tariffs on every conceivable long-distance or mobile call,"

phone bill
GUARANTEED

said Miles. "That information amounts to three books, each about the size of a major city phone book. We feed that massive amount of information into our computerised database and update it regularly.

"Customer savings and rebates are identified by scanning current phone accounts.

"The hardware needed to be of high quality construction and the supplier needed to provide us with quality support. After a lot of research, we settled on Hewlett-Packard hardware: HP ScanJet flat-bed scanners to capture the information; HP Vectra 5/90 PCs to process the information; and HP LaserJet 4L printers to output the report and application form."

Miles says that HP's AccuPage scanning technology ensures that the input is the best possible quality. "As you can imagine, some phone bills are not easy to read with coffee stains, pen scribble, scratches and tears. We use a highly sophisticated OCR (Optical Character Recognition) software system to clean up the scan. Caere WordScan software from Indigo Pacific is capable of automatically cleaning, correcting and then preparing the data so that we can run a comparison in our database.

"WordScan offers the sophisticated technology we need. For instance, we cannot guarantee in a retail environment that a page will be inserted straight or cleanly. WordScan has an automatic de-skew facility to straighten a page and correct the information it has captured.

"Once we are sure the information from the phone bill has been captured correctly, we can compare it with the rates from the suppliers," Miles added.

The complex computations needed to analyse customer accounts are processed through a Hewlett-Packard Vectra PC with a Pentium 5/90 processor. The machine is configured with 16 MB of memory and a 430 MB hard disk.

The customer steps through the process via a touch-screen.

"When the analysis is complete, the customer receives a report detailing the savings we can provide. And we report any discrepancies we have found.

"If the customer decides not to proceed, all the data is erased from our system. This offers everyone guaranteed confidentiality.

"To proceed, customers simply sign the application form, tell us which of their accounts they want us to work on, and then it is up to us."

Their next phone bill will be a combined account from Sharelink Communications.

For corporate customers, Sharelink is able to perform a detailed audit of the total telecommunications equipment, facilities and charges dating back a number of years. The company's consultants perform the audit to ensure the customer is being charged correctly for equipment, that appropriate systems are being used and that the customer is taking advantage of the best available rates.

"At Woolworths, for example, we discovered that another supplier was charging maintenance on a PABX switchboard that had been removed two years earlier,"

said Miles.

For Sharelink, saving customers money on phone bills is the tip of the iceberg.

"Deregulation has opened up a huge marketplace," he said. "Gas and electricity are obvious utilities where competition will give us an edge. And our next move is into insurance. We are already well down the track to providing our customers with instant access to the best price on Compulsory Third Party Green Slip car insurance through our point-of-sale machines."

Healthy, Wealthy & wise

Business boo-boos

A survey has found that the biggest mistakes managers make when dealing with their staff (listed in order from the worst faults to less serious faults) are:

- Failing to see the other person's point of view.
- Failure to show appreciation or give credit.
- Failure to size up employees correctly.
- Lack of leadership.
- Lack of sincerity.
- Arrogance.
- Failure to delegate authority.
- Indecision.
- Letting emotions rule their decisions.
- Lack of courtesy.
- Jealousy.
- Losing their temper.

Five ways to increase your productivity

1. Do it now

One of the main reasons people put things off is because the task appears unpleasant. But will that task become more pleasant given time? Probably not ... and it could actually become more unpleasant. Do it now and get it over with.

2. Handle paper quickly

When you first read something, decide whether you want to deal with it, delegate it, file it (for future reference) or throw it.

3. Know what is expected of you

Be aware of your short and long term responsibilities. It's a good idea to have these in writing. Make sure your boss has a copy. Effective communication saves a lot of time.

4. Take good care of your health

You can't be productive at work if you're at home sick.

5. Be positive

One of your greatest challenges everyday is to stay excited about what you do every day.

Coping with missing out on a promotion

Have you been passed up for a promotion you thought you deserved? Here are some pointers for dealing with the let down.

