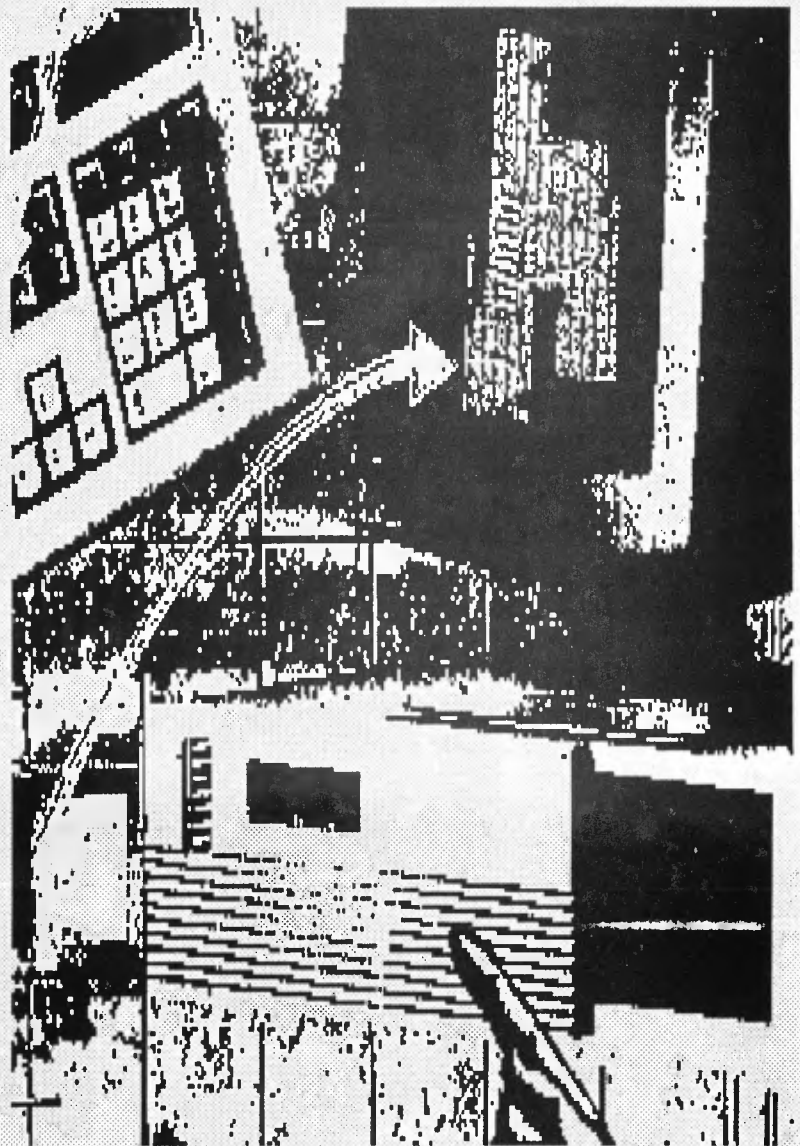# computers for arts marketing

Michael Prochak
1 Keepers Cottage
Park Farm
Fair Lane
Robertsbridge
East Sussex TN32 5NG
Tel 0580-880824
BT Gold 75:MUS203
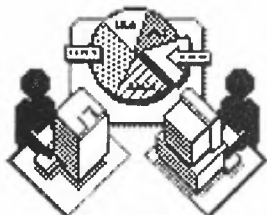
A survey of computerized box-office systems and specialized marketing software prepared for the Arts Council by Michael Prochak

computers for arts marketing

UpDate...
March
1993

Version 2.0   *No. 1*

Produced for the Arts Council
by Michael Prochak
0580-880824

Boxing Clever...

The section on computerised box office systems in the most recent version of *Computers For Arts Marketing* was obviously fairly well balanced in that it apparently irritated or annoyed nearly every supplier in equal measure. While most were willing to concede that if read in its entirety the section was fair and accurate, all were even more keen to stress that no grass was growing under their feet and that fixes, improvements and enhancements had been or will shortly be implemented.

All the major players including *PASS*, *BOCS*, *HEBOS* and *DataBox* have continued to improve and develop their products and each system will now probably include discernably different functionality than previously described in the main report. Apart from improvements to ticketing and marketing, some suppliers are investigating the potential of linking with EIS (Executive Information Systems) and GIS (Geographic Information Systems) packages as well as improving their existing linking abilities with other applications such as databases, spreadsheets, graphing and statistical analysis software. All this has resulted in an extremely competitive environment and at least for most venues, depending on size and budget, a not so simple choice between *BOCS* and *PASS* or *HEBOS* and *DataBox*.

