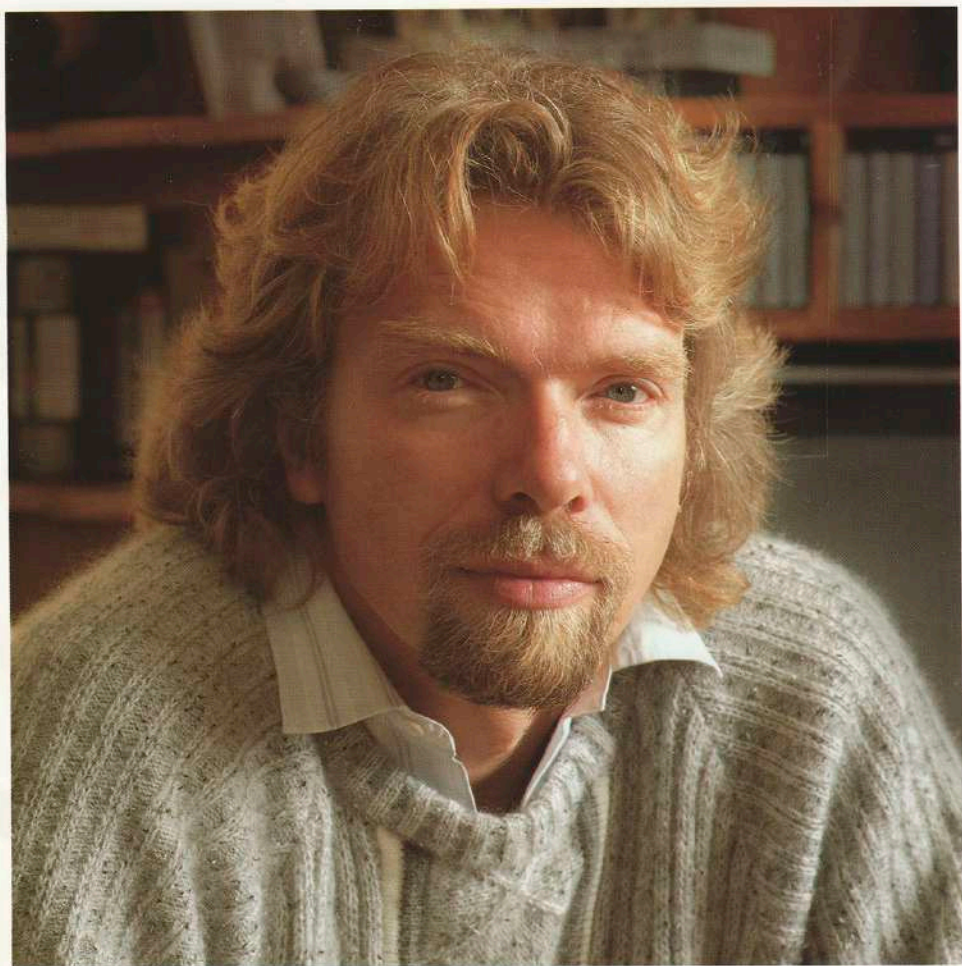


Apple Business

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Branson's Virgin Atlantic flies upmarket ● Cutting the cost of presentations
Engineering on a Desktop ● Equities on a Macintosh II ● PostScript goes Display
Architecture : drawing the fine line ● Automating the drudgery element

Volume 1
Issue 1

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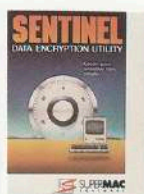
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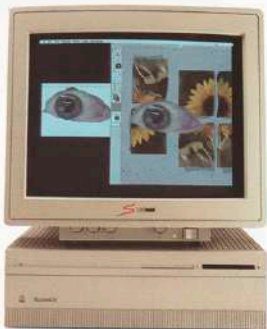
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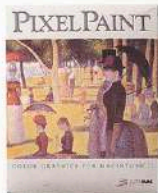




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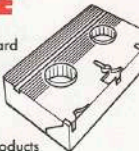
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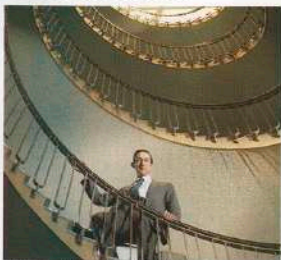
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Branson: eyes eastward



Automating the drudgery



Equities on a Macintosh II

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BT research at Martlesham



Drawing the fine line



Power Presentations

International Magazines

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PUBLISHER'S LETTER

Apple Business is a new type of magazine for a new type of reader. This is the world's first glossy management magazine to concentrate on computer solutions for business and, in particular, on Apple solutions.

This is appropriate as it was Apple which first put computing power into the hands of individuals and today it is Apple that is providing business executives with the power to solve problems.

Each month we will be examining those companies and organisations which have applied Apple-based solutions and we will be providing news and detailed technical advice to help Apple users get the most from their equipment and software. In addition to our team of business writers we have assembled an outstanding group of technical writers who will provide information about Apple, Apple software and about interfacing with machines such as DEC, IBM and ICL.

Despite its title, this magazine is entirely independent of Apple. Although Apple provides substantial co-operation in terms of editorial information, **Apple Business** is free to be objective and we intend to provide our readers with fair and unbiased comment and appraisal in all areas concerning Apple and the third party vendors. **Apple Business** will be published monthly and is available free of charge to readers who are eligible to qualify. We hope you enjoy this first issue of **Apple Business**.

Raymond Hammond
Publisher

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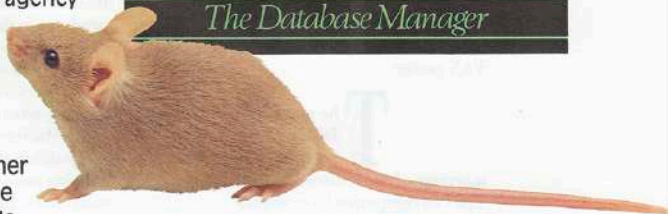
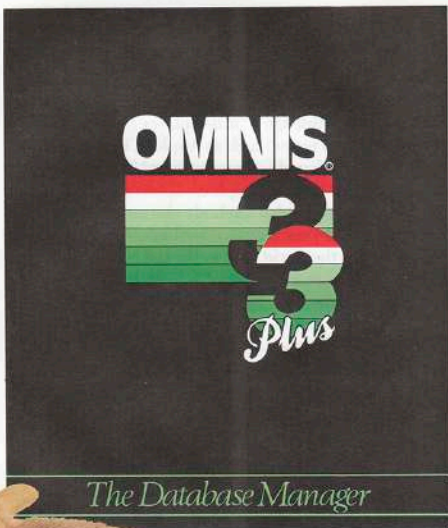
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GROWING PAINS

In January Apple and Digital Equipment Corporation (DEC) announced a long-term policy of co-operation. The importance of this should not be underestimated. DEC is the world's second largest computer company after IBM (Unisys, the amalgamation of the Sperry and Burroughs corporations, ranks number two in dollars, not units) and while IBM is suffering from zero growth, DEC, like Apple, is experiencing exponential increases in both market share and market size.

The important question is why should a company as powerful as DEC even acknowledge a "little" player (in multinational terms) such as Apple? The answer is to be found in the power and interface technology of Apple computers. DEC hasn't needed anybody else until now, and its 30-year growth is well-known throughout the world. But in the last couple of years many DEC-VAX users have thrown out the DEC terminals supplied with DEC minicomputers and installed inexpensive Macintoshes as "front-ends" for their VAX data processing. As DEC's sales and service support teams toured the DEC sites of the world they kept finding Macintoshes running their systems. The reason for this is that the Macintosh is simple and easy to use, is powerful enough to control a VAX and that by putting a Macintosh interface onto a VAX untrained users gain access to VAX power.

The marriage between DEC and Apple, however, is more than a marriage of convenience or expedience. The two companies have similar philosophies and the two technologies are widely regarded as the only "sensible alternative" (to IBM).

Together Apple and DEC offer a complete corporate computing solution

which beats IBM on all counts except where major mainframe capacity is required. DEC pioneered "distributed processing" (the idea of spreading computer power around an organisation) 20 years ago. Ten years later Apple pioneered personal computing for every individual.

The problem for Apple is simply one of servicing such growth and opportunity. The explosion of Macintosh sales is already making the Apple organisation creak and the added impetus of the "Vaxintosh" agreement will add to this burden.

Complaints of poor after-sales service and support from Apple dealers is already widespread and adding the DEC dimension will only aggravate the problem.

The answer is for both Apple and its dealers to fully understand that they are no longer in the box-shifting market. Many Apple dealers have grown up by shifting hardware on discount terms and ignoring the customers' need for after sales support, but this is a policy which will spell disaster: not for Apple or its products, but for dealers who imagine that such an attitude will continue to be profitable.

DEC connectivity, Desktop Publishing and database development are all areas which demand massive post-sales support. Business customers who wish to use Apple products in this way will pay for the service, and only by understanding how rich and real this opportunity is for Apple and its partners, can re-sellers hope to share in the long-term gains to be made.

The Macintosh is the easiest-to-use computer in the world: that is why it is now running power applications on DEC minicomputers. But power users need continuing support and help and it is up to Apple and its dealers to rise to the opportunity which lies ahead. Apple and its dealers have to emulate DEC and concentrate on becoming professionals.



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VIRGIN'S BRANSON FLIES EAST FOR GLASNOST

He called his business Virgin because nobody in the organisation had any experience when they started. Now, 19 years later, Richard Branson calls himself 'one of the 10 richest people in England'. In an exclusive interview with *Apple Business* he told *Ray Hammond* how he plans to turn Virgin Atlantic into a business airline.

Richard Branson identifies with Apple and its leading characters for good reason. He's young, rich, deceptively casual and formidably successful. He's a radical who demands radical solutions, whether it's turning a balloon flight into an international advertising campaign for Virgin Atlantic or applying Apple's Macintosh to his marketing. His skill at manipulating the media and making the world conscious of his fledgling airline has a price, however. He knows he has been over-exposed in Britain and it is for this reason that he's been refusing all interviews for the last six months.

But it is hard to criticise the international value of his publicity stunts. It was Russia's Intourist Bureau which approached him recently with a plan to offer holidays to the West. This led to Branson's widely publicised trip to the USSR last month during which he signed a deal to take over a renovated 500-bed hotel in Yalta and fly British holidaymakers in and out on "Virgin

customised" Aeroflot flights. Taking his condoms with him to solve the Russian shortage during the AIDS crisis was just another example of his nose for a newsworthy story.

But behind the casual approach and the seeming flipness, there is an astonishing manipulative ability. Virgin Atlantic Airlines opened in 1984 with one leased jumbo jet and the offer of cheap flights to New York. Now the company has two 747s in service, is leasing three more, and is running flights on Viscounts between London, Eire and Holland.

'We're starting to fly to Japan three times a week this Spring with a stop-over in Moscow once a week,' says Branson. 'We're also going to Boston, Los Angeles and New York's Kennedy airport as well as Newark; so we'll be landing both sides of Manhattan.'

The throw-away comment about the stop-over in Moscow reveals his thinking. Western carriers have difficulty flying over Russian soil and this makes many international routes too

Aboard the "Duende". The old houseboat serves as both Branson's home and the world-wide headquarters of the Virgin Group

Brian McMahon





The first hot-air balloon to cross the Atlantic is also the world's largest billboard with a single message: Virgin!



long and expensive. If Virgin gained a privileged status prospects for the airline would be phenomenal.

'I'm hoping to develop my relationship with the Russians,' Branson admits, with a shy smile and calculating eyes. He is concerned about showing his cleverness in case he might not be liked for it. 'I understand that Intourist was told to make an approach to the West in order to demonstrate that Glasnost was not just an idea, but a reality. Somehow news of my balloon trip got into the Soviet media and I was the one the Russians approached.'

This one massive pay-off from his publicity stunt has implications which suddenly make his airline much more attractive. It has come at a time when British Caledonian has been forced to surrender some prize routes in the wake of the British Airways takeover and these have fallen into Virgin's waiting arms. The Tokyo and Boston routes were BCal's and there are others which may become available.

'The problem is finding the planes,' explains Branson. 'It's not like when

we started, there aren't any planes sitting in the desert.'

Branson is talking aboard his houseboat in London's canal district of "Little Venice". The area is fashionable, but there's always something gypsy about old houseboats on canals. Stray dogs and deserted allotment gardens add an air of dereliction to the dampness but inside "Duende" we could be in a country cottage with stripped pine and comfortable sofas.

The boat is Branson's main home but it is also the world headquarters of an empire worth upwards of £500 million. Schoolchildren canoe past the window in a convoy, while inside Branson agrees to spend millions buying Birmingham City Football Club; for the value of its real estate next to Birmingham airport, not because of a love of football. The man knows the value of a story and lives a life which is a publicist's dream, which is why he needs no publicists.

As might be expected, he's at ease in front of the camera and while he's posing for *Apple Business's* photographer he talks about his view of Apple.

'Apple is my sort of company, I find it very attractive. I met Steve Jobs once and I thought he was incredible and I think this new guy they've got, John Sculley, is great.'

The identification isn't surprising. In publicity terms Branson is the closest to a Steve Jobs figure Britain has got, but there the similarity ends: at 37-years-old Branson has been running his company for 19 years and there's no dissent in his Camelot.

He sits at the round table in his dining cabin and outlines his hopes for the airline. To him it is the most important entity in his collection of 125 companies spread over 25 buildings in London and the south-east. He keeps all the locations small (never more than 80 people) because he believes that staff respond to the senior person at a location as the real boss. He believes that proper delegation is the biggest single key to his success and he thinks that if he was present at any of the locations the staff wouldn't regard the operation's managing director as the true boss.

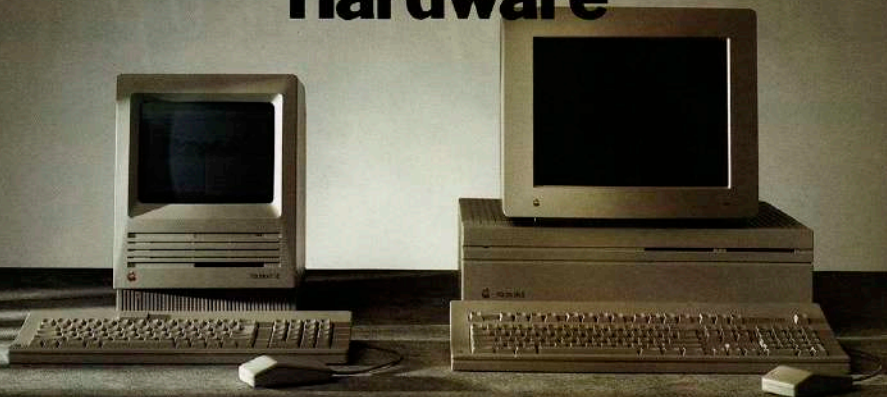
The City of London likes his style, despite the danger of his personality cult overshadowing the company. He took his group of record shops, property companies and leisure industries to a full listing on the Stock Exchange at the end of 1986. Last November he was able to tell shareholders at his first annual meeting that company turnover had jumped 48 per cent to £279 million in the first post-floatation year, and that profits were up 45 per cent to £27.7 million. The Virgin Group plc is safely in the hands of managing director Simon Draper, leaving Branson free to develop the privately owned Voyager Group, which controls Virgin Atlantic and his holiday company.

Already Black Sea holidays to Yalta (packaged at £500 including flights) are almost sold out, and Branson is now working on ideas to modify Aeroflot's image.

'It's by far the biggest airline in the world, but I don't think the standard of service is up to much at present. We're trying to find ways to improve it; I'd like to put the cabin staff in Virgin uniforms, but I think the Russians have got a problem with that.'

'We want to open up the whole

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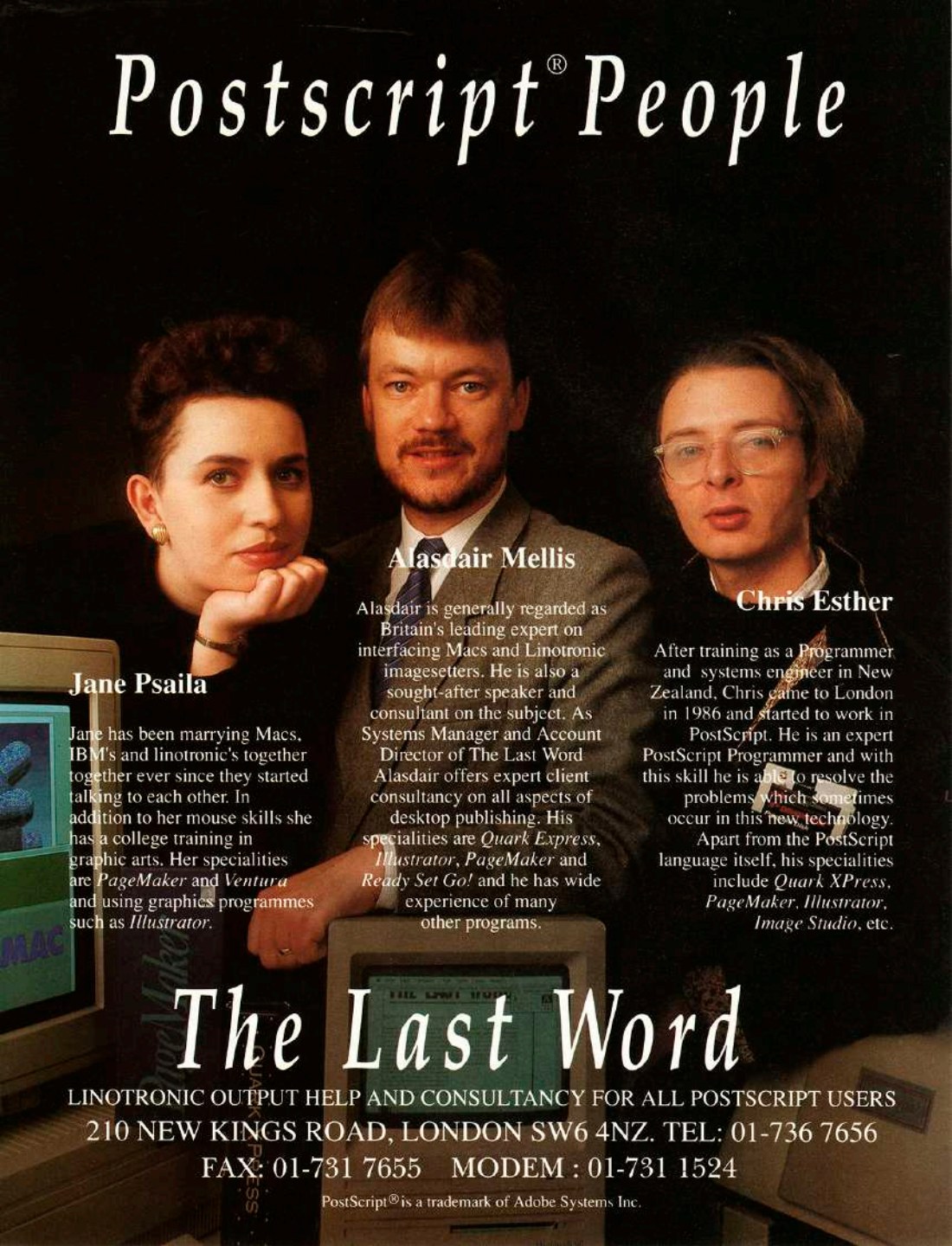
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Jane Psaila

Jane has been marrying Macs, IBM's and Linotronic's together ever since they started talking to each other. In addition to her mouse skills she has a college training in graphic arts. Her specialities are *PageMaker* and *Ventura* and using graphics programmes such as *Illustrator*.

Alasdair Mellis

Alasdair is generally regarded as Britain's leading expert on interfacing Macs and Linotronic imagesetters. He is also a sought-after speaker and consultant on the subject. As Systems Manager and Account Director of The Last Word Alasdair offers expert client consultancy on all aspects of desktop publishing. His specialities are *Quark Express*, *Illustrator*, *PageMaker* and *Ready Set Go!* and he has wide experience of many other programs.

Chris Esther

After training as a Programmer and systems engineer in New Zealand, Chris came to London in 1986 and started to work in PostScript. He is an expert PostScript Programmer and with this skill he is able to resolve the problems which sometimes occur in this new technology. Apart from the PostScript language itself, his specialities include *Quark XPress*, *PageMaker*, *Illustrator*, *Image Studio*, etc.

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Russian holiday market. Rather than just concentrate on the Leningrad city-centre idea, we will be promoting holidays such as in Yalta. We have also made plans for another place further down the coast. We hope that quite a few thousand people will be visiting the USSR this year.'

Apart from the Moscow stop-over, Virgin Atlantic have no other flights into the Soviet Union planned at the moment. But Branson has peculiar powers and it is likely that if the deal survives the honeymoon period, he will become a frequent visitor to the USSR with his personal status as an East/West intermediary growing. His payment for his role in spreading Glasnost could be important holiday and airline rights.

The major carriers must now see Virgin as a serious threat. In a secret market study prepared internally last year BA discovered that Virgin is the competitor it should fear most; ('the favourite airline of the world's favourite airline', said the media when the report was leaked) and the new routes mean that Virgin will start taking serious revenue away from the mega carriers.

These giants form the world's most vicious cartel (mainly because government collusion backs up and/or masks their activities). The cartel came together to squeeze Freddie Laker's cut-price airline out of business once it looked like becoming a serious threat. The question which has to be asked is: in what way is Virgin different to Laker?

'Well, for one thing I'm one of the 10 richest people in England,' he says quietly, eyes averted, stumbling over the words as though he has to force himself to be so outrageously immodest. 'So I would be able to rescue the airline in a difficult situation. There are also other differences between Virgin and Laker. Laker was a one-product company and had nothing else to turn to. Laker used DC10s but we use 747s which, unlike DC10s, can carry a full load of freight. We're also restricting our operations on short routes such as Holland and Ireland since they're not very profitable.'

As part of the Voyager Group, figures specifically for Virgin Atlantic aren't made public, and Branson is coy when asked about last year's

profit. 'I think we'll be comfortably in excess of £5 million for 1988 on a turnover of £60 million,' he says eventually.

This is an excellent profit extraction for a scheduled carrier and confirms the claims Virgin's marketing department makes for the airline's performance. During 1987 the airline increased its available seats by more than 30 per cent. In the first quarter 101,538 seats were offered to the public, and by the fourth quarter Virgin had 132,841. In the winter period Virgin managed a 70-80 per cent load factor and between May and September achieved between 80-90 per cent. A 70 per cent load factor is generally regarded as the break-even point for airlines.

Virgin Atlantic compiles, presents and distributes its statistics using Macintosh technology and Branson is clear about the benefits.

'We use Macintoshes in many ways; for producing graphs and reports on flight/aircraft performances, for calculating expenses and marketing budgets, for doing press releases and labels and we also produce a monthly newsletter for all of the travel agents,' explains Branson. 'I know the marketing department finds the technology excellent.'

The 1988 target for Virgin Atlantic is business executives. The lease payments on \$36 million worth of new 747s will be high, and profit extraction has to go hand in hand with expansion. In the trans-Atlantic market, profit comes from giving better service and inflating the seat price.

Virgin Atlantic is spending £250,000 on seat replacement at the moment in pursuit of this bottom line and sleeper seats are going in to all first class cabins. The lounge concept (dropped by other carriers 10 years ago) is being reintroduced and there's a limousine service available as well.

There are no more dare-devil stunts planned; Branson wants no further personal exposure. But his forays into the communist economy and his growing links with Soviet public figures guarantee that he will be a continuing focus of media attention over the coming year. In the end he will have to accept that the concept of Richard Branson avoiding publicity is a contradiction in terms.