- Congratulate the person who won the position and offer them your support and loyalty. It is better to develop positive relationships than formidable adversaries. Battling with your enemies does little for your career – it wastes time and is futile if the other person now holds more power than you. The worst thing you can do is to react emotionally and inappropriately. It will only lessen your chance of getting other promotions in the future. It is difficult to respect a sore loser.

- Ask the person who made the decision why you weren't chosen. Make sure they understand that the reason you are asking is to find out what you need to do in order to put yourself in a better position for future promotions.

- Work on improving your self image. People who get ahead perceive themselves as winners and thus are perceived by others as winners. The more time you spend dwelling with negative feelings, the more power you give them.

- Consider it as a learning experience. Imagine yourself looking back in 10 years when you are the Managing Director of a major corporation and thinking about how strategic this result was in your rise up the ladder.

1. HP DeskJet 1600C printer

*2. HP DesignJet 230 and
HP DesignJet 250C plotters*

3. HP JetDirect EX Plus3 print servers

1. HP DeskJet 1600C printer:

HP's fastest colour printer for professionals.

- 600 x 600 dpi black text;
- Black output up to 9 ppm, colour up to 4 ppm (fastest inkjet engine on the market);
- Built-in heater for fast, dry output;
- High volume duty cycle (12,000 pages per month).

  RRP: Australia, including sales tax: from $2803. New Zealand, including GST: from $2908.

  HP FIRST Document ID: 90016

2. HP DesignJet 230 and HP DesignJet 250C plotters:

Unmatched reliability, output quality and speed at competitive prices.

- Proven reliability of HP inkjet plotting;
- 600 dpi addressable resolution in black (both models);
- 300 dpi addressable resolution in colour (HP DesignJet 250C);
- choice of A1-size and A0-size models.

  RRP: Australia, including sales tax: from $4388. New Zealand, including GST: from $5288.

3. HP JetDirect EX Plus3 print servers:

High performance printer servers that connect any three parallel printers to a LAN.

- Easy to install and manage your printer anywhere on the network;
- 3 high speed HP Bi-Tronic ports;
- supported by all leading Network Operating Systems;
- support for SNMP included.

  RRP: Australia, including sales tax: Ethernet – $844, Token Ring – $1230. New Zealand, including GST: Ethernet – $1038, Token Ring – $1430.

  HP FIRST Document ID: 90186

4. HP DeskJet 600C and HP DeskWriter 600C printers:

Low-cost inkjet printers with breakthrough print quality.

- 600 x 600 dpi black output;
- Black output at 4 ppm, colour up to 1 ppm;
- Optimised for excellent results on plain paper;
- 3 year warranty;

RRP: Australia, including sales tax: from $672. New Zealand, including GST: from $743.

HP FIRST Document ID: 90249

4. HP DeskJet 600C and HP DeskWriter 600C printers

5. HP DeskJet 660C and HP DeskWriter 660C printers:

Affordable, professional quality printing, in colour and black & white.

- 600 x 600 dpi resolution for black text and graphics;
- optimised for excellent results on plain paper;
- faster colour printing: up to 1.5 pages per minute;
- 3 year warranty.

RRP, including sales tax: Australia, $913. New Zealand, $979.

HP FIRST Document ID: 90191

5. HP DeskJet 660C printer

6. HP DeskJet 850C printer:

Superior speed and print quality, with multi-platform compatibility.

- 600 x 600 dpi black text;
- Black output up to 6 ppm, colour up to 3 ppm;
- Built in dual I/O (PC or Macintosh) 26 built-in scalable typefaces.

RRP: Australia, including sales tax: $1104. New Zealand, including GST: $1182.

HP FIRST Document ID: 90300

6. HP DeskJet 850C printer

7. HP NetServer LH

8. HP NetServer LS

9. HP Vectra VE 486 PC

10. HP Vectra XM3 PC

7. HP NetServer LH:

Easy-to-manage, optimised price/performance servers that deliver maximum uptime.