RITA, as explained in the main report, has simply not materialised in any competitive semblance and currently is not competing favourably with any of the aforementioned systems. Although *RITA* once had an installed base of over 30 sites, according to sources at the RSC, no new systems have been sold over the past 12 months. These same sources indicated that the RSC was having some difficulties with their new partners Synergix over the development costs of the new marketing module. However, this is an industry of dramatic

Industry Eye

ACER has announced a chip set to challenge Intel's Pentium. Using MIPS R4000 and R4400 RISC chips, the new architecture would permit PC's selling for under £2400 to run Microsoft's Windows NT up to five times faster than 486-based systems. Pentium is twice as fast as the 80486.

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John Rada, head of strategic alliances for DEC, says that the company missed the two biggest trends in the industry: personal computing and open systems. But past mistakes have left DEC with a clean slate, and the company's hopes now lie in its 64-bit Alpha chip technology, and its ability to gain market share with low-margin, high volume personal computers. Undoubtedly BOCs will be watching this area with some interest.

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Seven major computer companies have formed a consortium to support Power PC chip technology as a new standard, and to encourage software developers to design products which take advantage of Power PC. PowerPC is one of the cornerstones of the Apple-IBM-Motorola alliance and the first machine should arrive early next year. Intel's Pentium chip is being seen by analysts as the closest possible competitor.

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According to Dataquest, DOS lost operating system market share in 1992, falling from 74% to 49.2%. Windows grew from 14.5% to 37.6% of OS sales, while the Macintosh operating system rose from 10.4% to 12.2%. IBM's OS/2 also lost ground, dropping from 1.1% to 1% of OS sales.

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Microsoft's wealthy Bill Gates recently showed a wallet computer, explaining how such devices would replace money, car keys, credit cards and everything one normally carries in a wallet. Gates, who is somewhat of an authority on wallets, says such things are just ways to verify one's identity.

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IBM'S integrated systems subsidiary is promoting the astonishing fact that it will now set customers up with data management solutions using whatever hardware is most appropriate, even if it is not IBM. The company is calling this campaign, "A Whole New Shade of Blue."

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Sales booths with touch-screens and human-like voices may start being used in stores, or perhaps even theatres, instead of sales personnel. IBM is launching a line of computers designed to act as interactive vending machines, delivering sales pitches and taking product orders. Such machines could also supplement or replace customer service staff in malls, shops, offices and theatres.

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swings and as I said in the main report, we can still expect a further shake-out in the computerised box office market over the next few years.

PASS:

Select Ticketing Systems took umbrage over my comment that computerised box office systems were nothing more than very clever databases. While they concede that the whole *PASS* masterfile is obviously a database, they say the set of programs dealing with ticketing does not use a database as such and is probably the most proprietary thing Select has ever done. However, if we accept, as text books say, that a database management system is a truly general-purpose software package capable of processing any logical structure and manipulating the data within, perhaps I would have been more correct in suggesting that computerised box office systems are merely *database management systems* with an attitude.

The good news for *PASS* users is that its networking software is no longer even slightly non-standard. Select is now using a product called MegaWorks from MegaSoft which can be used to network virtually any standard PC software and can coexist with Novell. MegaWorks replaces Etherseries which reportedly did not lend itself to having other multi-user software loaded. Another very big plus for Select and its customers is the fact that *PASS* is currently available on RISC (Reduced Information System Computer) technology and is up and running on IBM's RS6000 machines. RS6000 RISC technology represents much of the foundation technology for the forthcoming PowerPC platform. PowerPC is one of the results of the alliance between IBM, Apple, Motorola and others to set a new computing standard for the 90s. Being a RISC machine, PowerPC will be incredibly fast and more powerful than many of today's minis and workstations. The philosophy behind PowerPC is to provide users with a single platform that will support Windows, OS/2, Macintosh System 7, Unix and other object oriented operating systems all on the same machine. This means that users will be able to choose if they want their PC to look like a Windows machine, a Macintosh or a Unix workstation without having to buy different hardware. The first RS6000-based *PASS* installation was Theatre Royal in Plymouth earlier this year.

Commenting on conspicuous lack of a true GUI (Graphic User Interface) on *PASS* and the forthcoming *PASS2*, Select said that they have done this deliberately because in their opinion, the processing and speed overhead in working within GUIs does not, in their view, justify the benefits at this time. The other issue here, according to Select, is that they say they have a contractual obligation to make *PASS2* run on all existing customers' equipment, including 8086 terminals. Personally, I don't think at this point in time any reasonable size organisation should be encouraged to continue to run 8086 PCs

for any purpose. None of today's best general PC software is that backwards compatible and certainly none of the software currently being developed for Windows will run on such machines. At the end of the day, any organisation with creaking XT or AT PC kit would be better off trading up to something better sooner rather than later. For more reasons, see the piece later in this *Update* on the Gartner group cost/benefits study.