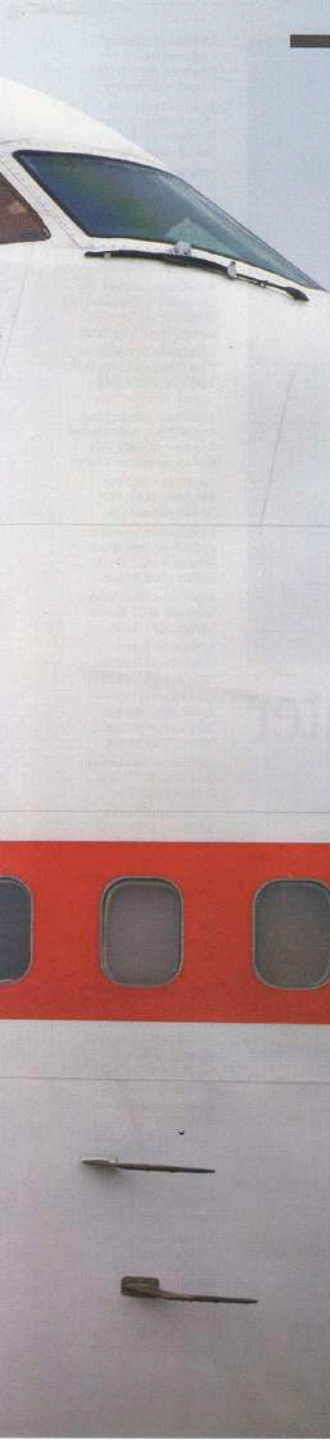


The "lounge" concept has been reintroduced in the upstairs cabin of Virgin Atlantic's 747s





Maiden Voyager



Having decided to venture into the business market, Virgin Atlantic faces a major challenge to change its economy image. *Carey Green* talked to Chris Moss, the man behind the marketing operation, about how Macintosh technology is part of the strategy.

For an airline perceived as being more suited to pop stars than pin-stripes, the news that Virgin Atlantic is considering a £250,000 seat-replacement programme indicates the seriousness with which the unorthodox carrier is now attacking the business market.

The airline launched by Virgin boss Richard Branson as "the people's airline" is gunning for a more upmarket class of passenger. The man responsible for changing its image is Chris Moss, General Manager, Marketing. 'Richard is our most critical Upper Class traveller. It was his suggestion that we replace the seats because he didn't think they were up to standard. Richard wants us to be the best value airline in the world,' he said.

Virgin Atlantic has flown over a million customers across the Atlantic since its formation three years ago. Although it is renowned for its cheap flights, that is no longer the image Moss and his department promote. 'The cheap image came from our early days. Now it can be difficult to get across to the public that low cost does not mean low quality.

'People see us as being cheap and cheerful, but in fact we are not. More people come back to us a second time than any other airline.'

Moss discovered through surveys that the majority of business travellers using Virgin's Upper Class to the Big Apple were travelling through word of mouth or recommendation. Very few were attracted by advertising.

'Business travellers are very important to Virgin. We have always promoted Upper Class as a first-class service at a business-class price.' As well as the usual extras, each Upper Class passenger receives a free Economy Class ticket. Today, Virgin has 54 Upper Class seats, a far cry from its original 14. The passenger list in Upper Class reads like a Times Top 1000 business corporation listing: BP, Esso, IBM, Ford, ICI, AMEX, Reuters. Famous names who regularly

fly Virgin Upper Class include the musician Phil Collins and royal photographer Norman Parkinson.

Another super-critical traveller is Fred Finn - the world's Number One Business Traveller according to the Guinness Book of Records. In the last 10 years, he has made a record 652 transatlantic flights on Concorde; a distance equivalent to four return trips to the moon, or 65 circuits of the globe.

He has travelled Virgin Atlantic Upper Class to his Newark home 48 times within the last two years. 'It is the best business class airline service in the world,' he told *Apple Business*.

As well as being a regular guest on UK TV travel programmes, he was recently the subject of a Sunday Times interview on jet lag, and has endorsed a book written by Alan Whicker.

'I saw the Virgin 747's on the tarmac whenever I flew home to Newark and my attitude was always "avoid Virgin". I associated it with the music business and believed it could not provide a serious business traveller class,' he said.

Another Virgin Upper Class traveller is Lawrie Taylor, publishing director of ABC Travel, which publishes the magazines, *Executive Travel* and *Business Traveller*.

'As far as first class travel goes, nothing can beat British Airways' First Class. But as a business class, Virgin's Upper Class service is excellent. The food is good, the cabin staff are friendly and there is lots of space to move around.

'But Virgin gives you something more. I think it is a question of image. There is a trendy, sexy sort of atmosphere,' said Taylor. He has recently taken his family to Disneyworld in Florida via Virgin's Upper Class, and has persuaded a number of friends to fly Virgin.

Moss's nine-strong marketing team is responsible for all of Virgin Atlantic's advertising, press and public relations, special promotions, sponsorship and competitions.

Despite the fact that the rest of the Virgin empire uses IBM PCs, Moss brought his own Macintosh along when he joined the company two years ago as PR and promotions manager. He had previously worked with

Chris Moss, General Manager for Marketing, welcomes business travellers to a new improved service from Virgin Atlantic

Richard Wade



Will you and your computer dealer be compatible?

What's so good about a computer with 9,000 functions if none of them meet your needs?

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Branson on his transatlantic boat crossing in 1984.

When Moss bought his first computer, he confessed, 'I was computer illiterate, and rather scared of the whole idea of technology.'

So having decided he needed a personal computer, Moss researched the market and chose the newly-launched Macintosh, primarily because he felt it was the easiest machine to use.

'The more I used it, the more I enjoyed using it. There are a lot of similarities between Virgin and Apple. I see Apple as having a certain culture. A particular type of person uses its products. They are not the run-of-the-mill IBM clone type of person. They are individuals prepared to find the right machine for their needs. Virgin has the same philosophy.'

So why did the rest of the Virgin Group choose IBM? Were they afraid of getting sacked?

'Sure, there are a lot of IBM computers dotted around the company. But I decided they just weren't right for the marketing department. Virgin is not the sort of company that has a central computer department telling us what to buy. It is up to the individual to decide what is best for each department.'

Moss's department now has four Macintosh SE's, (two with hard disks, two with dual internal disk drives), four Macintosh Plus's, (two with 20Mb hard disks, and two with additional external disk drive). They are linked to two LaserWriter printers.

MacWrite handles all the word processing needs of the department, which includes writing over 1,000 letters and press releases every month and producing newsletters for travel agents.

The newsletters are produced as camera-ready artwork using the Desktop Publishing program PageMaker which mixes graphics into the three columns of text. 'In February we plan to launch the first issue of a monthly internal newspaper produced using PageMaker,' said Moss. He also has plans to buy a digitiser and scanner to allow photographs to be set directly to page.

After a series of filing packages, Moss has recently bought FileMaker Plus, and is very happy with it. 'One of my biggest headaches is choosing soft-

ware. I have to do my own research, then we have to teach ourselves how to use it. Usually I'm so busy that we end up keeping the same software we've had for ages. It's like changing banks. Is it really worth it?

'I am happy to pay for good software, but I need to try it out first. I am getting more suspicious and cynical of programs that are supposed to be the best thing since sliced bread. In the US you can rent programs, which saves time and money. I think this is an excellent idea.'

Although Moss is critical of the UK computer press, he believes the US Macintosh magazines are more subjective when reviewing a program. 'I bought FileMaker because of various reviews I read. I tried talking to UK dealers, but no-one knew anything about it.'

UK dealers are a sore point. 'I am infuriated by the lack of professional dealers in this country. The majority I've come across have no enthusiasm and their high staff turnover means

they have limited product knowledge.

'If a dealer gave me a demonstration in my office on a good networking package I would almost certainly buy it. I don't have time to find one for myself.'

Moss says his department are not using their Macintoshes to their full capacity. 'But I am not sure we will ever do that because of the time it takes to input data, and because of the lack of dealer support.'

Moss sees many similarities between the corporate cultures of Virgin and Apple: both are companies that cater for individuals



Company Name Virgin Atlantic
Founded 21 June 1984
Registered Office 34 South Molton Street, London, W1Y 2BP
Chairman Richard Branson
Number of Employees 610
Turnover £60 million (1 Aug 1986 to 31 July 1987)
Pre-Tax Profit £4.9 million (1 Aug 1986 to 31 July 1987)
Passenger Growth 600,000 (1987). 1 million (estimated number by end of 1988)

Ever since the Monty Python team dubbed them "boring" accountants have been struggling with a less than dynamic image.

But life inside the big firms is no longer the dull and sleepy one portrayed by John Cleese and his pals.

The introduction of new technology coupled with today's fiercely competitive business style has led to a spate of mergers amongst the large London practices as they set out to create the sort of international multidisciplinary teams which companies now want as their financial advisors.

Following such a merger last year Peat Marwick McLintock (PMM) is now the UK arm of the world's largest accountancy and management consultancy firm, Klynveld Peat Marwick Goerdeler, formed by combining Peat Marwick International and Klynveld Main Goerdeler.

World-wide the firm has over 5,000 partners and 50,000 staff spread across 115 countries. In the UK, PMM's turnover is over £200 million and it employs 8,361 staff.

'We are an unusual organisation in that not a lot of our work takes place in the office,' said Geoff Russell Grant, computer audit partner with PMM in London.

Instead, staff spend most of their time at client's offices, undertaking audit and accounting work and giving advice in specialist areas such as tax planning.

By the early 1980's PMM had spotted clear benefits to be gained from computerising the "drudgery element" present in much of its work. Doing tax and audit calculations on a computer rather than manually would save time and improve accuracy, and the best way to do this was on a networked microcomputer system, the company concluded.

After extensive research, PMM chose Macintosh. Today there are over 7,000 Macintoshes in use within KPMG worldwide, and PMM is buying more at the rate of about 100 a month.

The company was by no means computer illiterate before it decided on Macintoshes. As well as its internal computing department at its Puddle Dock head offices in London's Blackfriars, PMM also had a wealth of computerisation experience gleaned

from clients who, in Russell Grant's words, 'have every shape and size of machine under the sun.'

'When it came to choosing the right micro for the job, PMM had two very important criteria,' he said.

Firstly, the machine had to be easy to use because 'professional time is literally money and by no means all the potential 40,000 to 50,000 users world-wide were computer literate.'

Secondly, PMM was concerned about the interface between machine and user, which determined how

AUTOMATING THE DRUDGERY ELEMENT

One of the world's top accountancy firms has taken the radical step of ignoring IBM to install Macintosh. Today Peat Marwick McLintock has over 7,000 Macintoshes and is buying more than 100 every month. *Pat Sweet* discovered how Macintosh power has changed the way it works.

easily special applications could be written and used.

The company intended to develop a suite of integrated software packages for staff to draw on. But the chosen manufacturer was required to disclose sufficient information about future product development and strategy to ensure that investment in its software was protected.

The final choice, taken at a time when many large corporations were opting for MS-DOS and IBM-based offerings, was the Macintosh SE with in-built hard disk and ImageWriter printers which staff could take with them into the field to service clients.

'Given the size of the firm we had little option but to go for a leading edge position. In order to experience

Russell Grant: seeking an innovative approach to computing to gain a competitive edge

Gary Chalk GCAS



optimum benefits we were prepared to put a lot of resources into it," Russell Grant said.

That commitment allowed the company to take what Russell Grant acknowledged many other businesses would have seen as a "high risk decision." Far from wanting to bask in the safety of a choice which many others had also endorsed, PMM was seeking an innovative approach to computing which would give the firm a competitive edge, he said.

There were also technical considerations which held sway. At the time of evaluations, the Macintosh had a faster processor and more addressable memory than other options.

The extra memory allowed PMM to create software programs which offered users information and guidance as they went along.

"A lot of MS-DOS machines also

tended to split programs over several diskettes because of the need to keep programs small, so they weren't as easy to use," he said.

"We talked to Apple and asked what the product range would be like in the future. We needed a close relationship with our supplier and to have faith in what they were trying to do. So far, by and large, what Apple told us has come true," Russell Grant said.

That faith was tested again when the two firms merged and economic factors had to be weighed up. KPMG calculated that running both MS-DOS and Macintosh would increase development costs overall by up to 50 per cent, but that the total cost of standardising on Apple equipment was less than one-quarter the cost of company-wide standardisation on IBM machines. Some specialist UK tax software is still running on

Compaq machines, because of the complexity and constantly changing nature of the programs, and some software originally written for IBM equipment has been translated for the Macintoshes using "C", a high-level programming language.

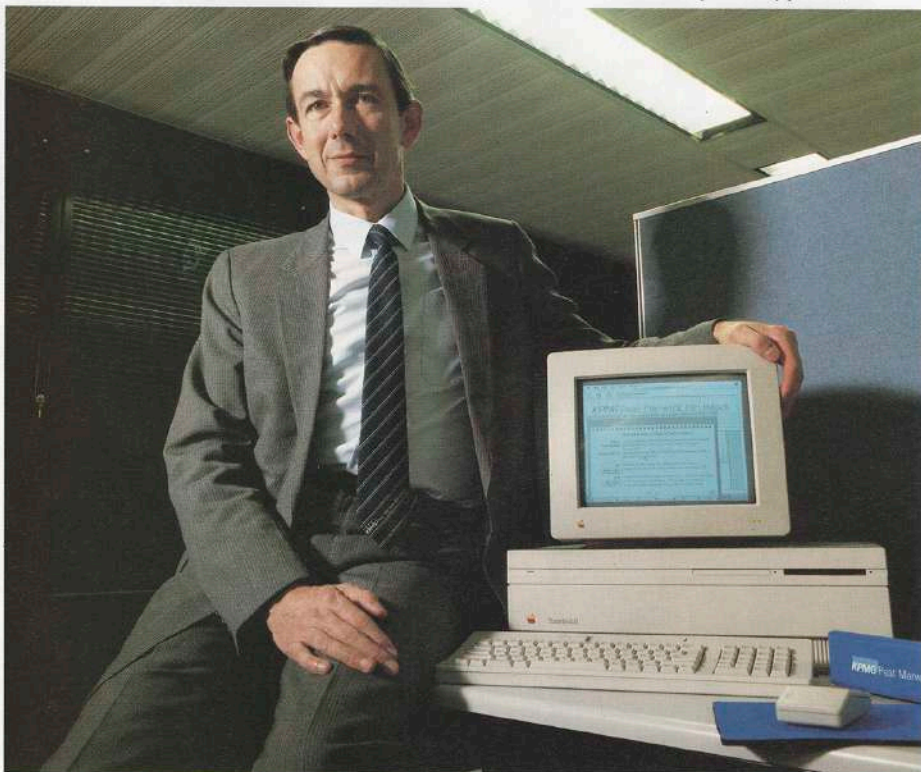
The main commercial software package used by staff is Microsoft's *Excel*, an integrated spreadsheet with built-in graphics and a worksheet-oriented database.

PMM's major thrust has been in the development of its own integrated software programs.

"We have spent a long time, in conjunction with Apple, creating an integrated portfolio of programs designed to reflect our auditing methods and our proven proprietary approach," said Russell Grant.

PMM's aim was to identify the best manual techniques for any process,

PMM's choice of Macintosh was "a high risk decision" admits Russell Grant. Today however he believes the company has a computing policy "with foundations which have set hard"



and then computerise them. New procedures have been designed so that they can easily be translated on to the Macintosh at a later date.

'It has taken almost a decade to devise a methodology which would work in the field. It had to be flexible so it could tackle any situation, and usable by people not trained to be computer operators,' he said.

PMM's current applications include a file analysis tool, which will go through a client's files looking for exceptional items and then produce detailed analyses. There is also a statistical sampling program, and a program which automates the production of documentation such as flow charts.

Another program will pick up client's trial balances and translate them into final accounts format for any country and then handle the schedule of analysis. It makes adjustments easier to incorporate, and automatically keeps all papers up to date.

Another area under consideration is the development of programs to pull data off a client's mainframe, whatever make it was, and transfer it to the Macintosh. PMM is working with Apple on ways of doing this.

For the future, PMM is looking at using HyperCard to hold and maintain some of the mass of data currently kept in auditing manuals.

One of PMM's difficulties in the early days was finding enough people with programming skills. 'Learning how to get the best out of an application was quite a problem,' Russell Grant conceded.

However, with a body of expertise built up he lists numerous benefits, in addition to the overriding achievement of making staff more efficient.

The ability to send fully formatted files across the world via electronic mail is useful on international assignments, where auditors in different countries need fast feedback. The Macintosh includes features such as currency signs, which can be altered to suit local custom.

As a spin-off from its main activity of collecting data, PMM has found Apple's Desktop Publishing facilities a bonus. It can produce a series of masters to be sent direct to the printing department and, if outside contractors use the PostScript language,

it can be sent direct to an external printer as well.

'We used to have to send out drafts to be made up and that meant days lost waiting for it to come back. Now we can use the time that we save getting more information into our documents and therefore take more factors into account.'

PMM is confident it has an automated methodology to carry its work into the next century, and a tool to implement it in the Macintosh.

'In terms of buying the equipment and writing the software, at the beginning, we did feel as though it was a bottomless pit,' said Russell Grant.

'But now we feel PMM has concrete foundations which have set hard, while some people still out in tents with makeshift arrangements will notice when the wind blows.'

Pat Sweet is a freelance journalist

Company name Peat Marwick McLintock (UK arm of Klynveld Peat Marwick Goerdeler)

Founded January 1987 (by merger of Peat Marwick International and Klynveld Main Goerdeler to form KPMG)

Registered office 1 Puddle Dock, Blackfriars, London EC4V 3PD. Tel. 01-236-8000

Number of offices 55

Senior partner P J Butler CBE

Number of employees 8,361

Number of partners 457

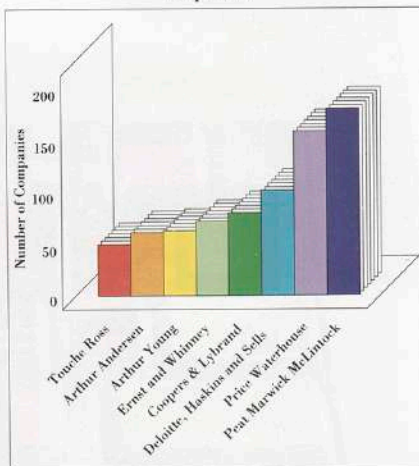
Turnover £232.4 million. (Year ending 30 September 1987.) KPMG world-wide \$3.25 billion.

Major clients Eurotunnel, TSB, Virgin, British Airways, Capital Radio, London Docklands Development Corporation, Milton Keynes Development Corporation.

Comments PMM claims

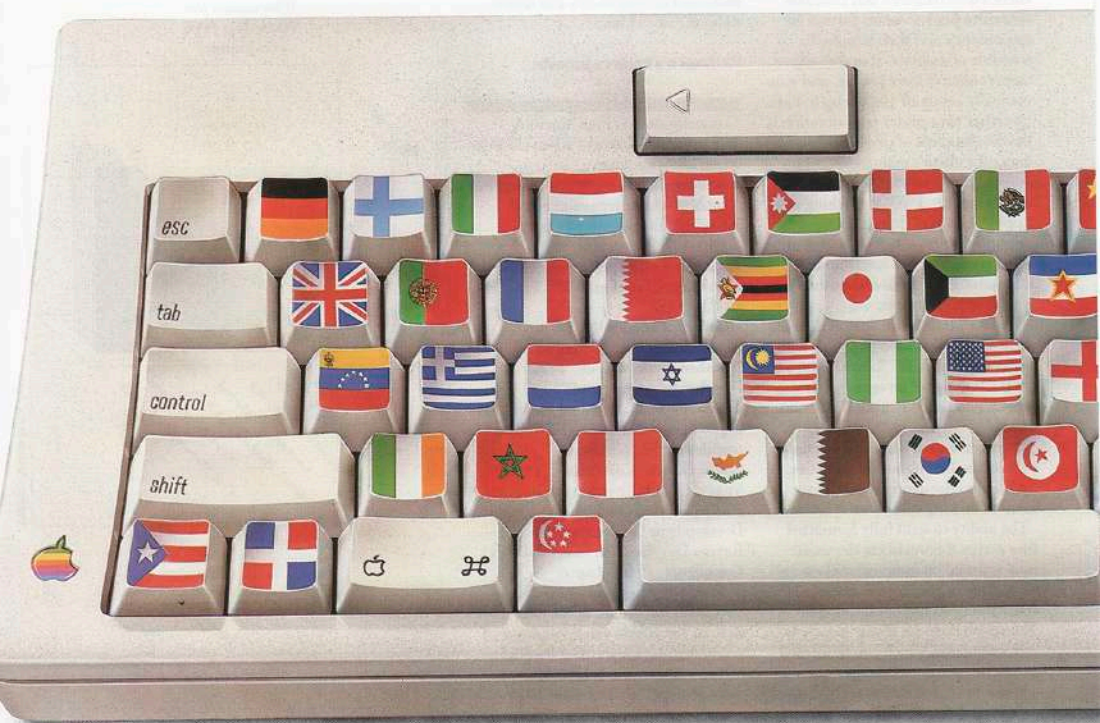
- to audit 17 per cent of the Times Top 1,000 companies in the UK;
- to be the largest single employer of graduates outside the civil service;
- that it has advised on 48 per cent of management buy-outs since 1980 — more than the other "Big 8" firms combined. In the January 1988 issue of *Scottish Business Insider* PMM came top of the annual league table showing which companies audit Scotland's Top 100 companies.

Who audits the Times Top 1000 companies?

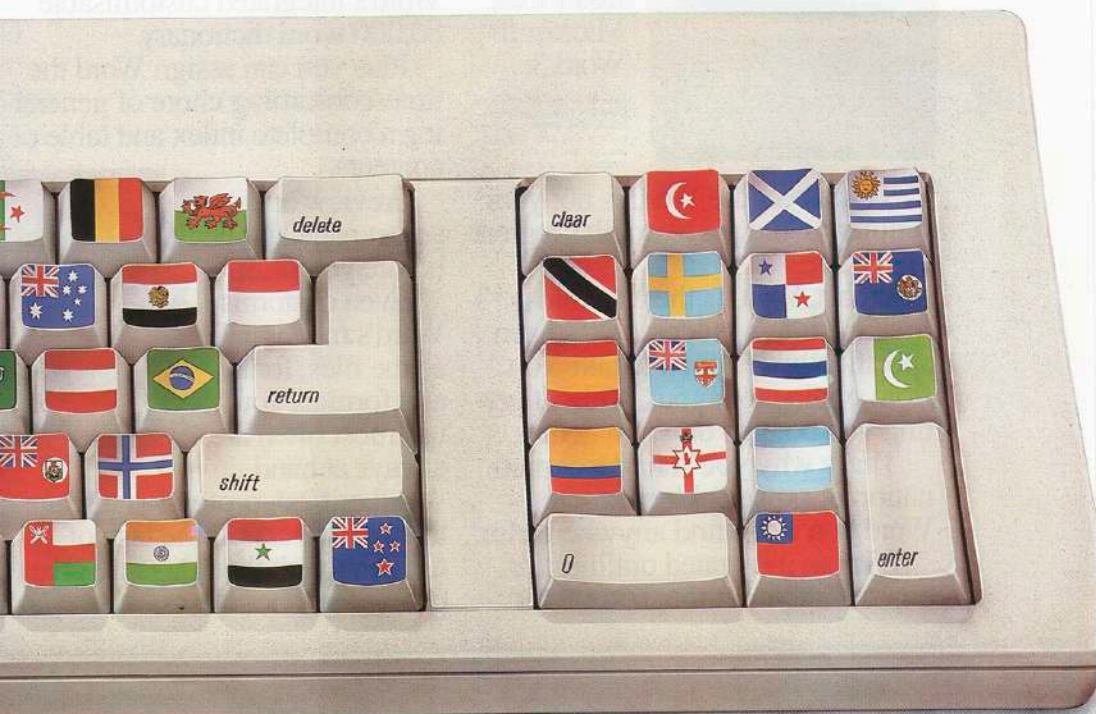


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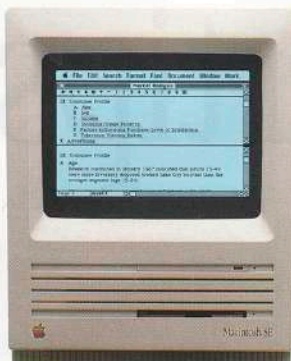
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rearranging pages of paragraphs with a simple click of the mouse.