- HP NetServer Assistant management software included;
- HP Dual channel PCI Disk Array for superior data protection;
- dual SCSI backplane for internal disk duplexing.

RRP, including sales tax: Australia, from $11,549. New Zealand, from $13,178 (prices vary depending on configuration).

HP FIRST Document ID: 90248

8. HP NetServer LS:

Scalable servers for mission-critical applications.

- Intel Pentium™ 75 or 100 MHz processor (Pentium 133 MHz-ready);
- "Hot-swap" feature allows continuous use while replacing failed drive;
- integrated Dual PCI Fast and Wide SCSI-2.

RRP, including sales tax: Australia, from $14,000. New Zealand, from $22,899 (prices vary depending on configuration).

HP FIRST Document ID: 90250

9. HP Vectra VE 486 PC:

Feature-rich 486 PCs that deliver exceptional value.

- 4 MB or 8 MB RAM standard – expandable to 64 MB;
- 64-bit PCI graphics with 1 MB of video DRAM;
- fully DMI-compliant, 3 year warranty.

RRP, including sales tax: Australia, from $2215. New Zealand, from $2356.

HP FIRST Document ID: 90239

10. HP Vectra XM3 PC:

The affordable Pentium PC with built-in remote management and networking.

- Integrated 32-bit PCI bus master Ethernet interface;
- HP DMI250 Remote Management software preinstalled;
- 64-bit PCI graphics, designed for Windows 95;
- 3 year warranty.

RRP, including sales tax: Australia, from $3682. New Zealand, from $4251.

HP FIRST Document ID: 90253

11. HP AdvanceStack Dial-A-LAN 4A Module:

Economical and easy to use remote access Ethernet server.

- Four high-speed asynchronous serial ports, each up to 115.2 Kbps;
- simultaneous support for all major protocols;
- supports a variety of connection options, including V.FC, V.34, V.32bit and V.32;
- lifetime HP warranty (first five years on-site).

RRP: Australia, including sales tax: $4164. (Dial-A-LAN 4A Bundle, including SNMP Module: $4339). New Zealand, including GST: $4706 (Dial-A-LAN 4A Bundle, including SNMP Module: $4903).

HP FIRST Document ID: 90255
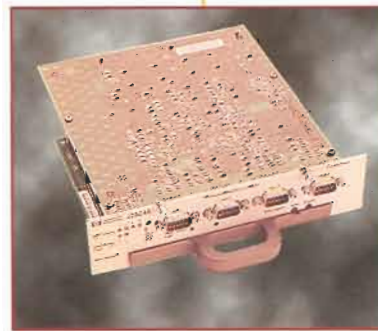
11. HP AdvanceStack Dial-A-LAN 4A Module

12. HP AdvanceStack 10/100 LAN Switch-16:

Integrates 10Base-T, 100VG and other high-speed workgroups via a switched connection.

- Supports error-free cut-through switching technology;
- supports both half-and full-duplex transmission;
- up to 1700 address entries per port and up to 10,000 addresses total.

RRP: Australia, including sales tax: $13477. New Zealand, including GST: $15927.

HP FIRST Document ID: 90206

12. HP AdvanceStack 10/100 LAN Switch-16

13. HP OmniBook 5000 Notebook PCs:

Advanced-performance Pentium desktop-to-go PC.

- 90 MHz Pentium processor, PCI bus architecture;
- 10.4 inch TFT or DSTN backlit colour display;
- Windows 95 Plug and Play support;
- Sound Blaster-compatible stereo sound.

RRP, including sales tax: Australia, from $11,888. New Zealand, from $12657.

HP FIRST Document ID: 90217

13. HP OmniBook 5000 Notebook PCs

To receive faxed information on any of these product releases simply call HP FIRST (see details on Page 2) and quote the relevant ID number.