While there are no reported *PASS2* installations in the UK as yet, sources say there are beta versions running in Germany and we could see the first installation here sometime this summer. Select did say that *PASS3* will implement a full GUI because by then, processing power available at lower prices will have overcome what they see as today's limitations. No indication, however, was given as to when *PASS3* might appear.

BOCS:

BOCS has undergone some major corporate changes over the past year and has been totally re-structured after an internal management buy-out of the Expedier group. Taking issue with comments in the main report suggesting that the system would benefit from a major re-write and over-haul, the new management at SpaceTime were keen to point out that *BMS* was written in the last 18 months, the subscription module was produced in the last 9 months and much of the original code has been completely re-written so, for example, the database can now handle over 250 times as much information as the original. Actually, what the original report was commenting on was the ticketing screens and user-interface which, as it happens, is the only part of the program which is still more or less unchanged. Taking a more aggressive stance in the market *BOCS* is now providing major upgrades every one to two years and the current version 3.7H of *BOCS Plus* will shortly be replaced with version 3.8. The *BOCS* marketing module, *BMS* which is written in CoreVision, is currently on version 3.02. New features in this version include direct deposit settlement from *BMS* for payments made for memberships, contributions and subscriptions, multiple selection windows for code lists, price band settings for subscriptions plus best-by-series seating requests for multi-configuration options and there is now a system parameter screen to set the time-out period used for the interface between *BMS* and *BOCS* for seat allocation. There have also been various bug-fixes and *BOCS* is currently being installed to replace the former system at Wembley.

As mentioned earlier, *BOCS* is one of the companies that have been exploring the potential of EIS-type systems as front ends for their marketing databases. *BMS* is currently comprised of 150 datasets which collectively contain over 2204 datafields. To facilitate extraction, analysis and the compilation of coherent reports, graphs, labels, etc, *BOCS* has been using a

powerful range of EIS-type products from Rapid-Gen Systems Ltd. *simplyGenius*, as the name implies, has been designed for novice users and provides an easy method of building reports from datasets. The program is designed to be easily refined without losing the simplicity offered by menu selection and users are steered through the program via a series of menu screens and command keys. *easyGenius* is designed for the more experienced *BMS* user and provides a reasonably powerful reporting, graphics and update facility. Using what Rapid-Gen describe as an 'English-like' language format, information can be extracted from the database and out-put to a variety of formats. An even more sophisticated Rapid-Gen/*BMS* user-interface and program generator is scheduled for release this summer. Designed to simplify the production of more complicated reports based on multiple-selection criteria, this user front-end will guide users through specific sets of screens containing questions with only a limited number of answers. The new system should make extensive use of pop-up windows and will include a comprehensive help facility. This and other EIS-style systems will be covered in more detail in the next *Update*.

A major issue for *BOCS* over the next few years will be their delivery platform. Although they are currently providing a very good package on MicroVAX 3100/40 systems, the cost/performance benefits of emerging PC technology such as PowerPC may begin to make mini-based systems look over-priced. As mentioned in *Industry Eye*, even DEC is re-thinking its policy on PC-based technology and the challenge for *BOCS* will be how to make the transition to a multiple platform configuration without abandoning its sizeable installed base

HEBOS:

HEBOS was keen to stress that it's been under continuous development ever since its public launch in May 1991 with new releases to its customers roughly every three months. Development is monitored by the active 30-strong *HEBOS* User Group, which meets quarterly in London, Edinburgh and Stoke-on-Trent, and at the time of this update brings together sites with auditoria ranging from 50 seats to 7,000 and with between one and six users per site.

According to *HEBOS*, the current version 8.08 runs 50% faster than the version reported on in version 2.0 of *Computers for Arts Marketing*, and has nearly twice the functionality. New features for box office users include the ability to allow staff to print out customer's names and addresses on ticket stock for mailing in window envelopes, to print out group tickets, to add postage charges and to enter the *HEBOS* quick booking mode for any seat in the house. For sites who require instant tickets *HEBOS* now supports thermal ticket printers as well as the fast low-cost ink jet printers suitable for theatre admissions. Several new standard

reports displaying audit details and daily and advanced booking sales have been provided to the User Group's specifications.