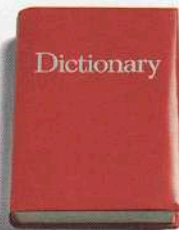
And a simple mouse click is all you need to check and correct your spelling, using Word's integrated customisable 80,000 word dictionary.

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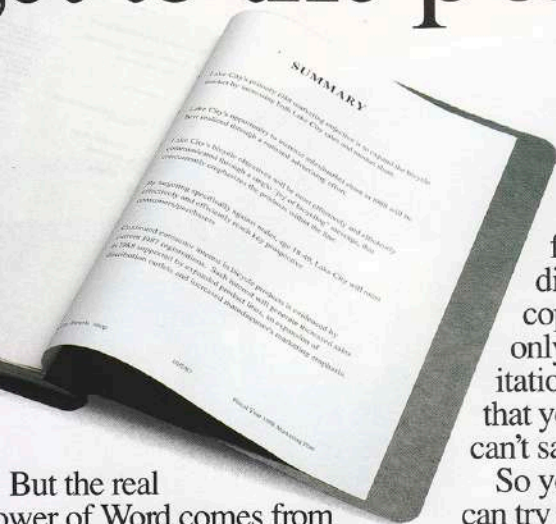


What's the difference between using Word's built-in spelling checker and ploughing through a dictionary? How about a couple of hours.

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Get to the point.



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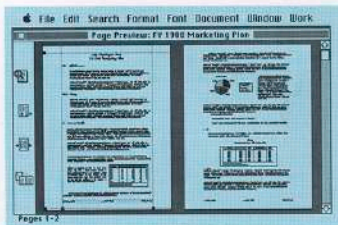
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Richard Dawkins



THE MONEY PROGRAM COMES TO TOWN

In the wake of "Black Monday" the City's need for instant and accurate data is more vital than ever. *Roger Cowe* looks at how the information arm of a major consortium of Swiss banks has turned the Macintosh II into a portal to the international financial community.

Information overload on the Stock Exchange (above) is being countered by new technology. Telekurs' Paul Paton: people want to do more with data than just look at it

All businesses are nowadays in danger of suffering from information overload. The financial sector is probably at the forefront of this phenomenon, and has therefore been eager to use the latest technology, although there is sometimes a suspicion that some of the technology may have been counter-productive.

The drive for better, faster information which can be manipulated more easily has now led to a combination of innovative software and the friendly

Macintosh interface, to produce a financial decision support system which caused a stir at last November's "Computers in the City" exhibition.

The product is *INDES* (Invest Decision System) and it has been developed by a Swiss company as a response to the information pressures on fund managers, analysts and dealers in modern financial institutions.

The company, Telekurs, began life 25 years ago as an information collector for a consortium of Swiss banks and Stock Exchanges. It is now owned



Left: INDES opens up multiple active windows each becoming a separate resource of realtime data

by 350 Swiss banks and has developed into a major technology-based financial information provider. It has amassed 200,000 stocks and shares and other financial instruments such as options, financial futures and commodities.

Three years ago Telekurs decided to develop a system which would not only put this database at the fingertips of the financial world, but would allow data to be worked with in a way which could revolutionise fund management practice. The result is *INDES*, and the first version is nearly complete for a Spring delivery. Telekurs is currently opening computer centres in the key financial centres around the world to sell and support its products to the world's leading financial institutions.

Telekurs chose the Macintosh for this exciting development because there simply wasn't any alternative. Tim Beresford, of Telekurs' London office said: 'Originally the Macintosh was the only true 32-bit processor around, so it was the only desktop machine with the power to handle the volume of realtime updates and data we wanted to provide.' Sales Manager Alan Currie continued: 'The Macintosh is a very powerful terminal, also Apple has the same attitude as us. They are relative newcomers and have a young company attitude. They are not going to sit there and rely on the way they have always done things.'

Currie was pleasantly surprised at the active interest shown by many banks and other institutions when *INDES* was exhibited for the first time in the UK at the "Computers in the City" exhibition.

Much of the excitement must come from the friendly interface of the Macintosh, but it could also stem from the promise that *INDES* will be the first of a new generation of decision support systems for the financial community.

In recent years the volume of information available to workers in the financial world has grown exponentially. But there has been no shortage of demand for it.

Globalisation of the financial markets has increased the importance of overseas stocks and stock exchanges. International economic volatility has made currency and interest rate

movements more crucial. And increased competitiveness has put more pressure on the fund managers to perform. The pressure has been enhanced in London by the Big Bang of October 1986.

The result has been an expansion in the number of electronic price and news services and the costly development by financial institutions of systems to bring together these sources of vital information with in-house operation and decision support systems. Dealers, fund managers and fund analysts are faced with a bewildering array of technology which attempts to give them the information they need the very second they need it. This has resulted in a motley collection of different systems, none of which have really been tailored to the user's specific needs.

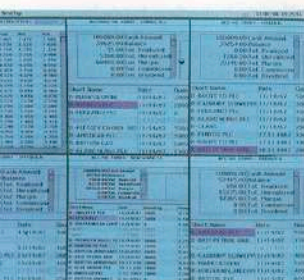
Typically, dealers are faced with three or four screens. These provide news from companies such as Reuters and Excel, prices from services such as the Stock Exchange's Topic, and analysis from companies such as Datastream. On top of that are in-house systems for carrying out deals and managing exposures.

This mix alone would make for highly sophisticated systems. But the need for speed in receiving information and making deals ensures that the financial sector is at the leading edge of information technology. This is why the major players have had to spend so many millions building systems.

From the fund manager's point of view the problem is one of focusing on a relatively small part of the information jungle. The highly unpredictable volatility of the financial marketplace means the exact focus is likely to shift quickly. So managers' information requirements are changing second by second.

Realtime information systems which show price changes as they happen in the financial markets typically provide pages of information in static formats. Every user gets identical data even if he or she is only dealing with one small sector.

In almost all cases the systems are passive. Users can sometimes download data to spreadsheets or other manipulative systems on their own desktop computers. But there is nothing that can be done on the



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screen which actually delivers the financial information.

The trend now is towards systems which combine information with the kind of interactive systems that analysts need to understand the impact of market changes. Reuters, for example, is introducing a realtime spreadsheet which feeds prices into dealers' models to help them evaluate price changes against their trading strategies.

INDES adopts the same approach on a remarkable scale. Through the medium of the Macintosh it will bring to a fund manager's desktop the huge array of information Telekurs holds on dealings in 100 markets around the world. And the power of the Macintosh, together with the *INDES* software, will allow users to see exactly those bits of information they might be most interested in, and to manipulate it with the ease for which the Macintosh has become renowned.

Unlike conventional systems *INDES* does not present all users with a uniform collection of information pages. It allows each user to specify precisely which stocks, for example, will be displayed in the price quote section. And it allows the user to change that specification at the flick of a switch.

The windowing facilities of the Macintosh also allow the *INDES* user to see a variety of screens within the one terminal screen, and to vary the size and position of each window using the mouse. The Macintosh's pull-down menu system enables users to bring up new options quickly.

But *INDES* is not merely a passive

viewdata system for receiving information and transmitting messages. It is based on the concept of the spreadsheet, so that users can carry out all manner of computations on the data contained in the system.

It is difficult to specify a typical combination of facilities. An example might see a combination on one screen of a quote window showing price movements from around the world, portfolios showing the latest valuation, a "tickertape" delivering news on pre-defined subjects, a third party news service, and a graph of index movements from minute to minute.

The quote window can include any mix of securities from any of the 100 markets covered. The securities will be defined and changed at will by the user, as will the order they are displayed in and the information required to be shown about them. Up to 10,000 can be selected from the 200,000 covered by the Telekurs database.

The same obviously applies to the portfolios. Up to 100 may be maintained on each terminal and the manager can add or delete stocks simply using the mouse. A "what-if" function shows the effect on the portfolio of a potential transaction. Up to 100 limits may also be set. Once a limit is defined by the user, the system automatically keeps track of movements on that security and creates an audio and visual alarm when either the upper or lower limit is breached in trading.

Telekurs' UK marketing director Paul Paton admits that "Black

Monday" did affect the plans to market *INDES*. But he adds there has actually been a silver lining to the events of October 19.

"In some ways it has actually had a positive aspect because it has made people examine the services they have got and those they are buying. There's more concern with value for money. People want to do more with data than just look at it. They don't want to buy single-function systems," said Paton, who has been making around two presentations a day to international banks and investment houses.

With its power and flexibility it is hardly surprising *INDES* was such a hit at "Computers in the City". Since that exhibition there has been some fine tuning to the product such as the ability to print from LaserWriter. One major US investment bank is already keenly interested in using the system as a means of improving its competitive edge in what, since the October crash, has become a desperately cut-throat industry. ■

Roger Cowe is a financial journalist on *The Guardian*

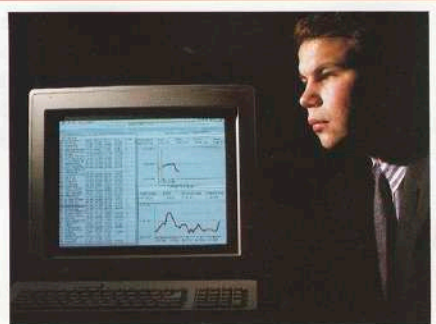
Company Name Telekurs AG
Founded May 1962
Registered office Neue Hard II, 8005 Zurich
Corporate client base 3,000 worldwide
Number of employees 1,400
Turnover 260 million Swiss franc
Subsidiaries UK, US, France, Germany, Netherlands

SECOND OPINION

Mark Cardy is a fund manager with Atlanta Fund Managers and is responsible for seven unit trusts worth £20 million. His session with *INDES* was the first time he had used a Macintosh.

Cardy was particularly impressed with the system's ease of use. "Having the realtime window display of a portfolio was very useful. It gives the ability to offer clients instant answers instead of last valuations that may no longer be up to date.

"Showing the last price dealt is helpful as it enables you to tell if there is a real move in the market. The way it



highlights stock price movements is also a plus.

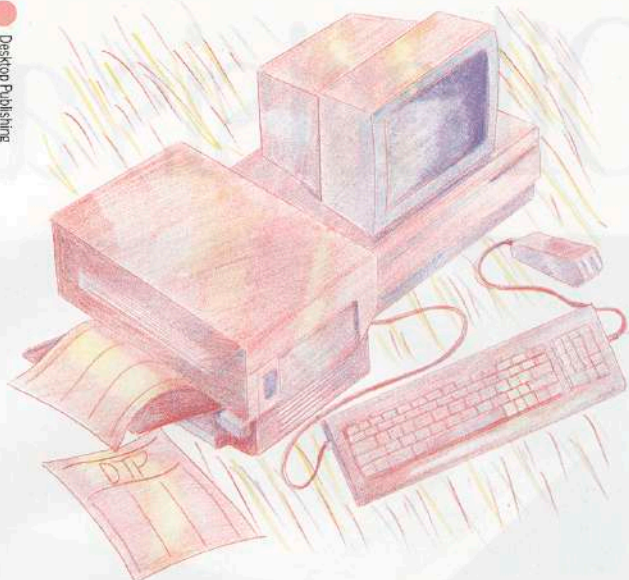
"The problem I found was that, unlike *TOPIC 200*, the program didn't display how much stock was up on the day. But one very helpful function is being able to punch up Japanese and Hong Kong stock and see them move in realtime.

If it is possible to bring up one window showing New York and on another, say, Hong Kong, then I think Telekurs is laughing. It is useful to see all the markets on one screen without having to punch them up individually."

David Banks

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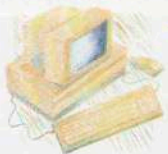
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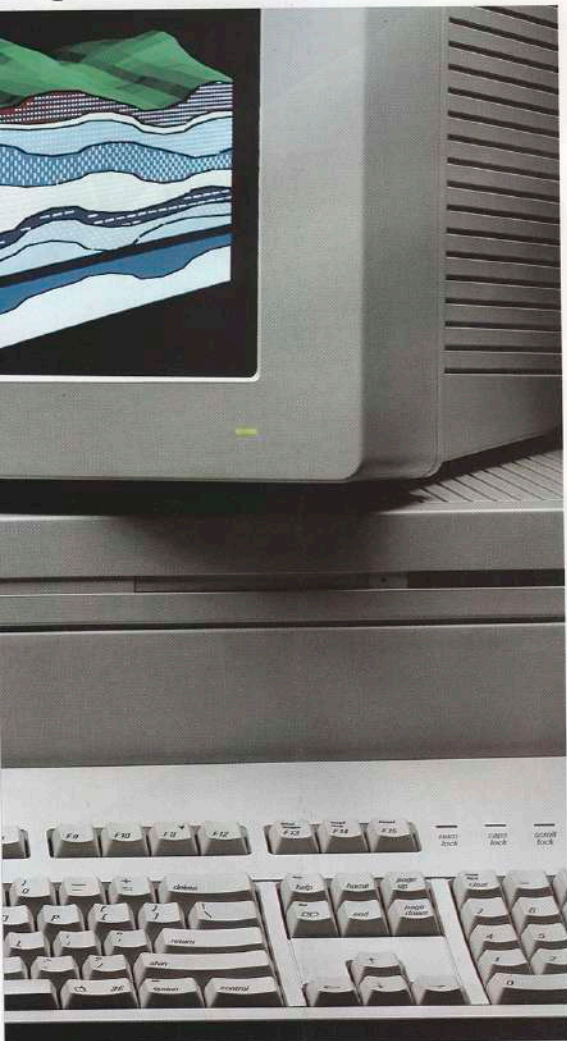
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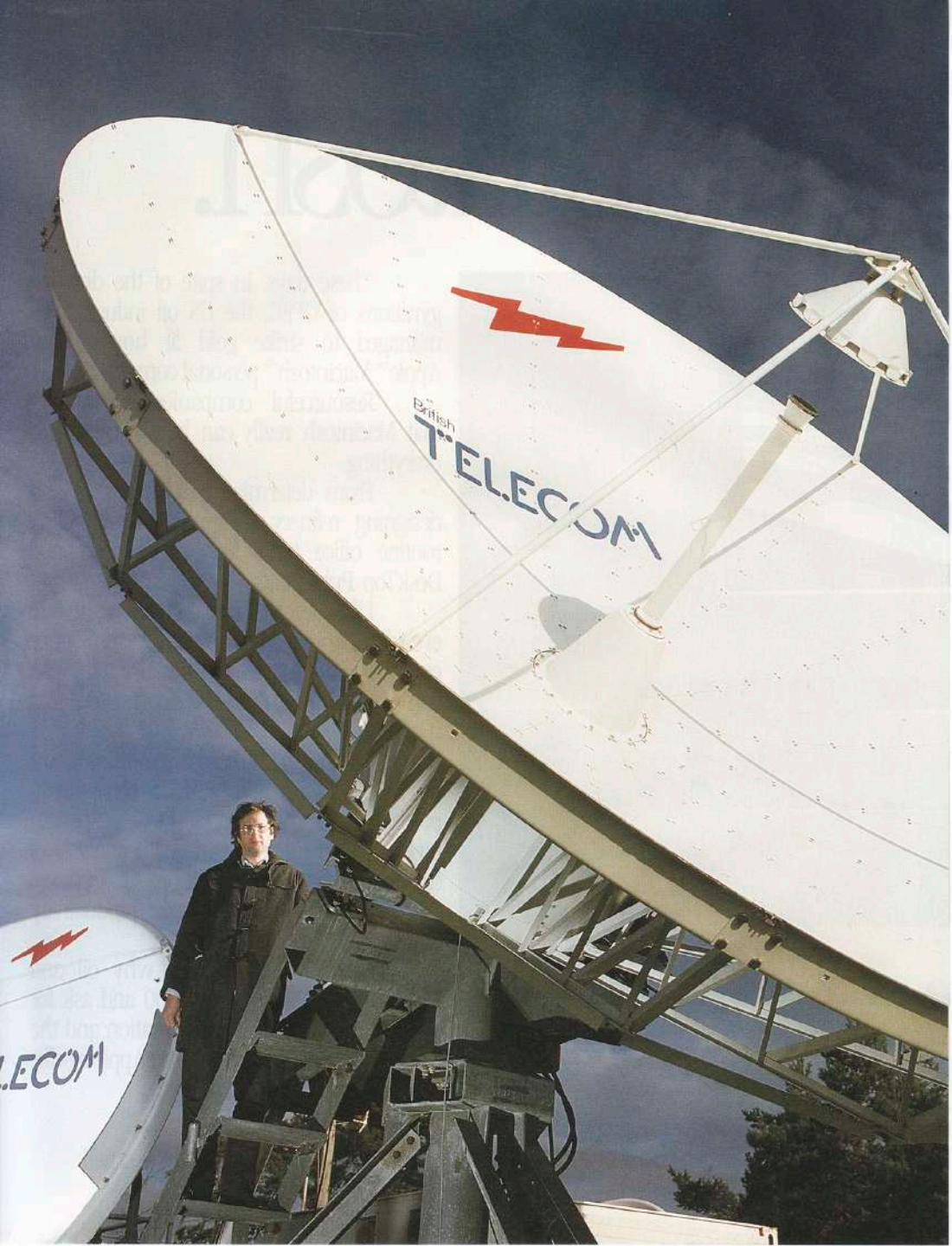
Like other major companies, they're even finding that Macintosh maximises prior computer investments, because it can communicate with MS-DOS computers and mainframes.

Macintosh also has a lower training cost per desktop than any MS-DOS computer - prompting some spectacular jumps in productivity. In a recent in-depth analysis of selected Macintosh installations in business, users consistently reported productivity increases of 15%-25% and more.

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BT'S RESEARCH ARM TAKES THE MARKETING PILL

Privatisation has brought British Telecom the challenge of turning pure research into profit-driven departments making marketable products. Part of the answer has been to boost power for desktop processing by linking Macintoshes with an existing DEC VAX minicomputer. *Maggie McLening* visited BT's Martlesham Heath R&D department to see how it is shaping up to commercial realities.

On the site of the Suffolk airfield where wartime flying hero Douglas Bader took off, British Telecom now develops technology for peacetime launches of a different kind.

Projects include a revolutionary translating telephone which uses speech processing to translate business phrases between six languages. More down-to-earth are already off the drawing board are British Telecom's System X telephone exchange, the Topaz hands-free cellular phone and the Westminster Cable switched-star cable TV network (the first switch-star system in the UK).

Since 1975, the 100 acres that used to be the Martlesham Heath airfield has been the home of British Telecom Research Laboratories (BTRL). BTRL researchers have won the

Queen's Award for Technological achievement three times.

BTRL researches five major areas: component technology, communications management, network systems, information technology products and information technology standards. Each department is again divided into as many as six divisions dealing with a specific area of technology.

The British Telecom research arm is now regarded as a world-beater in advanced optical fibre transmission systems. A joint business venture with the US-based Du Pont Corporation led to the formation of BT & D Technologies. Some of the things it will manufacture include opto-electronic components for laser transmitters and receivers at a new plant in Ipswich.

Although British R & D efforts in

GREAT APPLES IN HISTORY

No.4: The very first byte

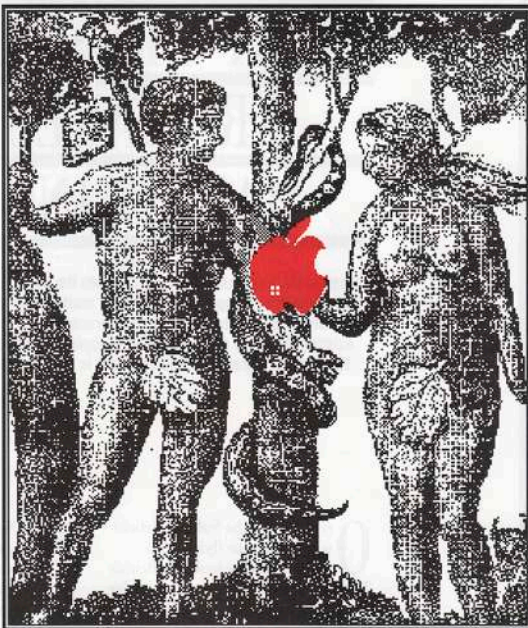
Adam Man and Eve (née Rib - his bit of spare), discovered earlier than most the pitfalls of office computerisation. "In a perfect world" claimed Adam, "we'd have a computer system that kept pace with the business." "That's nice dear" replied the world's first computer widow.

As proprietors and sole customers of the Paradise Garden Centre, they were at the mercy of their supplier. Around them rotting tangerines, apricots and other fruitless old devices lay neglected. From their Acorns grew countless tall oaks before they were convinced those old BBC Bs were finally up the creek. God's problem was the oldest in the book. His dealership was too big - hardly surprising, mind you, from a global multinational that's up-and-running in less than a week. Like almost every supplier since - He promised them the earth

..... then vanished. He'd managed without technical back-up, so why shouldn't everyone else?

Today the quest for perfection is much simpler. Come and talk to Callhaven (Apple Reseller of The Year 1987!) - people with an original approach; who know their business and talk *your* language. Plus the latest in Macintosh hardware; software AVAILABLE AND DEMONSTRATED FROM STOCK; training and, of course, simply divine back-up.

"Nobody's perfect, John" He said, not even bothering to remember his principal client's name, "I might be omnipresent, but I can't be everywhere". An excuse quoted still to this day. Eventually, while hung up in a particularly slow tree search, Eve was tempted beyond endurance.



Adam soon got his teeth into it and left the Almighty an E-Mail message closing their account, nailed to a tree. In time they discovered that the serpent was just as difficult to find. (Have *you* tried getting purgatory on the phone? Just dial 192 and see what it's like). At last they'd managed to get His back up. "This is Appletalk where I come from" thundered a self-confessed jealous God and promptly evicted them. The rest is history. With nothing between-them save the odd figleaf and a bizarre trust in the Algorithym Method they were soon blessed

with two bonny, bouncing peripherals - Able, and his brother Michael, Cain e.

At the time, not a lot people knew that.

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London WC1X 8TZ
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Kingston Apple Centre
Kingston Hill,
Kingston upon Thames,
Surrey. *Opens in April.*

high technology have traditionally been technology led rather than market led, BTRL seems to have recognised the inherent limitations this presents, and has now introduced major organisational changes which include the appointment of Programme Office Managers to ensure that R & D effort is closely matched to business needs and commercial requirements.

Indeed, privatisation has brought a new atmosphere of commercial reality at Martlesham as BTRL continues the metamorphosis into a business-oriented R & D unit to support British Telecom's drive into fiercely competitive technology markets.

For the first time BTRL has had to justify its existence and define financially-viable business strategies. Emphasis is now being placed on achieving a well-balanced R & D portfolio with the bulk of the work financed by BTRL departments selling their services to the BT trading divisions. The annual £190 million R & D expenditure (about 2.1 per cent of BT's turnover) is now being directed to meet BT's more immediate needs as well as the research necessary to deal with the threats and opportunities in the longer term. Privatisation has also led to a streamlining of the management chain.

The head of BT's Research and Technology Executive, Dr Alan Rudge is keen to counter the image of "an ivory tower full of boffins." He said: "My objective is to increase internal financial and commercial expertise to match BTRL's outstanding technical capability and to ensure that our services are well coupled with the BT trading divisions."

Computer Resource Manager, Nigel Titley added: "People are forced to think about what they are doing and what will come out of it. There is far less speculative research. BT has not cut the budgets, but more money is being channelled into applied research and development."

"Before privatisation things didn't work on a direct cost basis because no money was transferred. We now tackle pricing within a project management frame-work on the basis of the man-years of development invested."

Production of software development tools is one of BTRL's major functions



*Titley:
'majority of
staff have a
Macintosh for
producing docu-
mentation'*

and is carried out by the software engineering department.

Many of the development tools originally produced by the department for internal use have now been adopted throughout the commercial computer industry. These include graphics tools capable of generating program code from software charts, multi-user building control applications, and a low-cost graphics application for designing software modules.

They are developed mainly on IBM PCs, Sun and Whitechapel workstations connected by Ethernet to a Digital Equipment Corporation (DEC) VAX minicomputer host.

The network also supports Unix minis, but they are all outnumbered by the 60 Macintoshes introduced just over three years ago as part of BTRL's move towards providing business support applications such as pro-

ject planning, graphics, and Desktop Publishing.

All 60 Macintoshes are connected to the Ethernet spine by five main local area networks using a product called *AlisaTalk*, (supplied in the UK by JPY Associates) which marries the Macintosh's window/icon/mouse interface and local power with the VAX's high-power shared data processing and communications. *AlisaTalk* shows the VAX on the Macintosh's screen as simply another icon to be clicked on like any other disk.

AlisaTalk can connect VAX / VMS systems using Apple's standard *AppleTalk* network architecture. The Apple computers can then function either within their own *AppleTalk* network, or can access the VAX and take advantage of remote printing and spooling.

Because the software resides on the

Because the software resides on the VAX, *AlisaTalk* eliminates the need to install special software on each Macintosh. A major advantage is that Macintosh users don't need to be logged onto the VAX to use its file server and print services. A special file server utility provides the interchange of data between the Macintosh and VAX environments.

'The objective was to use the VAX as a file server so that all our Macintosh data is backed up by the power of the VAX,' explained Titley. 'This gives the Macintoshes access to 450Mb of storage instead of 45Mb or even 4Mb. It also means people can work more efficiently as it saves them having to do their own back-up. This way they can work on whichever machine they want to, and see the VAX as just another disk to be opened.'

'The Apple machines were chosen mainly for the available software such as *MacWrite*, *MacDraw*, *MicroPlanner* and *PageMaker*. Staff were generally impressed with the way they could produce good quality internal documents. Although programmers use dumb terminals for development work on the mainframe, the majority of them also have a Macintosh on their desks for producing documentation.'

One division uses Aldus's *PageMaker* Desktop Publishing program to produce an in-house 20-page magazine. The artwork is created on LaserWriter and then printed by the reprographics department.

Martlesham's seven-strong sales team, which sells exclusively to the rest of BT, is also a major Macintosh user. It uses Apple's machines for processing sales records and everyday documentation.

Titley is now looking at the opportunities of feeding Macintosh files into DEC's Code Management System to solve problems in controlling different versions of files.

He hopes to use JPY Associates' *AlisaTalk* Print System which will allow users to print documents straight off the VAX. Although each office has an Apple LaserWriter, larger volumes of hard copy are often required. *AlisaTalk* Digital Print will also be brought in to enable a Macintosh to use DEC's PrintServer 40. This can print 40 pages per minute, compared

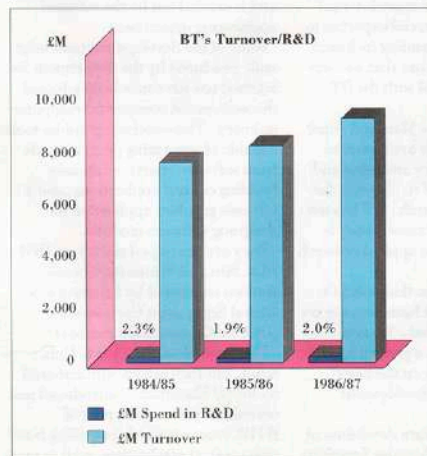
to eight pages from the LaserWriter. This is expected to simplify BTRL's document production.

Whether the Macintosh business support systems would have been priorities before privatisation is debatable. But BT has been forced to examine and revise almost every aspect of its structure in a bid to become a world force in technology, as well as in telecommunications.

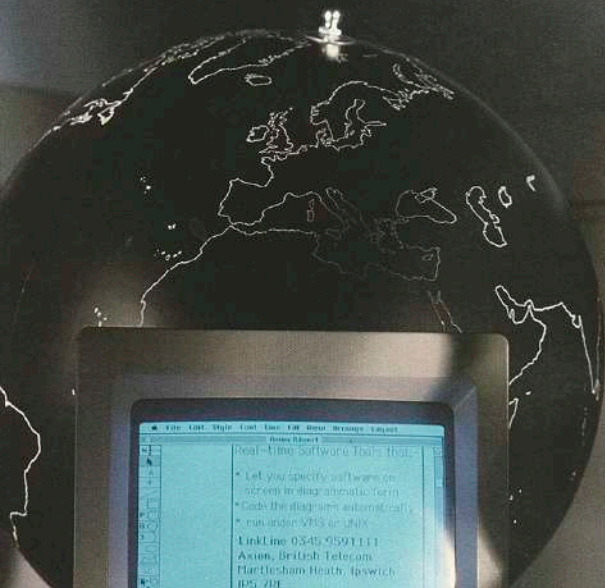
A vital component of the resulting strategy has been the stimulation of commercial awareness in areas hitherto allowed to dwell in pseudo-academia.

Maggie McLening is Contributing Editor of Apple Business

Company name: British Telecommunications Plc
Founded: 1984
Registered Office: 81 Newgate Street, London EC1A 7AJ
Chairman: Iain Vallance
Number of Employees: 236,461
Turnover: £9,424 million (year ending 31 March 1987)
Pre-tax profit: £2,067 million (1986: £3,387 million)
Range of ordinary share price (over 12 months): 334.00 - 205.00
Earnings per ordinary share: 22.4 pence
Dividend per ordinary share: 8.85 pence



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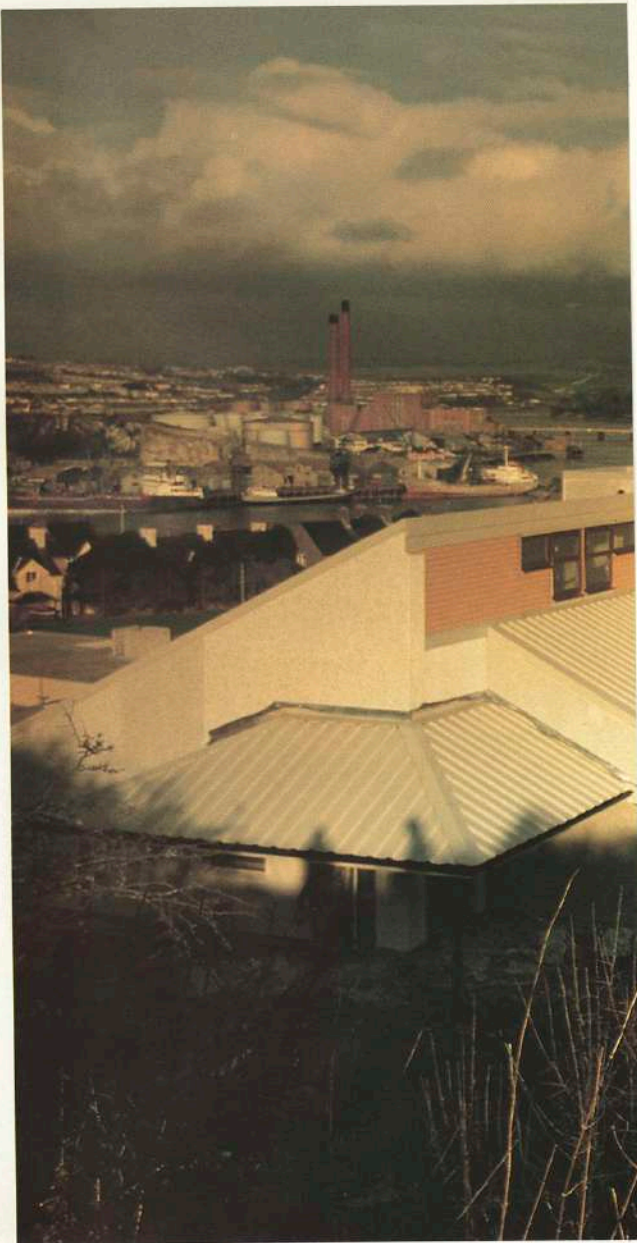
MicroVAX

DRAWING THE LINE ON NEW TECHNOLOGY

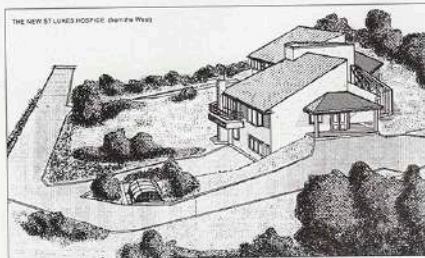
Architectural practice Leslie Fox Albin has revolutionised its business by replacing traditional drafting boards and Rotring pens with Macintoshes. The success of its Computer Aided Design approach was proved last year when the three-year-old company won the Architecture/Construction category of the Micro/CAD Achievement Awards for one of its projects designed entirely on a Macintosh. *Graham Vickers reports.*

There is something highly unusual about the architecture of St Luke's Hospice in Plymouth, although you would never guess what it was just by looking at it. The entire design of the £350,000 building by architects Leslie Fox Albin was conceived and refined on a Macintosh in a third of the time it would have taken by conventional methods.

Architect Mark Leslie and the Plymouth hospice designed and drawn on a Macintosh







St. Luke's hospice (above and left) was re-designed six times. 'If we hadn't used Macintosh we would have given up,' said Leslie



Indeed so successful was the use of the Macintosh in the St Luke's Hospice project that it resulted in Leslie Fox Albin scooping the Architecture/Construction category of last year's Micro CAD Achievement awards.

Ironically the awards are given by IBM CAD software house Robocom.

Partner Mark Leslie says the Macintosh has revolutionised the structure and business of architectural practice Leslie Fox Albin.

'We had to re-design the St Luke's project six times. If we had been using conventional methods we would have given up long ago,' he admits.

Architects are not generally considered to belong to a fast moving, responsive profession. Trying to sell computer technology to an architect therefore can be an uphill struggle as traditional working methods are not easily abandoned.

Leslie Fox Albin broke with tradition when they virtually sold *themselves* a Macintosh 512k, and then went on to challenge the conventional wisdoms about architecture and CAD. The company soon bought another Macintosh, then more.

Today it has eight Macintoshes, one for each member of staff. But then partner Mark Leslie is not a typical architect. Graduate of Jesus College, Cambridge and Harvard Graduate School of Design, fast talker and critic of the mainframe mentality, Leslie has a lot to say about the Macintosh. 'The Macintosh is ideally suited to what most architects are doing most of the time,' he says.

For some members of his profession, however, he says: 'The word "computer" has then reaching for the clove of garlic and the stake.'

Leslie's view of computing is based on his practice's remarkable two-year success story to which he believes the Macintosh has contributed significantly.

However he did have to deal with initial scepticism from the ranks of fellow professionals who had thrown away the garlic and invested in CAD systems costing between £25,000 and £50,000.

Leslie Fox Albin was founded in 1985 by Mark Leslie, Gerald Fox and Colin Albin. Leslie confidently predicts turnover for 1988 will reach £500,000 compared to the £60,000 notched up

from the first year's trading.

The three partners had previously worked together as the principal UK associates of the Peter Legg international design practice.

There much of their work had involved selling architectural design solutions to giant computer companies by means of bucolic, hand-drawn visualisations.

Nowadays their work includes some more human-scale environmental projects which they present and design exclusively with Macintosh technology. Leslie believes that even Apple may not yet fully realise how suitable its products are for architects.

'I believe Apple has looked at what the CAD industry is trying to sell to architects and concluded that its product isn't quite like that.'

In fact most architectural companies tend to be small; often employing only two or three people, which makes them ideal candidates for a Macintosh architectural system where the idea of a graphics processor as a user-friendly alternative to the Rotring pen is really very appropriate. A full CAD system is something that would suit a much bigger, multidisciplinary type of organisation.

'Our first Macintosh appealed to us as a handy gadget for labelling architectural drawings. Gradually we began to see its potential for actually generating drawings,' explained Leslie.

'We were renting for the first few months, but once we agreed we needed to buy a system we had a good look at everything on the market. Armed with what we knew about our rented Macintosh, we were able to ask all the awkward questions.'

Atari and AutoCAD were both considered. So was the system recommended by the Royal Institute of British Architects for small architectural practices; TurboCAD.

'But it was MacDraft software which convinced us. The great thing about MacDraft is that it has been designed to work the way architects think.'

'I understand an enhanced version is imminent. But if no other piece of software ever came out, we'd be happy with MacDraft.'

In fact the practice currently uses three software packages. These are *Schema* (a 3D modeller used for

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spatial analysis), *MacDraft* (the draughting facility) and *MacPaint* (to apply texture).

'The real beauty of the system lies not within any of the software itself but in the integrated environment of the systems.'

'Its great strength is that objects on one system can be dragged out, cut, and pasted onto another. All problems of differing scale are automatically taken care of. Only Apple has achieved that kind of environment.'

'The standard CAD approach is to have an all-singing, all-dancing package that tries to do everything. Because they have so many features these systems become virtually unusable. Macintosh, on the other hand, is a simple environment which allows you to have an electronic pencil software, rubber software and ruler software which can all talk to one another.'

In practice, Leslie Fox Albin now uses *Schema* to create a basic model on the computer. A viewpoint is chosen and hidden line removal is calculated before the model is transferred to *MacDraft* for detail work.

MacPaint supplies the final touches and then the drawing is printed out. The practice does not have a plotter and Leslie seems to enjoy the sudden return to "hands-on" finalities; print-

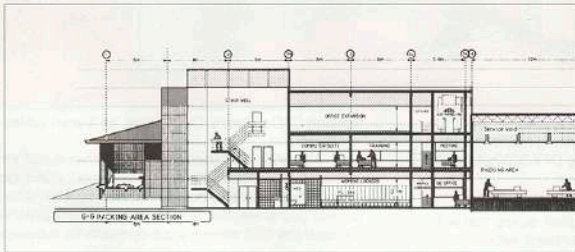
outs are photocopied, put on film, and any colouring is done by hand.

'What is happening now is that micros are being produced in such numbers and so fast that they have much more usability than those big systems. 'Workstations are like drawing boards,' says Leslie. 'Everyone on the design team has to have one.' And cost recovery? 'At every stage Macintosh has only represented the cost of one employee for one year. And it has doubled our capacity to produce drawings – the equivalent of four employees. So in fact it's saved us several thousands of pounds in the first year alone.'

Leslie Fox Albin has also been able to generate much bigger projects which Leslie says would have been impossible to tackle without the Macintosh. One of these projects, Leslie maintains, endorses his view that micros are what people really want.

'Last year we started working for New Jersey-based Becton Dickinson, a multinational manufacturer of blood-sampling tubes. It uses IBM throughout, but has now bought several Macintosh II's to act as receiving stations for our design drawings.'

'We soon realised that the people we were dealing with were using us, the architects, as the excuse for getting in the system they wanted.'



Drawings for the £7 million Becton Dickinson factory were entirely Macintosh-generated



MAIN ENTRANCE, LABORATORY FACILITY, BECTON & DICKINSON PLANT
COMPUTER MODEL BY LESLIE FOX ALBIN



The first job Leslie undertook for Becton Dickinson was a 40,000 sq ft extension for its Plymouth blood-sampling tube factory. The work was done entirely on a Macintosh from proposals to final designs in less than six months.

On November 5 last year Leslie was given the go-ahead to design a £7 million 180,000 sq ft labware factory for Becton Dickinson next to the company's blood-sampling factory. On-site building work began on



January 4 this year and the factory is due for completion at the end of the year.

'This sort of time-scale would be impossible using conventional methods. The Macintosh cuts the whole process down by, literally, months.'

Leslie's praise for the Macintosh is effusive although he feels the standard screen is too small. The company did recently invest in a single 19" Megascreen which acts as a valuable punctuality incentive to

staff. The first in gets to work on it.

'Creative professional thinking is still the practice's strength. But it is the Macintosh that has enabled us to expand rapidly, prestigiously and profitably by cutting out the time-consuming graphic chores.'

'Sophisticated three-dimensional graphics and colour are fun but not essential. What you really need is a system which can handle dimensioned line drawings covered in text with greater speed than using a Rotring

pen.' He also warns against getting a computer system just for drawing. 'To be effective, a computer system must electronically integrate every conceivable office activity.'

'Computer experts may sneer at the Macintosh because its accessibility takes away their role in life. But you only have to look around our office to see what it can achieve.'

Looking over the site of the 180,000 sq ft Becton Dickinson factory. From drawings to the start of on-site building took less than two months thanks to a Macintosh

Graham Vickers is a freelance architectural and design journalist.

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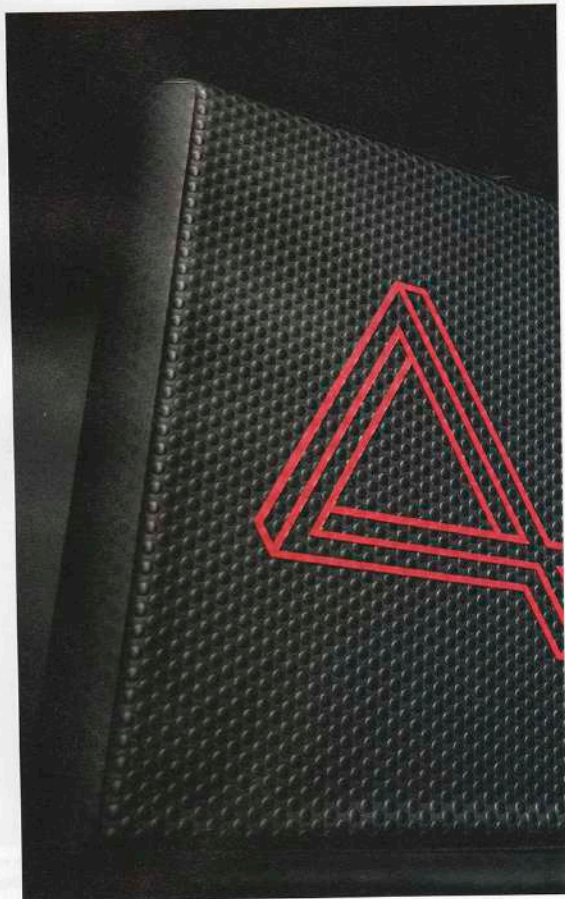
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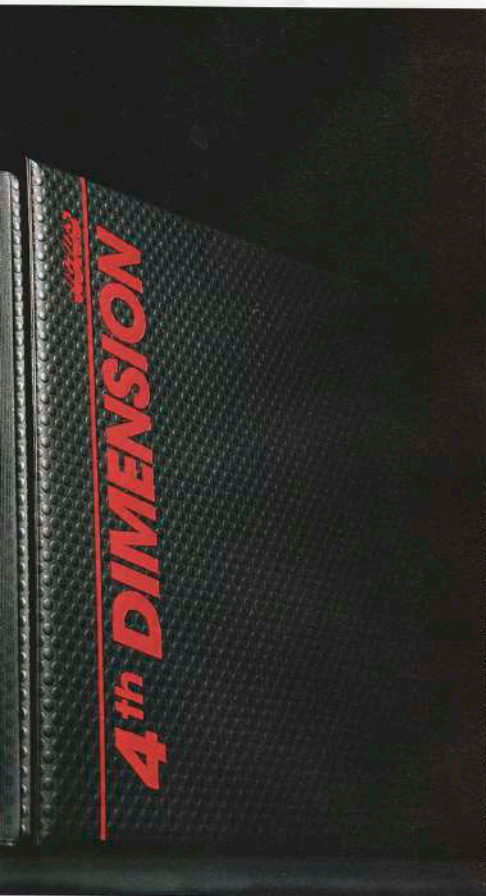
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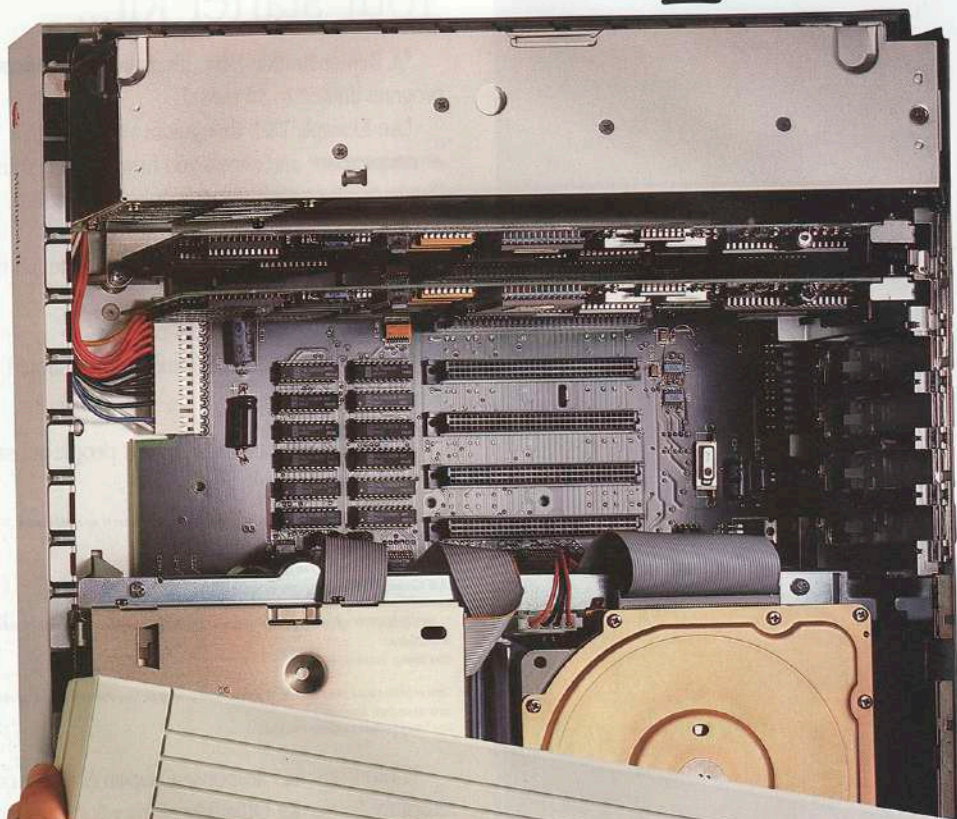
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Add a co-processor card and you can run not only Macintosh programs, but other programs you may already be using on IBM® PCs.

A communications card can provide

connections to office networks like Ethernet® and company mainframes. And with a video card, you can drive the high-resolution 13" Apple RGB monitor, to create images of near photographic quality, drawing from a palette of more than 16 million colours.



Macintosh II is open to other choices as well.

"Macintosh II accepts up to six expansion cards. So its easy to add functionality. For example the ability to run MS-DOS and Macintosh software concurrently."

You can expand memory all the way to eight megabytes on the main board. Choose one or two floppy disk drives. And a built-in hard disk that stores 20, 40 or 80 megabytes of work.

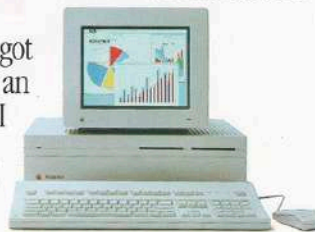
But expandability is only part of our story.

At the core of Macintosh II is a 32-bit Motorola 68020 processor, clocking in at a powerful 16MHz.

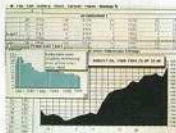
A numeric co-processor allows the Macintosh II to perform calculations 200 times faster. Unlike other desktop computers - it comes as standard.

For more information dial 100 and ask for Freefone Apple.