Marketing with *HEBOS* is carried out within the *Patron Database*, which they claim has one of the easiest-to-use interfaces of any system on the market. It enables staff without extensive computer experience to get the best results from their searches quickly and without effort. *HEBOS* also links with an optional mapping package to allow sites to automatically map their entire customer base, or their customers for certain performances against a road map of the area and analyse drive-time zones on various criteria and to evaluate the effectiveness of advertising campaigns. The new *TRENDS* module is another optional extra for users who need to do more than pull standard reports by allowing venue management to examine and compare sales and patron trends.

DataBox:

DataBox still remains the strongest of the low-cost contenders with over 25 installations in the UK and increasing interest from venues abroad. DataCulture, like *PASS* and *BOCS*, didn't share my view that their text-based interface retained a rather creaky feel and to be fair, as a non-GUI implementation, *DataBox* does provide a very fast, efficient and easy-to-use interface. Because of the scale of their operation, *DataBox* is probably tweaked and upgraded more often than some of the larger systems and the company is still able to respond to individual needs on a much more personal level. Later this year, a series of bolt-on modules will be available for use with *DataBox* providing a membership manager, subscription facility, export to accounting packages and a tele-sales module. Also, please note the change to *DataBox's* telephone number on page 4.

Others:

Synchro Systems, who have a substantial chunk of the leisure and local authority ticketing market, are currently making a concerted effort to regain credibility in the arts and theatre market as well. They have severed their previous licensing agreement with Profile and now claim to be involved in a 'fast-track development route' which will provide them with a high-end system capable of competing against *BOCS* and *PASS*. Synchro's new and improved *THEATAR* is a Unix-based system with a Windows-style GUI and will be either mouse or track-ball driven. Marketing facilities are being improved to include PostCode retrieval, ChequeLine, etc and a new version running on an RS6000 RISC system has been installed at Earls Court. Synchro wants to compete against *PASS* and *BOCS* particularly for big network installations and to prove they can do it, they did all the ticketing for the World Cup in Rome. Watch this space for interesting developments in the partnership/joining-up-but-not-really-a-takeover department.

Counting The Cost

Assessing the benefits of buying any PC technology requires that potential consumers look at more than just the initial purchase price. Large organisations particularly have to measure corporate-sounding things like direct cost savings, cost avoidance, revenue increase and intangibles such as strategic fit, increased quality and improved customer service. But even the small arts organisations need to weigh up all the associated costs before deciding which system is best for the long haul. Since 1987, the Gartner Group Consulting Services has been tracking the costs and benefits of PC technology in its life-cycle model and has come up with some rather surprising conclusions.

Everyone knows that the glut of MS-DOS PC clones has driven capital costs down to remarkable levels. But capital cost of a PC represents only about one-sixth of the total cost of ownership. Despite dramatic decreases in hardware prices, since 1987, the five-year life-cycle cost of the average DOS-PC has ballooned from around £13000 to over £24000. Over a typical period, hardware and software expenses will only represent 17% of total cost, while labour-related expenses such as technical support, administration and end-user operations represent nearly 83% of total cost. Significant costs which continue throughout a PC's lifetime dwarf initial investment and according to the Gartner study, DOS is now the most expensive desktop platform overall with an average life-cycle cost of well over £24000.

Surprisingly, the report claims that the Apple Macintosh is now the lowest total cost platform and is likely to maintain that position over both DOS and Windows. According to the Gartner study, the Macintosh life-cycle cost is around £6000 less than DOS and just under £3000 less than Windows. While Windows 3.x has a higher overall cost than the Macintosh by around 19%, the cost differential is seen by the report to be primarily due to the fact that the platform is still immature, unstable and application consistency has yet to be proven. However, Apple shouldn't become too complacent since the report also says that as Windows moves into its 32-bit implementations, it will start to decrease in cost. Capital costs for comparably equipped Windows and Macintosh PCs are remarkably similar at the moment with only a 2 to 3% difference between the two. But because a Windows machine is more difficult to set up and modify than a Macintosh and configurations are less homogeneous, technical support costs for the Macintosh are around 14% lower than for Windows.

The Gartner research suggests that end-user costs can be reduced by between 15 and 50% by implementing a consistent GUI. The Macintosh is said to deliver a 50% reduction in end-user costs over the DOS platform and a 30% reduction over Windows due to the maturity of the environment coupled with the degree of adherence to Apple guidelines by developers. Windows end-user operation costs, by comparison, are likely to increase as application developers continue to write new and inconsistent interfaces to their software making learning more difficult.

Next Update...
EIS and Mapping Software

TicketMaster Invests £0.25million In DataPoint

Coinciding with its move to new premises, TicketMaster has installed an automatic call distributor (ACD) and a universal management information system (MIS) supplied by telephone business specialists, Datapoint Ltd. The system, which costs slightly more than £0.25million, reportedly will enable TicketMaster to maximise the efficiency of its West End telephone operations.