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In fact some of us have been putting Macintoshes together with VAX for some time now. If you're a VAX user and want to experience the friendliness of the Macintosh interface, speak to the four specialist AppleCentres located across Britain who will understand your needs. Our staff can help with: Macintosh to VAX software, Macintosh applications which can access VAX files, AppleTalk to DECnet hardware interfaces, Macintosh training on and off site, Professional, 24-hour hardware and software support.

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Speak to the AppleCentres with experience

FLYING DOWN THE FAIRWAY

After a hard day at the office, what could be more enjoyable than a challenging round of golf? What could be more enjoyable than remembering to book time on the course, driving there, waiting for your partner, trudging round on a cold, wet standard British day, losing a few balls and then finding you're off your stroke?

For fair-weather golfers, and people who wish they could scrap the game so far and start again, the Macintosh has an answer: *MacGolf*.

The game boasts two full 18-hole courses, complete with all the usual golf course features. You can play the front or back nine or the whole course. More of a simulation than a game, each hole is shown in true perspective from behind a digitised golfer (yourself). There's a map of the hole you're playing to allow you to plan your shot, and the path of each swing you take will be traced as you hit the ball. Wind speed and direction are also shown and a dial shows the (theoretical) direction you will shoot in unless you make adjustments.

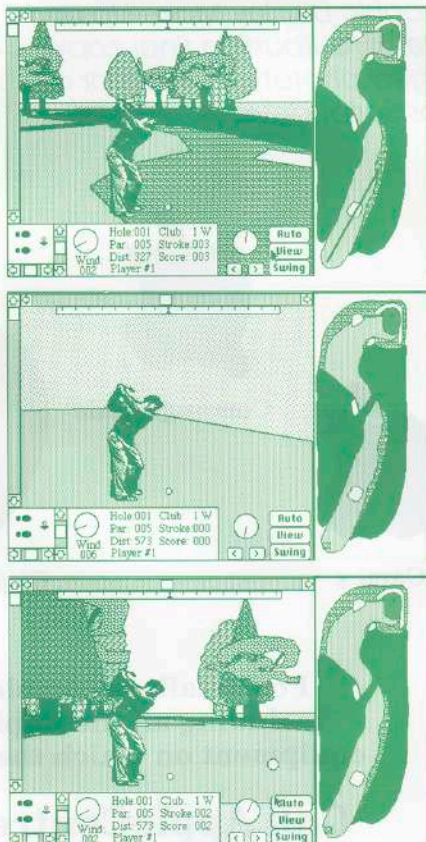
With a choice of 14 clubs: three Woods, 10 Irons and a Putter, you can adjust your stance, ball position, swing direction, angle and power all with simple mouse clicks. From the first tee you face a 363-yard "dogleg" round a lake.

Do you play a straightforward Number Three Wood down the fairway or try to fade a full-powered driver and hope the wind will take it?

MacGolf is superbly realistic; the golfer swings, and the ball flies, bounces and rolls. On the green it curves with the ground. Sound effects include an emphatic whack of the club striking the ball, a comfortable rattle as it drops into the cup and the cheers or groans of unseen spectators.

Up to four players can play together and there are three levels of difficulty. On the first, wind speeds are low and the clubs over-perform. It's possible to play through either course under par (72 on both) using just a Number One Wood and a Putter, but on the others wind speeds increase requiring

Life with the Macintosh doesn't have to be all work and no play. There is now a vast range of leisure software for the machine including the popular *MacGolf*. *John Conquest* discovers all you need to tee up is a Macintosh and a mouse.



A map of the hole and the path of each swing taken is shown on screen. A dial shows wind speed and direction, and the landscape changes with each shot.

a more sophisticated approach.

The game does have some handicaps. In Version 1.0, a game in progress cannot be saved. In other words, you can't store it in memory to be carried on with at a later date. This could be very annoying with multi-player games which can take some time, so make sure you get Version 2.0.

You can't pick out a particular hole at random, (say one you want to practise on), but have to play through the preceding ones to get to it. In any case, once a stroke is taken, for better or worse, it can't be replayed, so if you forget to change clubs, tough luck.

The landscaping is very pretty but it can take some time for the program to redraw the screen which it does, not simply with every shot, but if you change your angle before taking a shot.

Once you feel that you've had enough of *MacGolf*'s two courses, the same company also offers *MacCourses*; four very tough layouts designed by professional golf course architect Jay Wohlrabe that are much harder than the original two.

One of them is pretty bizarre; a purely geometrical course with very oddly-shaped, tiny fairways and many, many, hazards. A "simulation", which is how *MacGolf* is described, implies a degree of realism that would enable a program to be used as a teaching aid. Certainly most people will find *MacGolf* to have many educational aspects, as well as being a lot of fun - even for non-golfers. However the documentation with *MacCourses* is so basic that it neglects to mention that the master disk must be in the internal drive.

There's no doubt that an experienced golfer, once he or she has grasped the nuances of *MacGolf*'s interface, will have a decided advantage over the novice.

MacGolf (£49.95) and *MacCourses* (£34.95) are distributed by: MacSerious, 17 Park Circus Place, Glasgow G3 6AH. Tel. 041 332 5622.

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DEC and Apple forge alliance

DEC and Apple have finally announced a joint development effort to integrate Macintosh computers and AppleTalk networks with VAX systems and DECnet/OSI networks.

The combination represents one of the strongest alliances yet made in the computer industry, and joins the technologies from two of the leading players.

Apple and DEC are now in a strong position to threaten IBM which has still to implement its new OS/2 system.

The deal is also excellent news for DEC's customers. This is



Sculley: year's talks with DEC

because integration of the Macintosh interface into the DEC environment will make multi-vendor office computer

systems more accessible to users who lack computing skills. For instance Macintosh applications will be able to tap information from VAX systems and networks.

The announcement between the two companies is the result of a year of informal discussions between the two companies.

Apple chairman and chief executive officer John Sculley and DEC president Kenneth Olsen had been talking for the last 12 months on ways to dovetail their respective technology. (News Analysis see Page 63.)

Colour support for Illustrator

Adobe has beefed up its award-winning *Illustrator* program which allows artists to create PostScript-compatible drawings and artwork. *Illustrator 88* adds several new features such as colour, blending, masking and a revised drawing tool to simplify the drawing process.

As well as producing colour images on-screen, *Illustrator 88* can create colour separations for output to a PostScript supported typesetter.

'We've provided a complete palette of tools and features that are easy to use,' said Adobe president and chief executive officer John Warnock.

Illustrator itself is under threat from Aldus's new professional drawing program *Freehand* which is due soon.

Adobe has also produced a developer version of *PostScript* called *Display PostScript* which gives true screen display of final printed output and which could at last enable hardware manufacturers to get closer to emulating the graphics capability of the Macintosh. However Apple is said to be displeased about this new development. (News analysis see Page 64.)

New printer trio fully upgradeable

A new family of laser printers has been launched by Apple to replace the three-year-old LaserWriter and LaserWriter Plus. The upgradeable units span general office printing to sophisticated Desktop Publishing. They use a modular design enabling board swaps to be achieved in seconds.

The three members of the LaserWriter II family all retain the 300 DPI resolution of the outgoing LaserWriter. The new range comprises the high-performance expandable IIITX, the mainstream IIINT, and a new entry-level laser printer aimed at individual users.

Among the claimed improvements are darker blacks, higher reliability, longer lifespan and enhanced paper handling. The LaserWriter and LaserWriter Plus will be discontinued, although Apple will continue to service and support them. (Full report on Page 66.)

Ashton-Tate buys Ann Arbor

Ashton-Tate has catapulted itself into a front-running Macintosh software house with its acquisition of Ann Arbor Softworks in a deal that could reportedly be worth \$30 million.

The buyout means that Ann Arbor's long-awaited advanced word processor *FullWrite Professional* could at last see the light of day. The deal also includes Ann Arbor's *Full-Paint* graphics program. Although *FullWrite Professional* has been extensively advertised by Ann Arbor over the last year, it has essentially remained on the drawing board.

Ann Arbor had a major presence at January's MacWorld Show in San Francisco, but it was only able to distribute demo disks of the product.

Quarter revenues break \$bn barrier

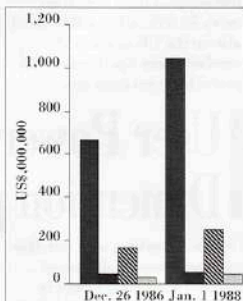
Apple has reported its first billion dollar quarter with sales equivalent to £588.7 million, a 57 per cent increase over the £374.1 million notched up in the same three months ending January 1 last year. Net income after tax more than doubled to £68.5 million. It was £33 million in the previous year.

The boost is largely due to the success of the Macintosh SE and the Apple IIGS.

In fact products introduced during the last fiscal year accounted for two-thirds of revenue during the quarter proving the validity of Apple's new product strategy. Last year Apple launched more products than in the entire 10 years of its history.

Apple is also Silicon Valley's biggest spender on research and development. About \$57 million was spent on R&D in the quarter under review. Marketing and distribution budgets were up to \$249,373,000 compared with \$165,267,000 last year.

Apple Inc's balance sheet showed total assets of \$1.43



Apple sales and revenues soar

billion at the end of the quarter under review.

'We are very pleased with this record performance,' said Apple chairman and chief executive officer John Sculley.

'Apple's 1987 calendar year revenues passed \$3 billion which we feel is a significant milestone,' he said.

Apple unveils own version of Unix at Dallas UniForum

DALLAS Apple's thrust into the corporate market has received a major boost with the launch last month of *A/UX* of, the company's own version of *Unix* which allows as many as 4,000 *Unix* applications to run on the Macintosh II, writes *Phil Manchester*.

A/UX, which was announced at the annual UniForum meeting, is based on *System V2.2*, an early version of AT&T's *Unix* and includes extensions from the *Berkeley B4.2* and *4.3* versions. Apple's release also supports Sun Microsystems' *Network File System*.

Three types of user interfaces are being offered including a version of MIT's *X/Windows* and a version of the standard Macintosh interface.

Apple chairman John Sculley delivered the conference's keynote speech in which he told the *Unix* world that *A/UX* was

"only the beginning" of Apple's involvement in *Unix*.

'Apple's approach will make *Unix* easier to use and give it broader appeal', he added.



Phillips: *A/UX* will expand the number of *UNIX* users

The Macintosh Toolbox contained in the machine's ROM can be used to create the Macintosh interface in *A/UX* applications. Any applications following Apple's programming

guide lines will run on the Macintosh under *A/UX*.

Apple's UK managing director Keith Phillips predicted *A/UX* and the Macintosh interface would expand the number of users who can take advantage of *Unix*.

'Apple's creation of *Unix* has been driven by requests from our customers in government, higher education and other channels'.

Apple will ship *A/UX* loaded on the 80Mb hard disk of the Macintosh II so eliminating the need to load it from tapes.

A typical bundled version of *A/UX* with a 2Mb Macintosh II and 80Mb hard disk costs \$8,597 in the USA. An upgrade for existing users is \$4,879. Hot-line support for a year is an extra \$3,395. *A/UX* will be available in the UK at selected resellers from April but no UK prices have yet been set.

SAMS signs with Altos

Hot on the heels of Apple's *A/UX* launch, a London AppleCentre has launched itself headlong into the *Unix* market.

SAMS Apple Business Centres, has become an Altos value added reseller (VAR). It has set up a new division called SAMS (UK) Ltd to market and support Altos equipment, including the 386 Series 1000 and 2000 range of supermicros.

Roland launches two new plotters

The Roland Corporation has introduced two Macintosh-compatible moving paper plotters which undercut the price of all existing plotters by 30 per cent.

The A0 and A1 plotters are capable of handling the largest drawing and offer 600cm/sec maximum pen speed, 8-pen carousel arrangement and adjustable pen speed and force. The A0 plotter costs £5,800 and the A1 is £4,300.

Pro-IBM group favours Macintosh architecture

The Macintosh has been given the seal of approval by a group of ex-IBM employees. The endorsement comes in an analysis by the US Gartner Group, an independent research group formed in 1979 and which had previously held a cynical view about Apple and its products.

The report states that the Macintosh's architecture is proving to be an advantage over the IBM PC.

'The move to IBM's next generation will be discontinuous so causing serious migration problems. The Macintosh architecture leads to a much smoother migration to the new generation

of 32-bit personal computer workstations', says the report written by Gartner Group vice-president Douglas Cayne.

'The Macintosh's consistency of applications software lead to quantifiable life cycle cost of supporting a second standard. Apple Computer is in excellent financial condition and now has what it takes to remain a leader in the PC business.

'We believe that adoption of the Macintosh as an alternative standard will pay off handsomely in the future. It is time for corporate America to take a fresh look at the Macintosh', said the Gartner Group report.

User Power kicks off 4th Dimension promotion

Apple is working with distributor User Power Software to develop marketing tactics to help ACIUS's database program *4th Dimension* penetrate the UK market.

Among the possibilities being discussed are a nationwide roadshow, and bundling a demo disk of the French-designed program with every Macintosh II.

'Our own strategies for the immediate future are based on three areas', said Apple Software Product Manager and 4D spokesman Dave Smith.

'We will also be working closely with software houses, systems integrators and DEC-type

organisations to help resellers get Apple in through the front door. Apple believes *4th Dimension* fits in very well with these strategies.'

User Power's managing director Andrew Walters claimed 20 per cent of Macintosh II hardware sales in the US and France were due to the popularity of *4th Dimension*.

'The figure is less for the UK because we have not had it as long in the UK,' he explained.

User Power wants *4th Dimension* to be adapted by dealers and systems houses for customising for specific vertical markets.

Clariss seeks UK distributor for revamped software range

Apple's spin-off software company Claris has produced rejuvenated versions of the initial Macintosh software range *MacWrite*, *MacPaint*, *MacDraw* and *MacProject*. Claris has also developed new form designing programs called *SmartForm Designer* and *SmartForm Manager*. Apple will distribute products in the UK until Claris signs with a UK distributor, said Claris president Bill Campbell. *MacPaint* improvements include multiple windows, tear-off menus and snapshot function for selective



Claris President Bill Campbell

retouching. *MacDraw* has been overhauled to offer libraries of objects, greater speed, and a zooming capability. *MacWrite*

finally gets a built-in spelling checker with a 100,000 word dictionary. *MacProject* now offers colour displays and linking of sub-projects.

Claris was formed in April last year as a subsidiary of Apple Inc, to take over development and marketing of all software products previously developed and published by Apple itself. The new versions are said to offer improvements in speed, flexibility and options take account of the evolution of the Macintosh into a fully-fledged business computer.

Interface utility for MIS programmers

MIS programmers can now graft the Macintosh interface on to their own host systems without having to learn any Macintosh programming techniques thanks to a new development tool called *MacWorkStation*.

The program provides high-level access to the Macintosh toolbox and allows professional programmers to develop Macintosh application without the need to learn and of the special Macintosh programming

techniques laid down by Apple.

MacWorkStation could provide the key to a drastic reduction in user training time and system overheads as it will make it easier for non-specialised computer users to use the programs residing on the host computer.

Apple is hoping the utility will bring the advantage of the Macintosh style to a range of new application areas such as main-frame-based financial analysis and data entry.

FoxBase+Mac equips Macintosh with dBASE III power

Users of Ashton-Tate's *dBASE III* can now run the language on the Macintosh. Fox Software, the Ohio corporation specialising in database management systems, has implemented *dBASE III* software for the Macintosh, with a product called *FoxBase+Mac*, which it claims is up to 50 times faster than all other leading Macintosh databases.

According to Fox Software the product allows millions of lines of existing *dBASE* code from the IBM PC environment to run "virtually unchanged" on the Macintosh.

FoxBase+Mac is said to be compatible with *dBASE III*.

"Simply porting existing *dBASE* applications from the PC to the Macintosh isn't enough," said Fox's director of

marketing Richard Ney.

"*FoxBase+Mac* language extensions allow programmers to make their applications fully "Macintosh style" with multiple windows, dialogue boxes, type fonts, and all the other Macintosh features."

DBASE-type software is used by many thousands of users and developers on the PC, XT, and AT range of PC's and clones.

Upgrade price slashed to £450

Pioneer Macintosh owners can now upgrade their 128k and 512k machines to Macintosh Plus specification for just £450. Apple has reduced the upgrade price in a promotion lasting until the end of August.

The aim is to bring all the Macintosh installed base up to Macintosh Plus standard according to Apple UK's Macintosh product manager Chris Calvert.

Continuing developments make it uneconomical for developers to support the first generation of Macintoshes. Software such as *HyperCard* does not support the older machines.

The £450 upgrade includes a 1Mb logic board and 800k disk drive kit, *HyperCard*, and system Version 5.0.

Marketing chief quits MicroSoft

Microsoft has lost its UK marketing director following the sudden resignation early last month of Mark Plant. Industry sources suggest Plant became unhappy after his bid to succeed outgoing MD David Fraser failed.

Instead MicroSoft opted to appoint David Svenson, marketing chief of its Australian outpost, to the top job.

Meanwhile Marketing Services Manager Fiona Kelly has been appointed Macintosh Product manager as part of efforts to improve end-user support.



Calvert: cheaper upgrade will help early Macintosh users

SuperPaint now more powerful

Silicon Beach Software is updating its graphics program *SuperPaint*, the graphics program that integrates bit-mapped painting and object-oriented drawing capabilities.

According to Silicon Beach *SuperPaint 2.0* will automatically trace images and create detailed Bezier curves. Other features include a Multigon tool to create equilateral polygons, free rotation of objects and text, and colour previewing.

•NEWS•

MacAPPC release uses IBM protocols

Interactive processing between the Macintosh and a host IBM system has arrived with Apple's release of *MacAPPC*, its own version of IBM's LU.6.2 protocol. This supports IBM's Logical Unit 6.2 and Physical Unit 2.1 protocols which are a key part of IBM's own Systems Network Architecture (SNA). *MacAPPC* means Macintosh

applications can be developed to communicate on a peer-to-peer basis with mainframes, minis and personal computers from IBM and other vendors.

MacAPPC supports all the current Macintosh family and shares information either by direct connection or over AppleTalk using a Macintosh II as a shared gateway.

Top design award for Blyth's Omnis

Blyth Software, the only European software house to be quoted on the New York Stock Exchange has notched up another record. Its *Omnis 3 Plus* database program has become the first Macintosh software program to receive a British Design Award from the Design Council.

This is the third year that an award has been given to a software product. Blyth will receive its Award from The Duke of Edinburgh in April.

The Saxmundham company was one of 22 companies to win an award and picked up the prize for the way the software "exploits the facilities of the Macintosh" and "the high standard of its instruction manuals, sales literature and packaging."

"Our marketing activity feeds directly into the design function," said Blyth's European sales and marketing manager Nirro Rad.

"We listen to our users and operate a formal system to record and identify their needs. This is a vital ingredient in developing new and improved products," Rad maintained.



Nirro Rad: marketing feeds into design

Blyth released its first *Omnis* program for the Apple II in 1982. *Omnis 3*, a relational database for the Macintosh appeared in 1985.

The updated multi-user version *Omnis 3 Plus* is claimed by Blyth to now be the leading relational database for the Macintosh.

Blyth recently enjoyed a successful public flotation on the Nasdaq Stock Exchange and has opened a London office to develop the corporate sector of its market.

PC link to AppleShare

Apple has finally launched *AppleShare PC*, its Desktop Communications product which allows IBM PC (or compatible) users to share information stored on an AppleShare file server.

AppleShare PC supports information between the two systems so allowing it to be transparently shared. This way *MS-DOS* documents can be integrated into Macintosh applications

such as Desktop Publishing and business management. The files appear on the Macintosh "desktop" as though they were on a local *MS-DOS* disk.

The AppleShare File Server is located through a pop-up menu similar to the Chooser desk accessory.

It requires at least 384K of RAM, *MS-DOS 3.1* (or later) and a LocalTalk PC card and connector kit.

AppleTalk opened up to non-Apple peripherals

Connectivity experts TOPS has designed a hardware device that links desktop computers and peripherals to AppleTalk networks.

The new product, called *TOPS TeleConnector* allows personal computers on an AppleTalk network to communicate at three times the normal speed. It also handles personal computers-to-Macintosh communications at the standard AppleTalk rate of 236K per second. Meanwhile, TOPS, which was founded in 1984 and is planning to set up a UK subsidiary, is

celebrating the sale of 100,000 network packages in the last 18 months.

The company is claiming it has achieved a four per cent share of all personal computer-based local area networks world-wide, and maintains it is now the sole manufacturer of the only distributed file server local area network that is able to allow Macintoshes, IBM PC's (and compatibles) and UNIX-based systems to transparently share files, disks and printers.

Distribution of TOPS in the UK is handled by GoMark.

FORTRAN option now shipping for Macintosh II

Scientists, mathematicians and engineers are being offered a new *FORTRAN* compiler designed to exploit the full power of the Macintosh II.

The compiler, from Language Systems Corporation in Virginia, is being announced as the first implementation of the language to support the Macintosh II's floating point routines. "It is now possible for scientists and engineers to write

and test a *FORTRAN* program on a Macintosh II, and run it with larger data set on a mini or mainframe," said Language Systems' chairman Richard Norling who has earned status as a Macintosh developer. He co-wrote *Crickle Graph* and *StatWorks*.

Language Systems' *FORTRAN* supports ANSI standard *FORTRAN 77* and *VMS FORTRAN* running on VAX computers.

Blyth gives VAX support to Omnis

Blyth Software has become the first major Apple software house to produce a version of its software that allows a Macintosh to access a DEC Vax minicomputer.

The company's *Omnis 3 Plus* database now supports a new Structured Query Language (SQL) module which is able to access information stored on a VAX or, indeed, other host minicomputers. The product, announced at Dexpo in New York last month, is expected to ship over the next three months with a US retail price of about

\$725.

The SQL link has been developed so that Macintosh users can access *Oracle*, the best-selling database which runs on all VAX systems.

'We have been working with Apple for some time to have a product ready to ship rather than just making an announcement of an intention', said Blyth's UK sales and marketing manager Nirroo Rad.

'We expect to make more product announcements in this area', he added.

US designers signed for Letraset RSG templates

Letraset has come up with a scheme giving end-users a chance to have their documents designed by some of America's leading graphic designers.

Users of the latest version of Letraset's *Ready Set Go* DTP software are being offered a collection of over 40 page templates by leading US designers. The templates cover all aspects of

Desktop Publishing such as newsletters, brochures, business cards, envelopes, and corporate identity artwork.

Designers and desktop publishers can use and customise the templates in any of the categories. Each template comes formatted, indicating positions for print, graphics, rules and half-tones.

Leading CAD/CAM software company climbs aboard Macintosh bandwagon

VersaCad Corporation, one of the leading manufacturers of Computer Aided Design software for engineering workstations, has converted its popular *VersaCad* product for use on the Macintosh.

The two-dimensional CAD system runs on all Macintosh machines and provides full drawing and editing capabilities as well as up to 250 drawing levels, freehand sketching and Bezier curves.

VersaCad pioneered the personal computer CAD market in 1981 and has shipped over 50,000 products world-wide.

The company points out that its *VersaCad* products are used intensively in education to help train around 200,000 students each year in more than 5,000 schools, colleges and universities around the world.

US price of the Macintosh edition is \$1,995. Shipping of the product has already begun.

Macintosh and disk drive prices reduced again

Apple has reducing Macintosh prices by approximately 10 per cent.

The cost of a Macintosh Plus drops from £1,795 to £1,595 compared to the £2,700 the machine cost when it was introduced 15 months ago.

The Macintosh II with internal 40Mb hard disk comes

down from £4,460 to £3,795 while a Macintosh SE with internal 20Mb hard disk is down £300 to £2,595.

Apple has also brought down the cost of its hard disk drives. An external HD20SC is down £200 to £795 while the external HD40SC is pegged at £1,295.

24-bit board from SuperMac said to offer 'photographic quality'

SuperMac Technology is claiming its 24-bit single-slot *Spectrum/24* board can access 16.8 million colours simultaneously on a Macintosh II.

'We expect *Spectrum/24* customers to be people doing image processing, solid modelling and other CAD/CAM applications', said SuperMac's US marketing manager Thomas Rieley.

SuperMac has also added enhancements to its *Spectrum/8* board for the Macintosh II. Monitor flicker during animation has been eliminated, and the card has been made compatible with *Multi-Finder*. The colour paint package *PixelPaint*, which costs about £300, is included with the board.

MacDraft stable introduces interactive family of CAD tools

IDD, the company which produced the first Macintosh drafting package *MacDraft*, is following it up in July this year with *DREAMS*, a family of interactive design tools. It will be compatible with *MacDraft*, which remains the company's entry-level CAD product.

IDD says *DREAMS* makes advanced CAD features available to all users, from engineers creating technical drawings, to desktop publishers requiring advanced illustrations.

The *DREAM* modules include drafting, accessory, and dimension palettes, libraries of symbols for the engineering and design markets, plotter driver and file conversion utilities. *DREAMS* features include Macintosh II colour support,



DREAMS modular package

zoom, rotation, automatic dimensioning and automatic calculation of scale.

Drawings created in *DREAMS* can be output to *PostScript* compatible printers.

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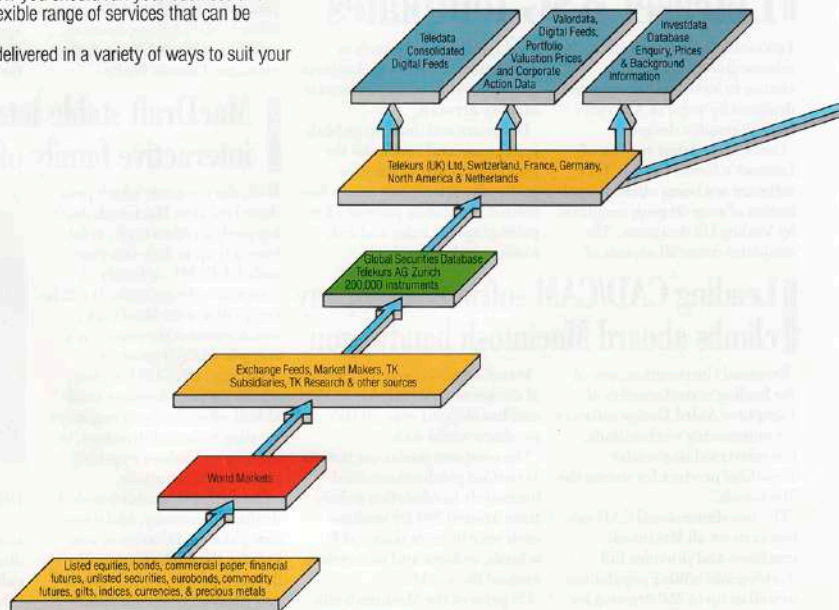
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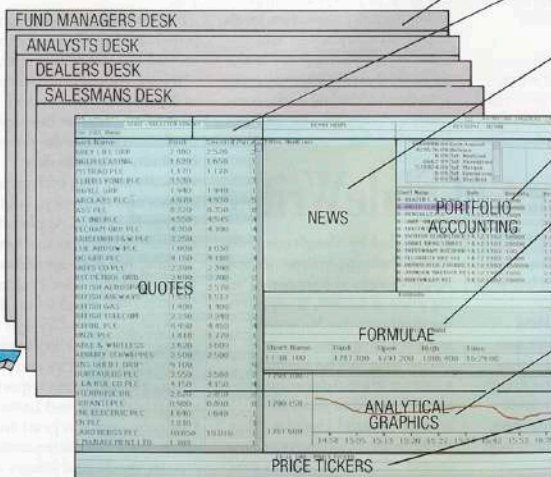


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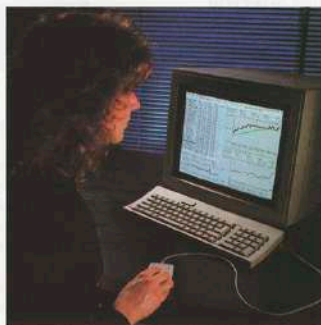
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the climate in which to invest in new technology?
the going gets tough - the tough go shopping

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Optimism for computer firms

Despite last October's stock market crash most corporate computer customers are not expected to reduce their investment in mainframe and microcomputer requirements according to a leading firm of Wall Street analysts Paine Webber.

The company's post-crash survey is bullish on computer stocks, especially those of Apple and DEC. 'While we certainly expect segments such as personal computers and workstations to see increased price competition in 1988, Wall

Street's fears that profit margins will erode across the board are largely unfounded,' says Paine Webber.

It continues: 'Providing vendors such as DEC, Apple and Tandem continue to build on the superior functionality of their products, they will be able to value-price them in the market.'

Paine-Webber's survey revealed 30 per cent of corporate users questioned were cutting back. But this was largely offset by the large number plan-

ning to increase their capital spending later this year. Micros and mainframes emerged as one of the least likely categories of equipment to be cut.

The analysts believe it would take a major recession to derail the computer industry's recovery after its two-year slump. 'High capacity utilisation levels, improved connectivity and usability, and a recovery in the depressed manufacturing sector are all contributing to the computer industry's recovery,' says Paine Webber.

Graphics-based spreadsheet to ship soon

Kansas company Innovative Software is promising the first Macintosh package to generate and lay-out numbers, charts, words and images on a single screen for output to a printed page.

The product, called *Wingz*, is scheduled for release during the second quarter of this year.

'*Wingz* supports the full range of Macintosh features and capabilities. It gives business and professional users the power and flexibility to accomplish virtually any task with greater impact and efficiency,' said George Everhart, Apple US director of business marketing.

In addition to its spreadsheet, *Wingz* will also offer Desktop Presentation capabilities. These incorporate up to 256 style sheets giving users the ability to pre-define formats, fonts and colour. *Wingz* will be able to import and export text, Syllk and Lotus files. One command can print an entire sheet containing numbers, charts, words, and images on a single page.

Innovative Software plans to include its *Hypersheet* language which allows *Wingz* to be tailored for custom applications or vertical markets.

Its easy interface helps users inexperienced in programming to tailor *Wingz* for their own specific use, says the company.

SuperMac hard disk supplies 150Mb storage

An internal disk drive offering 150Mb of storage is now available from SuperMac Technology for the Macintosh II.

The company claims the *DataFrame XP 150i* is the highest capacity drive available for the Macintosh II.

The unit's high capacity makes it suitable for memory-hungry applications such as digitized sound, bit-mapped graphics and scanned images. The *XP150i* uses a custom controller increasing data transfer speed by around 50 per cent.

Software Power's go-faster tools

Two go-faster utilities aimed at maximising hard disk speed and efficiency and overall machine speed have been developed by the Software Power Company in Fremont, California.

Power Disk is a RAM cache booster that improves memory management to shortcut performance bottlenecks. *Power Up* rearranges files on hard disk for minimum read and access times.

UK debut of SlideWriter

Using outside slide-making facilities can prove expensive, with slides costing anywhere between £25 and £150.

Now the launch of Matrix Instruments' *SlideWriter* into the UK gives Macintosh users the chance to colour and image Macintosh files directly on to high-resolution 4,000 line film for in-house slide production of up to 45 slides a day.

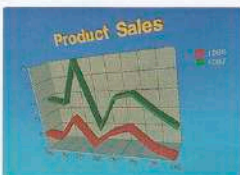
The *SlideWriter* is being

distributed by Slough company Visual Business Systems through Apple dealers at a suggested selling price of £8,500. It supports the most popular Macintosh graphics programs.

According to VBS business manager Marc Adams, companies who need to generate around 15 slides a day could be expected to recoup the cost of *SlideWriter* within a six month pay-back period.



SlideWriter: able to produce up to 45 high resolution slides a day



HyperCard utility aids stack browsing

The Symmetry Corporation has launched *HyperDA* a memory-resident desk accessory, that opens and reads stacks while another application is in use.

One drawback of *HyperCard* was that it could only be used concurrently if it was run under *MultiFinder* with at least 2Mb of

RAM. So browsing through stacks involved quitting an application and launching *HyperCard*.

HyperDA means *HyperCard* stacks can now be read on any Macintosh with a minimum 512k of memory. Previously, Macintoshes with less than 1Mb could not access *HyperCard*.

Heathrow base for Apple UK

Apple UK is moving to a new headquarters based at the Stockley Park development near Heathrow.

The 50,000 sq. ft. building is scheduled to open in February, 1989. Apple has an option to develop 60,000 sq. ft. of adjacent land.

APPLE-DEC: THE HONEYMOON BEGINS

Ian White



All smiles for DEC's Kenneth Olsen (left) and Apple's John Sculley

Apple and DEC have made their alliance official. The hard work now begins to marry the two technologies together. *Ian White* examines the initial implications of the announcement.

The sight of Digital Equipment Corporation president Kenneth Olsen smiling broadly behind a podium bedecked with the Apple logo concluded a year of speculation that two of the computer industry's best-known innovators were courting.

The Apple-DEC alliance was formally announced by Olsen and Apple's chairman and chief executive officer, John Sculley, at the MacWorld show in San Francisco's Moscone convention centre in January. It is an agreement to integrate the Macintosh with DEC's VAX minicomputers using both the AppleTalk network and the DECnet system link.

It is also a pledge to combine thinking so that future products will be based on the industry standard Open Systems Interconnection (OSI).

Digital's long-term strategy has been to provide networked desktop solutions which it calls "distributed processing" that allow

users to share resources across a standardised network.

The joint development efforts with Apple will extend that integration beyond the 36 per cent of VAX sites that currently use Macintosh. 'The combination of Digital's and Apple's technologies represents one of the strongest alliances yet in the computer industry,' said Sculley. 'It brings together the best technologies from two of the industry's best known innovators.'

Olsen said: 'DEC's strategy is to provide networked server and desktop solutions. It also integrates other quality desktop systems... the development efforts with Apple will extend that integration to our customers who use and love the Macintosh, and will advance the movement toward the OSI standards.'

The development effort will provide a consistent set of application interfaces to guide developers in writing distributed applications. The idea is that Macintosh applications will be able to tap into VAX systems and networks and access files stored on the VAX. Macintosh and VAX users will be able to access both DEC and Apple PostScript printers on the network. The Apple machines will

emulate DEC terminals in order to access other computers on the DECnet/OSI networks and share electronic mail facilities.

But what of DEC and Apple's third parties? Do they now have a future? So far the field has been left to the ingenuity of third-party companies such as AlisaSystems and Kinetics. Timothy McCreery, president of Kinetics, which specialises in connecting Macintosh to Ethernet networks, is confident that the third parties will beat the two conglomerates to shipping working products.

'Neither DEC nor Apple are likely to create and market innovative products as rapidly as the smaller third-party companies,' claims McCreery.

John Yardley, whose New Malden-based JPY Associates distributes AlisaSystems' products in the UK, estimates it will take about two years for DEC and Apple to jointly develop new software, so giving third-parties time to consolidate their strategy.

Yardley has no doubt about the implications of the deal. 'My initial reaction was of extreme joy. This will encourage third-party applications, and make all the people who were previously

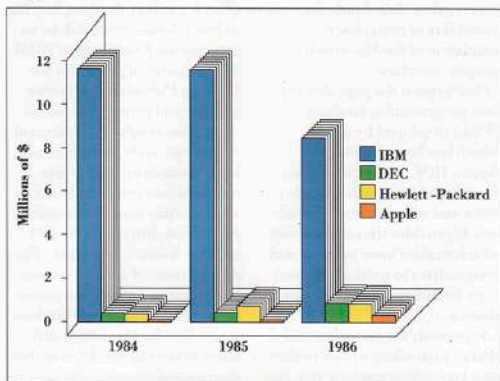
backstage commit themselves to producing more Macintosh/VAX software products. JPY is in a very good position in that AlisaTalk already uses DEC standards.'

'The alliance is a formal seal of approval by both companies for Macintosh/VAX products, and so generates a much bigger market for all.'

The Apple-DEC alliance will have caused considerable consternation inside IBM. The computer giant's shares have been performing poorly for the last three years, and yet another drop in share price greeted the recent announcement of restructuring. (IBM has decentralised, creating five new business units.)

Big Blue is now faced with the possibility of around 1.5 million corporate Macintosh users being swept into the DEC camp and many thousands of VAX users adopting the Macintosh standard for personal computers rather than MS-DOS.

For DEC, the prize of the alliance is a firm base in the personal computer market so far denied it by the failure of its own products. For Apple the reward is an additional gateway to the international corporate market ■



Annual pre-tax profits: IBM's vast lead over the others is reducing

Source: Datastream

WHY APPLE MAY REJECT

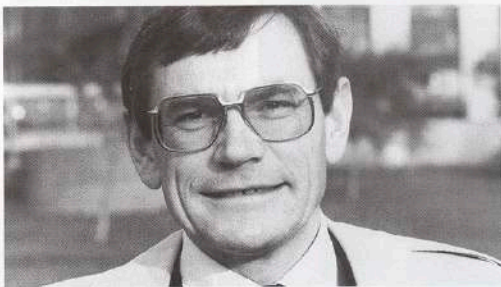
Six weeks ago Adobe Systems showed what the company claimed was a working version of its new programming language, *Display PostScript*. The new language is a major development of *PostScript* and allows users to have full WYSIWYG ("what you see is what you get".) For graphics and print applications this is a vital improvement.

Display PostScript is reported to have several other benefits over the existing *PostScript*, and its introduction has further heightened the tension developing between Adobe and some other companies in the computer industry. There has been resentment in recent months at Adobe's high asking price for *PostScript* licences (now thought to start at \$2.5 million plus large royalties) and rumours of the arrival of *PostScript* "clone" languages have been persistent.

The arrival of *Display PostScript* is likely to require existing *PostScript* licensees to pay high sums to secure new licences. There is even a threat that the powerful screen representation capabilities of the language could offer manufacturers other than Apple the possibility of even closer emulation of the Macintosh graphic interface.

PostScript is the page description programming language (PDL) developed by Adobe which has been adopted by Apple, IBM, Linotype, Aldus, Quark and many other hardware and software manufacturers. It provides the soft interface which enables laser printers and imagesetters to produce printed copy from computer-generated designs.

At present, if a manufacturer wishes to produce a laser printer or a typesetting machine that can produce typesetting and



Adobe's European sales manager Jerry Beyma: problem filling staff vacancies

Despite the fact that it was Apple's interest and support which helped Adobe Systems establish *PostScript* as the standard Page Description Language, all is not sweet between the two companies. Ray Hammond reports.

graphics created within program such as *PageMaker*, or *Quark Express*, the company has to buy a licence from Adobe to incorporate *PostScript* in ROM. The majority of programs for Desktop Publishing and other graphic and print applications deliver the results in the form of *PostScript* code, and there are huge rewards on offer if any company can create software which is fully compatible with *PostScript*, but which doesn't infringe Adobe's copyright. The development of such a compatible language would allow manufacturers who adopted the clone to produce laser printers and other devices at much lower cost than manufacturers who have to buy *PostScript* licences and pay

large royalties on every unit produced.

The situation developing in the *PostScript* environment has a superficial similarity to that which occurred after the launch of the IBM PC. Clone-makers discovered ways to build PCs which were compatible with the IBM machine and which could run the software available, but which didn't infringe IBM's patents. Now many companies are trying to develop *PostScript* "clones", but the task seems to be proving much harder than it was for the hardware manufacturers who wanted to share in the IBM PC standard.

There are many programmers who believe that full compatibility with *PostScript* will be

impossible to achieve, if only because, with each up-grade, Adobe keeps refining and altering its program. While licensees are provided with the up-grades, clone software writers would have the lengthy job of trying to find copyright-free emulations of every small amendment, fast enough to keep devices in the market compatible with up-grades in the applications packages.

'We've looked very thoroughly at some so-called clones and we're confident that none of them are compatible,' Liz Bond, Adobe's International Director of Marketing told *Apple Business*. 'I don't think it will be possible for anybody to produce anything which is usable in the marketplace as a replacement for *PostScript*. Within the last couple of weeks, however, news has leaked that Epson is about to launch a range of laser printers, reportedly using a *PostScript* clone language. Earlier claims of *PostScript* compatibility have mostly come from small companies: Epson is the first major company to produce such a product and has sufficient force in the market to be taken very seriously.

'I am assured that the new printers are *PostScript* compatible without using Adobe's *PostScript* language,' said Epson's Marketing Director Shaun Goffe. 'The printers should be available in the UK this Spring and they should be much less expensive than other laser printers which include *PostScript*.'

Whether Adobe's monopoly position in *PostScript* will be maintained is now to be tested, but even before release, the market is divided over the potential new standard, *Display PostScript*.

At the time of announcement

ANALYSIS!

ADOBE'S DISPLAY POSTSCRIPT

Adobe said that so far it has licensed Digital Equipment Corporation (DEC) and ex-Apple founder Steve Jobs' new company, NeXT, to produce devices containing *Display PostScript*. But private sources within Apple say that as an initial reaction the company will not be supporting *Display PostScript* in Apple products.

Bond dismissed such suggestions as premature, but sources inside Apple's Cupertino headquarters are expressing resentment at what is seen as a high-handed attitude by Adobe. There is a general feeling that Adobe is asking too much in both licence fees and royalties and has forgotten the special

relationship that has existed between the two companies. Apple's reaction seems to be that it would rather develop its own alternative PDL than become Adobe's slave in the graphics interpreter field. The recent release of a new Apple laser printer family (see Page 66), which offers *QuickDraw* as an alternative PDL in the entry-level model, has been seen as the first shot in what might become a move away from *PostScript*. As Apple is still a 19 per cent shareholder in Adobe, this is a serious falling out inside the family.

Despite the problems, it seems that Adobe will continue to dominate microcomputing in all areas which are concerned with

getting computer-processed type and images into printed media. The company's software development team made the DTP revolution possible, and nobody, certainly not Apple, is going to forget the debt that is due.

The same inside sources at Apple privately admit that despite the company's current stand, Apple may eventually be forced to capitulate and agree to terms for *Display PostScript*. There is some substantial bargaining to be done, however, before Adobe will be able to make that announcement.

In the meantime, inside its new Mountain View headquarters in California, the Adobe team is working in many new areas.

Video PostScript is now well under way and new adaptations and refinements to improve colour separation facilities within *PostScript* are being developed.

In Europe, Adobe has established new headquarters in the World Trade Centre just outside Amsterdam under the direction of Jerry Beyma. Beyma's biggest problem is filling the large number of vacancies he has for staff familiar with *PostScript*, and while the industry watches to see if a giant such as Epson may find a way to break Adobe's monopoly Adobe itself is kept constantly busy just trying to keep up with the demands of the market it has single-handedly created. ■

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ONE SIZE FITS ALL WITH NEW PRINTER FAMILY

The modular design of Apple's new LaserWriter II family means a fully upgradable range protecting hardware investment. *Ian White* previews the trio of printers that now covers single-users through to networked Desktop Publishing installations.

When Apple launched its first LaserWriter in 1985, the company had little idea it would be such a key product in breaking down the doors of the corporate market.

At £7,500 its high price precluded sales to the existing base of single Macintosh users; but it gave Apple its vital lead into the then infant Desktop Publishing market.

Although the LaserWriter wasn't the only personal computer laser printer on the market, it was the only machine of its type to include Adobe's *PostScript* page description language. This was a major factor in determining the printer's price.

PostScript tells the printer where to place text and graphics on a page and allows a wide variety of fonts to appear in any size, style and orientation.

The LaserWriter polarised Apple's printer range between the low-end dot matrix ImageWriter and the LaserWriter itself. It was an "all or

nothing" choice between an expensive *PostScript* device or the single-user ImageWriter which lacked the letter-quality output demanded by business users. Apple tried to close the gap last year with its improved ImageWriter IQ, but it was clear that the LaserWriter family needed to be extended.

In January, Apple finally unveiled its answer to the problem of catering for all sectors of the market by launching its LaserWriter II family.

The three new arrivals are the IISC, IINT, and IINTX: the only difference between them is the controller board. Changing from one specification to the other is achieved in seconds by pulling out one board and sliding in another.

Apart from providing one of the smoothest upgrade paths possible, the modular concept means the printer itself never has to be discarded as the printer housing remains common to all three configurations.

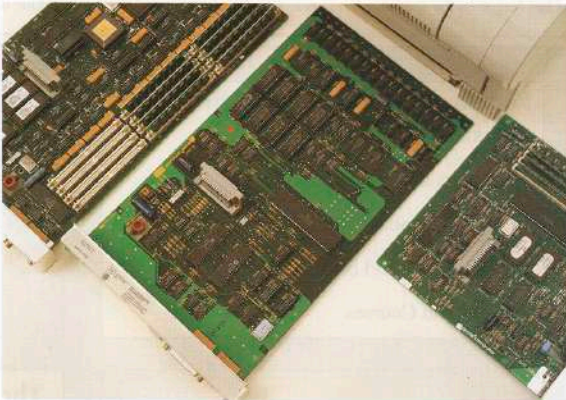
Print resolution of 300 dots per inch

(DPI) is unchanged, but the printers work twice as fast; up to a maximum of eight pages per minute.

The LaserWriter II unit is based on Canon's new LBP-SX engine. This is claimed to have a duty cycle of 300,000 pages (three times that of the original LaserWriter engine) and to give denser "blacks" compared to the previous engine.

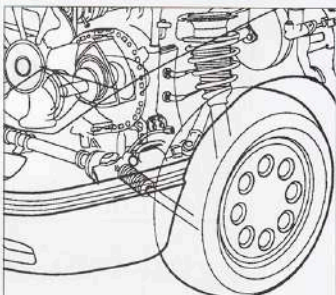
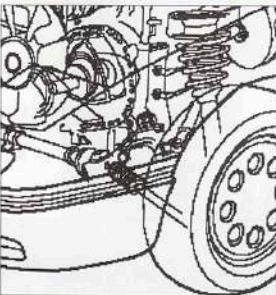
The most obvious difference between the old and new printers is the size and weight. In fact the Laserwriter II is 45lb lighter than its corpulent older brother which has now been rendered obsolete.

Paper-handling capabilities have been doubled, with a 200-page A4 tray, which should cut down on the daily refill treks. Although new options include a 15-sheet envelope tray and forward collation of up to 100 pages, the major bugbear of a single tray remains, making it impossible to select between different varieties of paper; for example, headed



John O'Grady

Right: Controller boards that turn the LaserWriter II into either an NTX, NT, or SC. Bottom: resolution of QuickDraw is inferior to *PostScript*-generated graphics



Apple Business

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B What mainframe facilities exist in your organisation (please specify type and quantity)?

Quantity?

☐ 1 IBM PC clones

Quantity?

☐ 2 Apple Macintosh

Quantity?

☐ 3 Other (please specify)

Quantity?

E Does your organisation plan to buy any of the following makes of microcomputer in the next year?

☐ 1 IBM PC's

☐ 2 IBM PC clones

☐ 3 IBM PS/2

☐ 4 Apple Macintosh

☐ 5 Other (please specify)

F Please tick the box which describes your involvement with microcomputers within your organisation.

☐ 1 Approve purchase order

☐ 2 Recommend purchasing decision

☐ 3 Take purchasing decision

☐ 4 Consult on purchasing decision

☐ 5 Evaluate microcomputer systems

☐ 6 Lay down specifications for system requirements

☐ 7 Train others to use

☐ 8 Use a microcomputer personally

☐ 9 Other involvement (specify)

G If you are responsible for systems please indicate the number of micros for which you are responsible.

☐ 1 1-3

☐ 2 4-9

☐ 3 10-19

☐ 4 20-49

☐ 5 50 +

H Approximately how many people work in.....

☐ 1 Your company:

☐ 2 Your location:

I Please indicate in which areas your company uses microcomputers (tick as many boxes as are relevant)

☐ 1 Accounting

☐ 2 Database management

☐ 3 Mainframe access or communications

☐ 4 Numerical and financial modelling (spreadsheets)

☐ 5 Word Processing

☐ 6 Communications via modem

☐ 7 Internal network (micro / micro)

☐ 8 Statistics compilation

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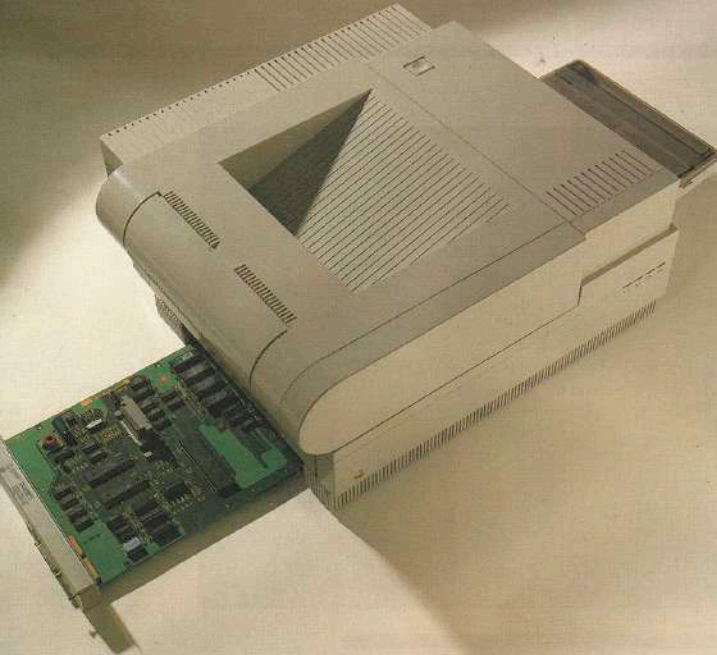
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Fold Two



paper and continuation sheets.

The LaserWriter IISC, with its £1,995 price tag, is the laser printer entry point for many individuals. Users have long believed that Apple lacked an inexpensive single-user laser printer that offered laser quality without the expense of *PostScript*.

The new IISC uses the *QuickDraw* imaging routines resident in the ROM of the Macintosh to produce fonts and graphics. The printer itself is a "passive" device without the ability to perform secondary processing.

Apple's view is that *QuickDraw* should not be considered a competitor to *PostScript* as each is suitable for different needs. While *PostScript* can scale any font to any size without loss of quality, *QuickDraw* relies on fixed fonts that will distort if extended beyond the sizes resident in the system. Nevertheless, one of these stored characters will look as good as the *PostScript* equivalent.

Unlike the LaserWriter, or its bigger brothers in the LaserWriter II family, the IISC has no resident fonts. Instead it is supplied with four bit-mapped fonts (Times, Helvetica, Courier and Symbol) held in the system file of the host Macintosh.

The LaserWriter IINT (New Technology) is Apple's general

business printer, and replaces the LaserWriter Plus, although at £3,295 it is £1,000 lower than the old machine. It comes equipped with the latest version of *PostScript* and 11 font families.

The IINT's 2Mb of RAM is designed to boost speed and provide storage for downloadable fonts. The original LaserWriter required font information from each Macintosh on the network: fonts had to be stored locally on each machine wasting valuable storage space and slowing down the network as each machine downloaded the fonts through *AppleTalk*.

The inclusion of Adobe's go-faster version of *PostScript* also speeds up the printing of graphics. Up to 31 networked users can access the printer; an ADB connector links the printer to third-party devices such as sheetfeeders; and the serial port links it to MS-DOS and OS/2 systems.

With the LaserWriter IINTX (New Technology Expandable), Apple has brought out its heavy guns. This is the printer aimed squarely at the power users in the design and graphics professions. It dwarfs the capabilities of the LaserWriter Plus despite the fact that it is being sold at virtually the same price of £4,495.

Expansion options are the key to the

Modular design means a printer can be upgraded in seconds by sliding the appropriate controller board into a common print engine and printing unit

IINTX's power. Its standard 2Mb of RAM can be boosted to up to 12Mb giving plenty of beef for complex imaging and "font caching", a method of storing bitmap images such as company logos for future use.

Extra RAM reduces the time required for page processing and improves print speed by enabling the machine to print one page while it is imaging the next.

The inclusion of a custom slot takes expansion cards for additional ROM-resident fonts. An external SCSI port can take up to seven SCSI hard disks allowing an almost infinite variety of fonts and sizes to be stored.

The IINTX is claimed to be the first desktop laser printer equipped with the Motorola 68020 chip similar to the processor used in the Macintosh II and which gives the printer four times the processing speed of the old LaserWriter.

With the LaserWriter II family, Apple appears to now have the ammunition that will fortify its lead in the DTP market. The modular design means that customers have the luxury of increasing the power of their investment without writing it off.

Apple's decision to stick with 300 dots per inch for the new printers is, presumably, based on its assumption that this resolution is adequate for the majority of applications and that users requiring output of up to 2,540 lines per inch will use professional *PostScript* bureaux.

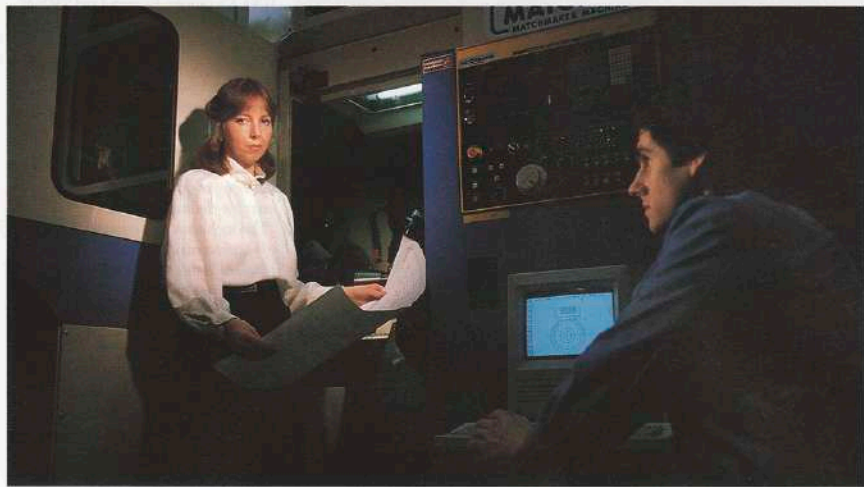
Priced against their specification, the new printers leave the competition dead in the water. Apart from print resolution, the LaserWriter IINTX matches, on general specification, most rivals.

For example, although the AM Varityper goes to 600 DPI, its £15,750 cost precludes it from most shopping lists. And while Agfa's PS400 offers 400 DPI, its £19,500 cost takes it out of the mainstream DTP market. ■

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ENGINEERING FROM A DESKTOP

The Macintosh now has the power to handle advanced Computer Aided Design projects. *Carey Green* saw how a British company plans to make Macintosh-based engineering solutions the standard tool for European engineering design.

A year ago few engineers had heard of the Macintosh, let alone used one for Computer Aided Design. That is all set to change however, as Apple attempts to do for the engineering market what it has already done for the printing and publishing industry.

The launch of the Macintosh II in March last year gave Apple a computer with the power to dent IBM's long-standing domination of the engineering industry. Within months of its launch, workstation manufacturers like Sun and Apollo had drastically

cut their prices in an effort to halt the move to Macintosh.

Now a British engineering company, The Stanhope Group, is set to pioneer the concept of Desktop Engineering and plans to make Macintosh-based solutions the dominant force in European engineering.

The Stanhope Group was set up in 1950 to sell French and Italian machine tools in the UK. Today its clients include leading British corporations such as Rolls Royce, British Aerospace and GEC.

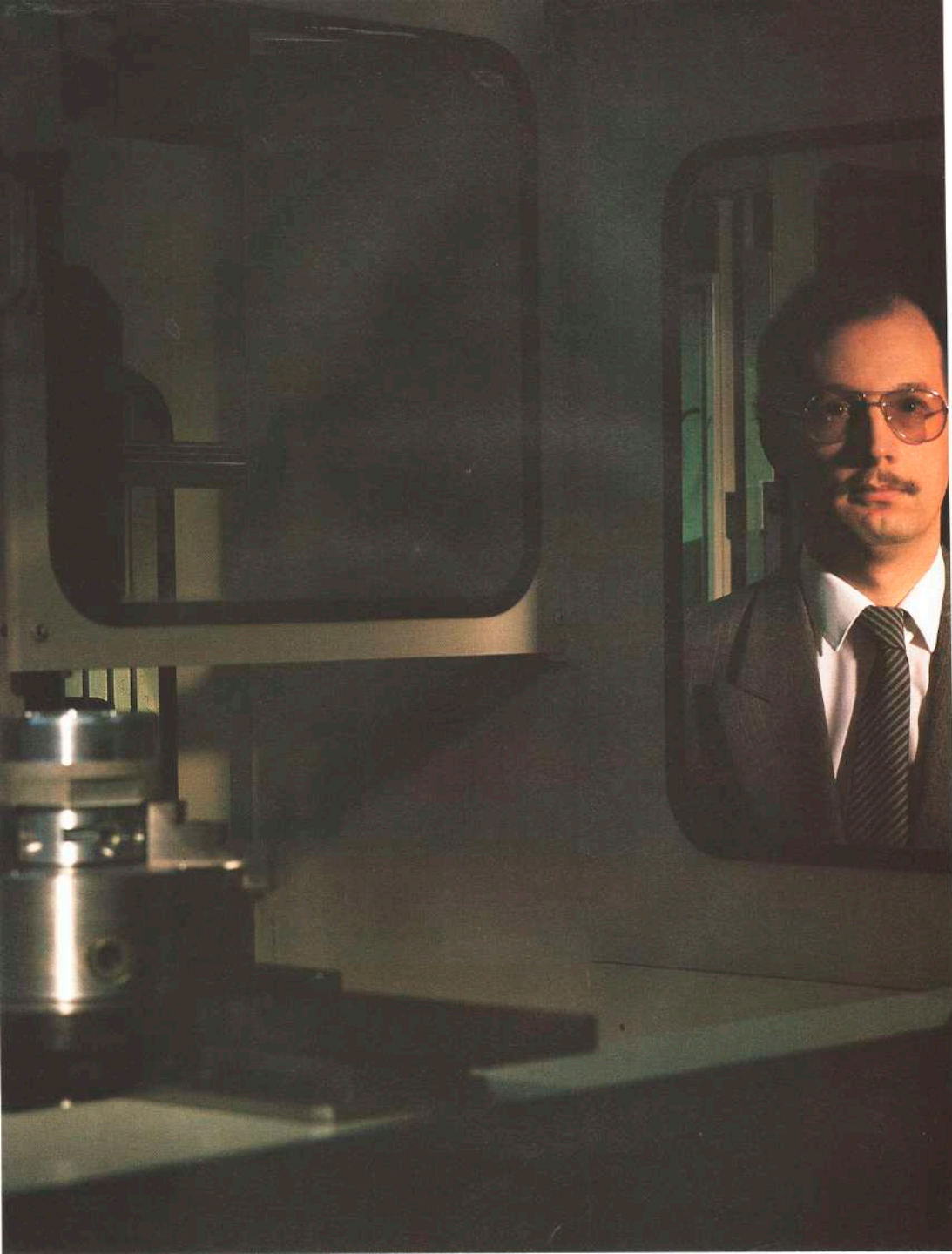
The company was so impressed with

the Macintosh computers it brought in to do its own work, that in 1986 it set up a division called Desktop Engineering Systems (DES) to sell Macintosh-based engineering solutions to its customer base.

'The engineering industry is heavily IBM-dominated because of the range of products available. Most engineers think IBM because it has been the only option for so long. Now, with Apple's help, I believe we can start changing things,' said Stanhope Group director, Ailsa Bosworth.

'Almost everyone on the computer

Bosworth (above): 'Most engineers think IBM because it has been the only option.' McMillan: 'PC's were passed down the management scale'



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side of the company uses Macintosh computers, from dyed-in-the wool 65-year-old engineers to all the administration staff."

In 1985 the Stanhope Group changed from using seven IBM PCs to a network of 15 Macintoshes linked by AppleShare. It also has two Macintosh IIs, and several LaserWriter and Image Writer printers.

The Group uses a wide variety of software to deal with all the usual business support needs, from accounts, word processing, spreadsheets and databases. It handles in-house DTP using *MacDraft*, *MacDraw* and a number of different DTP-specific programs. Managing

director of DES, Stuart McMillan explained: "Before we launched DES, the group as a whole was already committed to Macintosh."

"When we first bought the IBM PCs they were for senior management personnel. Over a period of time, as the Macintoshes started arriving, the PCs were passed down the management scale. Today, the few machines left are used for secretarial purposes."

"Some of our engineers, who were not previously interested in using an IBM PC, now use the Macintosh. This persuaded us that the Macintosh had a chance in the IBM-dominated engineering community."

Bosworth says: "The Stanhope Group is the epitome of what Apple believes should happen when a Macintosh arrives in a company. Soon everyone wants one."

The Stanhope Group had made its debut into the computer industry in 1984, when, in partnership with a US company, it formed Computer Options Ltd, a dealership based in Reading.

Because of the changing nature of the machine tool industry over a number of years, the company had been looking for new business opportunities.

"We began exploring new markets and decided on the microcomputer industry. It was apparent in the early 1980's that it would become a massive growth market. Our US partner was doing contract work on IBM main-

frames in the US, and was also keen to break into the UK microcomputer market."

Computer Options sells MS-DOS market leaders such as IBM, Compaq, Toshiba and Olivetti. Today it employs over 40 people, has a turnover of £3 million, and is one of the largest computer dealers in the Thames Valley.

McMillan joined Computer Options in 1986 as General Manager, from Fletcher Dennys Systems. He had been working with Apple computers since 1978.

"Although Apple accounts for only 15-20 per cent of all Computer

Selling the Macintosh is very different from selling IBM. A client is either an IBM or a Macintosh person'

Options hardware sales, all its salesmen prefer to use Macintosh to prepare their proposals," he said.

Computer Options began looking for openings in the CAD area because of the background of The Stanhope Group. In early 1986 it became exclusive UK distributor for a French-written MS-DOS CAD program called *Conception*, which is used in mechanical, civil, electrical and architectural industries for applications as diverse as aircraft design and kitchen layout.

"It was impossible to run a CAD system on a microcomputer before IBM launched its AT model because of the power and memory size needed to run such a complex program. At this time the Macintosh 128k was the only Macintosh machine on the market, so we could not even contemplate selling Macintosh CAD systems," said McMillan.

To sell *Conception* another division, Stanhope Systems, was launched. "We believe that selling Macintosh is very different to selling IBM. The principles are the same but the way you go about it is different."

"A client is either an IBM or a Macintosh person so we quickly came to the conclusion that we had to set up

totally separate divisions to handle each brand."

DES now distributes seven Desktop Engineering programs for the Macintosh, and is currently looking for more. Its best-selling product is a CAD tool called *MGM Station* and a more sophisticated version called *MGM Station CAD/CAM* which offers design and manufacturing facilities.

Other products include *ArchCAD*, a dedicated architectural design system; *Dimensions*, a colour 3D CAD system; and *McCAD Schematics* for creating and revising electronic circuit designs.

In the US over 500 *MGM Station CAD/CAM* systems are installed in

such leading corporations as 3M, Ford, Hughes Aircraft and Boeing, which use it to create programs to operate machine tools.

"*MGM Station CAD/CAM* is the only low-cost

program on the market which offers both CAD and CAM facilities on the same programs. Others offer only CAD, and a translator is needed to link the CAD work into a separate CAM program," said Bosworth.

The programs are both written by an Israeli company called LE Engineering Group which had been selling into the US through a Californian distributor for 18 months before DES came across it.

"We found *MGM Station CAD* and *CAD/CAM* at a Japanese machine tool exhibition at the end of 1986."

"The company had been looking for a European distributor for over a year without success. DES is probably one of only two or three European companies with the right level of Macintosh ability combined with machine tool knowledge."

Bosworth believes The Stanhope Group's experience and expertise in the engineering industry will ensure DES's success.

"Our contacts give us an immeasurable advantage in the industry. Our reputation in the engineering world means we are immediately accepted with a level of credibility that would not otherwise be the case."

The company's claimed reputation does not always guarantee a positive response. 'The initial reaction from a prospective client is often "surely you can't be serious?"'

'Once they have seen the product they usually say it is just what they have been waiting for,' she said.

DES will sell through a small number of specialist dealers and Value Added Resellers (VARs) in the UK, and through country-wide distributors in Europe.

McMillan said the company will train dealers to sell individual products through a series of training sessions. Out of 150 plus UK Apple dealers, DES expects no more than 15-20 are likely to sell Desktop Engineering products.

'Desktop Engineering is a specialised market and we would not allow a dealer to sell our products until we were sure they were sufficiently trained' he said.

McMillan subscribes to the Apple philosophy that Apple products allow

users to get on with their jobs without having to become computer operators.

'Apple is the only company that has introduced a computer that does not attempt to change the working pattern of the user,' he said.

DES is now working closely with Apple in the UK to raise the visibility of the Macintosh in the engineering industry.

The Macintosh II will significantly increase Apple's share of the Desktop Engineering market, he believes. 'The screen size and mono-only capability of the earlier machines had long put the Macintosh at a disadvantage in CAD/CAM applications.'

'In order to dent the IBM-dominated engineering industry Apple had to have a product which not only physically and technically matched all the opposition but offered the bonus of the Macintosh ease-of-use facilities.'

'With the Macintosh II, Apple has launched a direct competitor not only to IBM, Digital Equipment

Corporation and Hewlett Packard, but also to the workstation manufacturers like Sun and Apollo. Since the introduction of the Macintosh II, both Sun and Apollo have reduced their workstation entry prices.'

Bosworth believes that Desktop Engineering will be strategically important to The Stanhope Group. 'Our belief in the products and their potential is absolutely fundamental. We think that Desktop Engineering will potentially become the most significant contribution to the group's business.'

Certainly the outlook for Desktop Engineering on the Macintosh has never looked brighter. More specialist software developers, such as VersaCad than ever before have now realised that there is now a viable alternative to the traditional route of workstations linked to expensive mini-computers and mainframes.

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BOOSTING THE MAINFRAME FACTOR

Apple's new *MacAPPC* software will allow Macintosh users to interact with mainframe computers in a way that preserves the friendly interface. *Peter Jackson* reports on the latest development in Desktop Communications.

Apple's introduction in January of its *MacAPPC* software (Advanced Program to Program Communication) implementation has the potential to end all of the data flow problems which currently beset Macintosh-to-IBM mainframe connectivity.

The software, is based on IBM's Logical Unit 6.2 and Physical Unit 2.1 protocols which are part of its Systems Network Architecture (SNA). But because Big Blue doesn't plan to offer support for its version of the package until the extended version of the OS/2 is released, Apple programmers have a head start over the mainframe supplier.

If it succeeds, *MacAPPC* will enable Macintosh users to use applications which appear to run on their Macintoshes, but which are actually accessing data on a host mainframe.

The successful use of a Macintosh in an IBM-dominated mainframe world requires more than merely loading up a terminal emulation package and using the Apple machine as a dumb keyboard and screen. The Macintosh

interface, with its ease-of-use features which have caused corporate managers to bring it in through the back door, is the machine's biggest selling point. Any sensible integration into the IBM environment must, therefore, involve the full use of those features.

But even when that interface is maintained, (with the use of MS-DOS co-processor cards for the SE and Macintosh II) the adaptation becomes an irrelevance because IBM users have had trouble in using their PCs to supplement mainframe processing capacity. Instead they have found themselves using yet more central resources to support larger numbers of dumb terminals.

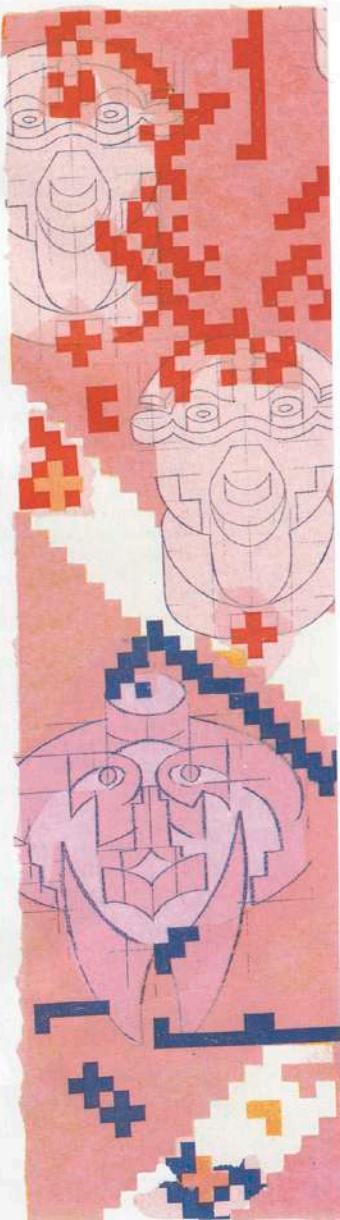
Turning the Macintosh into a PC clone simply adds another layer of complexity to the micro-to-mainframe interface, and another layer of performance degradation, without improving on the limited ability of IBM PCs to access IBM mainframes and minicomputers.

Today, however, new developments in communications and networking standards are giving the Macintosh a chance to compete on advantageous terms with PCs and their clones. From the DP manager's standpoint an important aspect of this new development is that standards are coming down from the mainframe infrastructure into the microcomputer world rather than appearing out of the blue.

Behind these developments is the need to make information flow between microcomputer and mainframe applications two-way rather than one-way. The aim is to use personal computers to co-operate with (and supplement) mainframe resources.

At present, users with a desktop machine can pull data out of a mainframe database file and copy it into a local application program for processing. However, the micro has to be used as a dumb terminal to access the mainframe. As such, the user has to suffer the mainframe user interface instead of the friendly Macintosh system. This limits the function to those users literate in mainframe software (i.e. the professionals) and effectively bars it from those who are only familiar with mouse-based techniques.

To add to the problem, mainframe





data can usually only be captured in entire files or entire screenloads. PC users cannot select sections of files they want to retrieve and use.

Another difficulty is that mainframe data is often stored in formats incompatible with microcomputer applications and is almost certainly incompatible with the Macintosh interface. So extra format conversion software or extensive in-house programming effort is required to make use of it.

Now all these difficulties could soon be swept aside with Advanced Program to Program Communication (APPC) protocol. This was developed by IBM as an extension to its SNA standard. The principle of APPC is that applications running on different types of computer should be able to access any part of each other's data and share the data processing task between them.

The connection between the new protocol and the existing SNA is just another logical network. In any SNA network each computer or workstation is called a "node." Each node communicates with other nodes, by way of logical unit (LU) software which also provides the interface between the node and the user.

But the LU software is not enough on its own. Physical unit (PU) software is also needed to service the LU and manage the various network resources and functions.

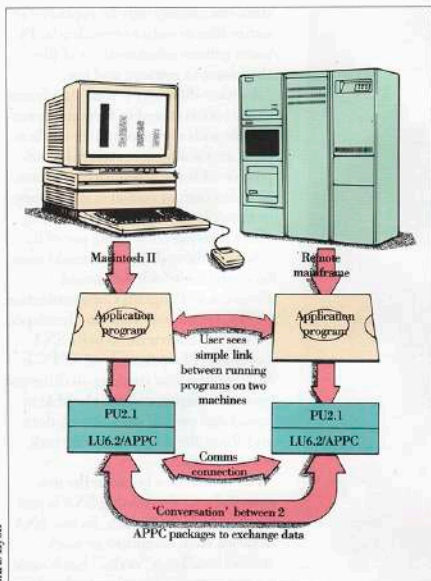
In this way applications programmers can create applications which draw data from the network while still working with the all-important Macintosh interface.

The new LU6.2 protocol standard is a particular development of logic unit communications software. When matched with a new form of PU called PU2.1, it opens up exciting possibilities for the Macintosh.

With PU2.1 users can set up SNA networks that do not require a mainframe to manage the network. Older SNA versions needed a mainframe or a dedicated controller attached to a mainframe to manage intercommunication and set up the connections.

The arrival of PU2.1 enables small networks (or branches of a larger network) to be managed independently of the mainframe. While LU6.2 manages the program-to-program communications, PU2.1 allows users

Ian Wright



Chris Lyon

Information flow between micro and mainframe must be two-way rather than one-way so that micros co-operate with, and supplement, mainframe resources

to directly link programs running on PC's and Macintoshes without the intervention of a central controller.

Many mainframe and minicomputer manufacturers such as Digital Equipment Corporation (DEC), Honeywell-Bull, and Unisys have committed to the LU6.2 standard as a way of integrating their own software applications with applications running on IBM or other machines on an SNA network.

IBM itself will be building LU6.2 into the PC's new OS/2 operating system when later versions of the OS/2 Extended Edition appear at the end of 1988. And Apple has now committed itself to LU6.2 support for the Macintosh, using technology bought in from California-based Orion Network Systems.

'We first provided Apple with our software in 1985. But at that time the company didn't have the hardware to support that kind of networking,' said Orion president Paul Rampel.

'With the SE and II, the Macintosh now has slots for the necessary network interface cards. These cards are needed since SDLC, Token Ring, and X.25 are the only three protocols that IBM supports.

'Our software allows users to write applications that can communicate with a wide range of applications on IBM hardware platforms, including mainframes, System/3X, and PCs,' said Rampel.

'Hardware using our software appears as just another SNA node. The end user doesn't see the interface of LU6.2, just the interface of an application which can bring remote resources together as though they were gathered on one local machine.'

Orion's business is producing portable versions of IBM communications software. The company leaves it to the hardware manufacturers to adapt it to their own hardware. MacAPPC will now put the Macintosh in a strong position in this new market. Macintosh programmers will start level in the race to write the new applications software that will be required.

And as IBM is not promising LU6.2 support in OS/2 until a later release of the Extended Edition, Macintosh programmers may even get a head start if Apple supplies the software soon.

The traditional Macintosh virtues of ease of use and learning can be maintained in any future APPC-compatible applications just as they have been used to improve traditional micro-to-mainframe communications.

For example Digital Communications Associates (DCA), which has just developed versions of its top-selling IRMA micro-to-mainframe interface boards for the Macintosh SE and II, is using the special Macintosh features to simplify the procedure. The company has pledged full support for LU6.2 and APPC across its entire product line.

According to Howard Inns, Macintosh IRMA product manager at DCA's UK distributor Computer Marketing Associates, the Macintosh boards give users the same 3270 emulation and file transfer facilities as the original IRMA gave to PC users.

'But with Macintosh IRMA you can cut and paste from the mainframe session window into a Macintosh application such as a word processor; exit into another Macintosh application, and leave the mainframe session running in the background.'

'It presents data in a way that is more consistent with the Macintosh

interface. File transfer is initiated with the mouse, so that the receiving file is selected from a dialogue box.'

Inns confirmed that APPC support from DCA will give Macintosh programmers exactly the same opportunities as their PC counterparts. 'Applications can be written that appear to run on the Macintosh but are in fact accessing data on the host via a transparent link.'

Of course, using APPC requires a physical link between micro and mainframe using one of the three protocols supported by SNA. Macintosh IRMA uses SDLC, and Inns believes that the prospect of LU6.2 will increase the market for his products.

'Hardware will be needed to make the link. And that hardware has to fit into the existing mainframe structure,' he said.

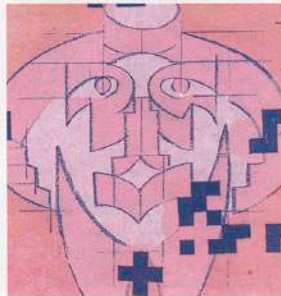
'If you buy Macintosh IRMA now, the physical board will fit into that structure and let you do the type of things that APPC promises.'

Neither Rampel nor Inns has any doubts that LU6.2 and APPC will be important developments in the micro-to-mainframe market.

Inns points to DCA's firm commitment, while Rampel draws attention to the number of third-party companies who are adopting the LU6.2 standard for future network and inter-network communications.

'We believe that LU6.2 now has the potential to become the premier connection not only between IBM systems but most other multi-vendor installations,' Rampel concluded. ■

Peter Jackson is Contributing Technical Editor of Apple Business



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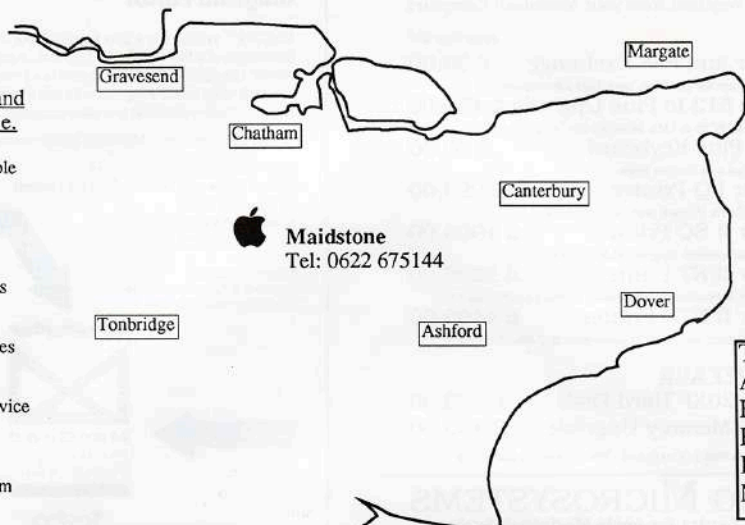
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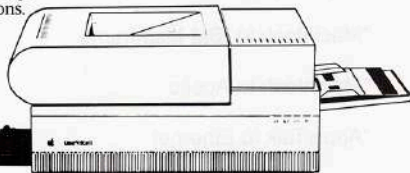


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SLIDE INTO SHOW BUSINESS

It is now possible to generate a slide show from a personal computer. Nick Rubery examines PowerPoint, the first of a new generation of Macintosh Desktop Presentation software.

The personal computer industry is at last waking up to the fact that presentations are a vital business tool. Indeed Apple's chief executive John Sculley told Wall Street analysts last year that the emerging field of Desktop Presentations could dwarf the Desktop Publishing market.

His words have already had a prophetic ring judging by the avalanche of programs already on the market for the conception, creation and production of 35mm slides, overheads and flip charts.

Slide shows are an accepted part of both education and business life and it has even been suggested that 30 per cent more information can be absorbed by an audience if there is some form of visual support material to back up the speaker. Text, charts and diagrams focus an audience's attention on the essential points.

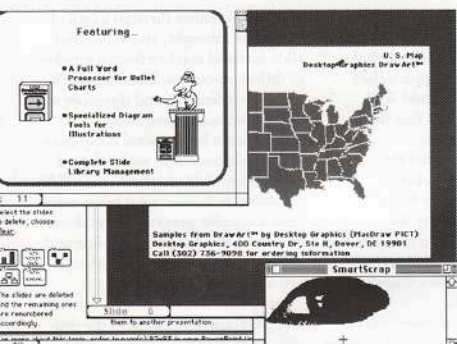
Some companies, however, seem to care little about how they present

themselves, either through a lack of budget or foresight, and very often slide material is taken from a number of different sources. This can give it an unco-ordinated, and therefore an unprofessional appearance.

As software for personal computers becomes increasingly sophisticated many more slide presentations will be produced in-house. Yet it takes more than a capable program to produce an acceptable document or slide and the basic skills of layout and design are often underestimated.

The production of slides has always had a certain mystique. On the simplest level, typed documents can be photographed onto transparency film, resulting in slides with little impact. Using reversal film and sandwiching colour gels offers a marginal improvement, but if the text and diagrams are produced on a Macintosh, output through a LaserWriter, and then photographed, the improvement can be dramatic.





Above and right: PowerPoint utilises special drawing tools for diagrams and illustrations. Visuals can be prepared for most formats including overhead transparencies

Producing slides from the output of programs such as *MacDraw* or *MacDraw II* via rostrum camera techniques is easily accomplished, but now a company called Forethought has produced *PowerPoint*, a program it claims is the first specialised presentation aid software.

So what does *PowerPoint* offer that a combination of a draw/print package and a charting program does not?

PowerPoint is described by Forethought as "the Macintosh program for planning and creating complete presentations." It provides an environment for the creation of slides to the basic formats of overhead foils (3:4 ratio) and 35mm slides (2:3 ratio). It has the familiar graphics tools such as lines, ovals, and rectangles, and basic commands like "snap-to-grid" provides the ability to produce organisation charts and simple graphic enhancements.

Text creation is split into two modes. The Labeler is used to type and position short segments of text, and the Word Processor is a powerful facility that creates paragraphs or outlines. To input text on a slide, a box is pulled out across the area of the slide.

Resizing the box reformats the text automatically. The bottom of the box expands to accommodate more text, and aligning it to left, centre, right or justified is straightforward, as is the setting of tabs and indents to five sub-levels. Many boxes can be present on the slide, each with its own independent attributes, so different layouts of text can co-exist side-by-side.

PowerPoint differs from normal Macintosh text-formatting practice in the curious way it handles fonts. The

only font available under the "style menu" is Helvetica, in either 18 or 24 point. Selecting the "other fonts" option is the only way to gain access to the other fonts. The procedure is like using FontDA mover; fonts and all the respective point sizes have to be added to the style menu. They only remain resident for the particular set of slides you are working on, so if another set of slides are started you must select the fonts all over again.

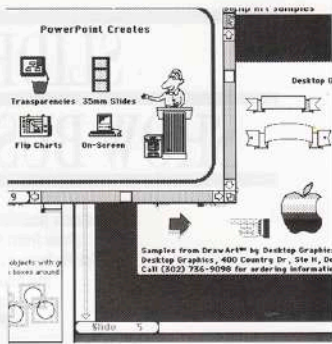
To produce a slide show, the first task is to design a Slide Master which allows the placement of objects that will appear on each slide, such as frames, logos, the date or other graphic devices. The master format can be deselected at any time by choosing "omit master" from the edit menu, affecting only the current slide. This allows you to put other features on that particular slide.

There are no means of generating charts in *PowerPoint*, so a program like *Cricket Graph* would be necessary, and for more complex diagrams, *MacDraw* or *MacDraw II* are essential. Anything that can be transferred via the clipboard can be included in the presentation. A facility to paste directly from other applications is available, so pasting from outline programs like *MORE* or *ThinkTank* automatically creates a series of slides that corresponds to the various outline headings.

Once your presentation is created, the order of the slides can be changed using the "slide sorter." This displays an overview of the slide set either as a miniature, or, by clicking on its companion button, as a list of titles in order. Any slide can be selected and repositioned in the sequence or deleted.

When you are satisfied with the slides and in order to practise your script, the complete presentation can be shown to a small group by using the "slide show" option from the file menu. The menus and tool boxes are hidden giving all of the screen area over to the slide. A nice enhancement is the production of handouts or notes to accompany your presentation.

The hardback manual which accompanies the program gives a clear guide to the features and a "Guide to Presentations" booklet claims to help you get the most out of *PowerPoint*



using the templates supplied or by creating your own.

When the time comes to output the presentation the slides have to be printed out on the LaserWriter and taken through the rostrum techniques described earlier. It is possible to produce slides directly using the recently launched ImageMaker device, but there is no support of professional digital cameras with this release.

Clearly the colour Macintosh II and programs like *Cricket Presents* will be competition to *PowerPoint*.

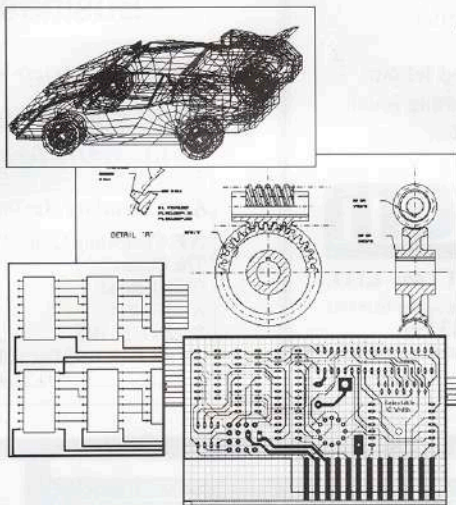
As it stands *PowerPoint* is easily grasped with few differences from the normal Macintosh way of doing things. However it needs other applications to supplement it which will add to the cost, although many people who would be buying *PowerPoint* should already have them.

To conclude, I do not believe *PowerPoint* offers a total solution to the production of presentation material. It is possible to produce similar results using other software. However, it will competently enable you to format and organise your presentation material in a clear manner, and if you feel you need such facilities as the capable "text editor" and the "slide show" feature which it offers, then the program will serve you well. ■

PowerPoint Version 1.01 (£295) is distributed by Microsoft: Excel House, 49 De Montfort Road, Reading, Berks Tel. 0734 500741.

Nick Rubery is a creative director of Cursor Computer Graphics, a Bristol-based design consultancy specialising in corporate presentations.

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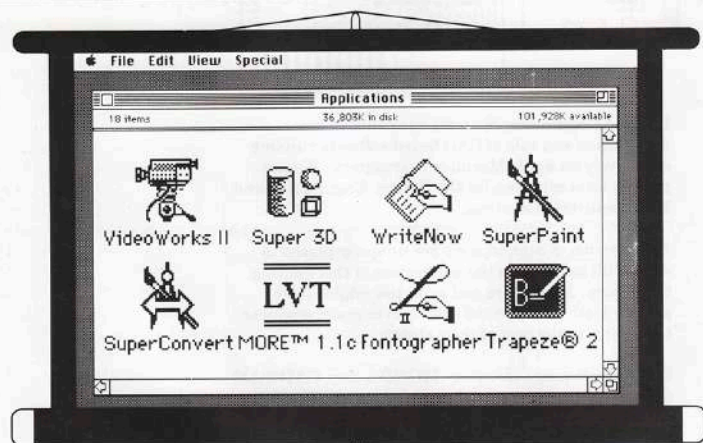
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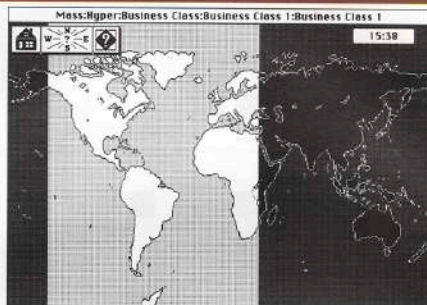
HyperCard itself is a new kind of software being packed with every Macintosh. It allows you to associate pieces of information in a way that is more intuitive than the conventional method of retrieving list-based information from traditional databases.

Business Class is a powerful example of *HyperCard*'s ability. Its author Danny Goodman worked on the development of the program and has written the definitive work on the language: "The Complete HyperCard Handbook."

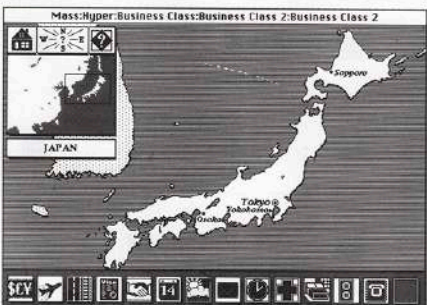
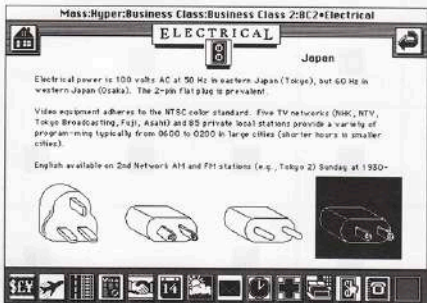
So customers have a right to expect quality. In fact Goodman does deliver and the scope of *Business Class* leaves little to be desired from the international traveller. Load up the disk, click the icon, and a map of the world appears on the screen. But this is no static drawing. Each segment of the map is interactive. Point to a country, click the mouse, and a magnified view of that territory appears.

Half the map remains in darkness to show night-time regions. The band of darkness moves across the screen one time zone every hour. So you can instantly see whether the sales director in Alaska is likely to be asleep.

Surrounding the screen are 13 "live" areas called buttons. Each displays a



Business Class is the *HyperCard* program that claims to turn a Macintosh into an international travel planner. Ian White clicks his way around the world to see if it works effectively.



Above: the band of darkness moves across time zones to show night-time regions. Below: click on any country to see a magnified view and again on any "button" to show detailed subjects

symbol relating to currency, air travel, social customs, climate, postal rates, time, hotels, electrical standards, travel documents and telephone directories. Point and click on the appropriate button and a new card appears. Very quickly you begin to understand how *Business Class* has linked together thousands of travel facts and figures pertaining to 65 countries in an interactive format.

Unfortunately the UK pulse dialling system means the valuable direct built-in telephone interface cannot be used in this country.

US users, however, have the luxury of instant connection with the reservation systems of airlines, hotels, car rental firms, and travel agencies by clicking on an icon of the relevant telephone number.

The program was designed specifically for the business traveller or anyone who carries out business on an international scale. You don't even have to leave the country to benefit from its features. Anyone needing to call or write to an overseas business contact will benefit from the instant on-line information of *Business Class*.

Before making a call it is easy to check on the local time and whether or not you may be calling on a public holiday. *Business Class* doesn't just stop at being an electronic medium.

It can create itineraries that can be printed out on the nearest LaserWriter or ImageWriter printer. Of course the package is not intended as a replacement for the services of a travel agency.

It doesn't support any financial transaction and it can't interrogate the airline reservation computer, or plead for a spare seat. What it does do is distill essential travel information in a dynamic visual form.

Business Class (£75) is distributed by Activation (UK) Ltd, 23 Pond Street, Hampstead, London NW3 2PN. Tel. 01-431-1101.

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Until recently the personal computer software market was dominated by the three giants: Lotus, Microsoft, and Ashton-Tate. Each carved out its niche by supplying a specific part of the market. Microsoft's BASIC and MS-DOS operating system had destroyed Digital Research's 8-bit CP/M operating system.

Lotus ruled with its integrated spreadsheet 1-2-3, and Ashton-Tate had been the king of database management.

But now the old order is under threat. Relative newcomers such as Borland and Blyth are attacking the old guard with powerful new products such as, respectively, *Reflex* and *Omnis*, often at lower prices.

The software industry generally has had to adapt to changing market requirements. The proliferation of hard disk drives means copy protection can hinder the way users work. Microsoft, for example, has removed copy protection of all its latest products after user complaints that protection was restricting use of the product.

MICROSOFT

Through its links as an IBM systems software supplier, Microsoft has an unbreakable grip on the personal computer software market, and it is likely to last for the foreseeable future. Having helped IBM with its first generation PC, while cleverly keeping the rights to sell MS-DOS to other manufacturers, Microsoft has secured its position with the contract to write the new PS/2 standard.

Microsoft has got rested on its strength in operating systems. Its application products such as *Multiphan* and *Word* now account for nearly half its \$400 million revenue.

Microsoft was also the first big developer to get behind the Macintosh, even though the decision of Apple co-founder Steve Jobs to bundle *MacWrite* word processing with early

Every month Apple Business's Analysis Unit will be examining the performance, product and marketing aspects of leading players in the Apple environment. This month **Jason Crisp**, County NatWest assistant director leads the analysis.

Macintoshes led to Microsoft President Bill Gates putting the entire Macintosh software programme on "hold". It was only after this dispute had been resolved that Microsoft introduced its first range of Macintosh products such as *Chart*, *File* and *Multiphan*.

Now Microsoft's *Excel* is becoming to the Macintosh what 1-2-3 is to the IBM PC. *Word* (3.01) is emerging as the popular Macintosh word processor after a hiccup with bug-riddled versions of *Word* (3.0).

Microsoft has been implementing an office automation strategy and has formed an Integrated Office System Group to design and acquire software suitable for workgroups in the IBM and Macintosh environments. It realises that the next few years will see a trend towards software directed at work group productivity and it recently acquired two existing products to fit this direction. These were Internet's *InterMail*, the Macintosh electronic mail program for the

Macintosh, and *ForeThought's PowerPoint Desktop Presentation software* (see review on page 79).

Microsoft's UK subsidiary has been having some problems.

Outgoing managing director David Fraser has left his replacement David Svenson a legacy of unhappy end-users furious at Microsoft's policy of discontinuing direct support. Meanwhile marketing director Mark Plant abruptly left the company soon after Svenson's arrival reportedly to "pursue outside business interests".

On Wall Street the company has performed slightly better than average since October. The February median share price has been \$55, compared with \$24.12 in January last year.

LOTUS

To some extent Lotus has been a victim of the success of 1-2-3. The integrated spreadsheet established the company as the owner of the IBM PC spread-

sheet standard. But it also saddled it with the image of being a one-product company. A range of new products including *Freelance Plus* and *Manuscript* helped add to its \$400 million turnover.

The fame of 1-2-3 meant it was a hard act for even other Lotus products to follow. *Symphony*, the six-in-one, integrated package for the PC and compatibles, failed to repeat the success of 1-2-3.

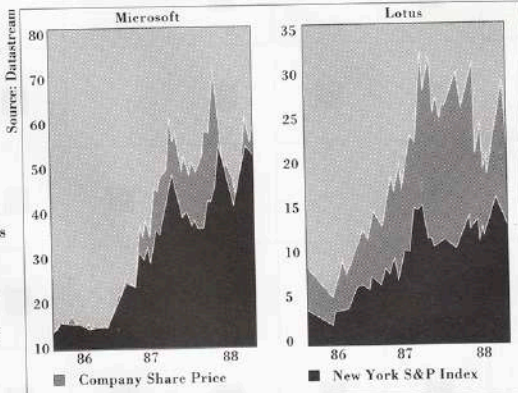
Lotus' first step into the Macintosh market was an integrated package called *Jazz*. This also failed to match anticipated sales and Lotus kept away from Macintosh until last year when it announced 1-2-3 would be available for the Macintosh in the second quarter of this year. A revamped version of *Jazz*, called *Modern Jazz* is also scheduled.

Lotus faces the probability of losing some of its 70 per cent share of the spreadsheet market to Borland's *Quattro* clone and, to some degree, Microsoft's *Excel*.

Wall Street analysts Paine Webber remain bullish about Lotus's future. A recent report from the firm's Technology Group noted: "The strategy of selling to large corporate customers will entrench Lotus successfully as the owner of the next spreadsheet standard. Lotus's next generation of spreadsheet products will provide the muscle needed to maintain majority market share and grow overall revenues."

Lotus's Windsor-based subsidiary is under the direction of new managing director Paul Bailey who set up Digital Research's UK arm in 1982 and launched the Macintosh-clone interface *GEM* in this country.

Bailey's appointment is seen as evidence of Lotus's commitment to build on its UK market-share lead. He brings considerable experience of all aspects of the personal computer business at a crucial time of evolution as the industry waits for OS/2 to make its presence felt.



Lotus & Microsoft share prices relative to New York S&P composite index from January 1986 to January 1988

PUBLISHING POWERHOUSE!



Corporations and government agencies have discovered the benefits of electronic publishing - faster turn-around, lower cost, better-looking documents. But until now, "electronic publishing" on the Apple Macintosh meant using three or four different programs for text, graphics and page layout. Just keeping track of them all was a full time job.

True, you could create attractive pages this way, but when changes were made, you had to manually revise each page... one by one by one. That's why some people thought electronic publishing was suitable only for newsletters and memos - documents short in length and lifespan. Electronic publishing on the Mac couldn't handle the full range of corporate publishing. Until Interleaf.

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