TicketMaster's new site, based in Leicester Square, can support 135 answering positions compared with the 35 available at its previous location. The ACD will distribute incoming calls to agents as soon as they are available and if callers are put in a queue, the system will subject them to 'comfort' messages and excerpts from the latest West End musicals until an agent is free. The Datapoint kit also provides management reports that will enable TicketMaster to constantly monitor its incoming calls line by line and minute by minute. TicketMaster provides a 24hour 7-day-a-week service and typical call volumes can be between 15000 and 20000 calls per day.

In Brief...

The latest release of SNAP, the PC-based survey analysis package, has several new features said to make it faster and easier to use. The standard version can now analyse up to 100,000 records in less than 8seconds on a 386 PC and still costs under £700.

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The Statistical Office of the European Communities and Strategic Mapping Inc (SMI) have announced the launch of a new software package providing Europe-wide statistical data in a map-based format for PCs. SMI is a major developer and supplier of GIS (Geographic Information Systems) and this new package includes full demographic and economic data for all EC member states. Prices for various GIS configurations range from £360 to £2330 and applications run on both IBM-compatible or Macintosh PCs.

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One of the best EIS systems on the market at the moment is New Commander from Comshare. No matter where data is stored, New Commander can access it directly without necessarily having to duplicate it again. New Commander runs on Windows, OS/2 and Macintosh and can deliver data from any host including IBM, DEC, ICL or HP. EIS will be covered in more detail in the next *Update*.

computers for arts marketing
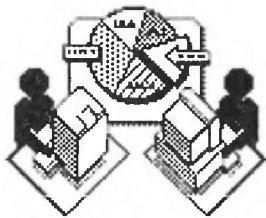
On The Road...

Getting The Arts On-Line Via The Information Superhighway...

It's difficult to pick up any magazine or newspaper these days without finding somebody rattling on about the 'digital information superhighway'. The inevitable convergence of computer and telecommunications technology has launched a whole new fashion or fad that has led to the *Computer Guardian* pages being re-christened as *OnLine* and has made magazines like *Wired* and *Mondo2000* required reading for anyone in desperate need of an e-life.

Sure, electronic mail (e-mail) has been around for quite some time now. But we're no longer just talking modems and e-mail here. We're talking about the 'Infobahn' and the pervasive networks like the much vaunted Internet, that will link the world and everyone in it, to create a single computing and communicating global village with access to every conceivable form of information from daily news to daily gossip, technical and statistical information, and even the latest information on

Industry Eye

TOSHIBA'S decision to invest in PowerPC technology scored points against Intel in Japan. While Toshiba's specific plans remain unclear, the scope of the deal with IBM is encouraging broad speculation. Other Japanese firms working with PowerPC include Canon and Hitachi.

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MOTOROLA has announced an adapted version of Microsoft Windows NT to run on PowerPC-based machines. Microsoft is also working on PowerPC ready version of its Excel and Word applications. Over 20 PC makers are rumored to be working on PowerPC computers for the November Comdex.

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MICROSOFT validated the importance of geographic visualisation recently when it announced it will include MapInfo in future versions of Office and Excel. Microsoft said it chose MapInfo because it's the world leader in desktop mapping software .

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WOMEN are better with PCs than their male counterparts. A recent survey of sales and marketing professionals showed that 9 out of 10 women use PCs in the office compared with just 7 out of 10 men. When asked if they could use the system without assistance, 75% or the men said they couldn't compared to just 16% of the women.

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offices could evolve into 'clubs' where workers meet on a more enlightened basis for meetings, presentations, etc, with mobile computers and on-line systems playing an even more important role as the link between out-worker and a greatly reduced office support staff. With a PC or Macintosh, a high-speed modem, and access to an e-mail service and other on-line databases, future home workers in their computerised cottages could be better informed, better prepared and more productive than their traditional office-bound colleagues.

New on-line services such as E-World are coming on stream all the time and eventually, the information superhighway will exist. Today, I can file all of my copy to magazines or national newspapers directly from my computer down the phone lines. In the not too distant future, I will be able to do the same thing from a notebook computer with no phone connection via a wireless network. Perhaps in the future, the problem won't be how to get on-line or how to stay in touch, but rather how to be left alone. But for better or for worse, the Infobahn is coming, and arts managers and organisations should start thinking about its potential now. Because when it finally does arrive, there won't be any room for hitch-hikers.

GreenNet...A European Computer Network For The Arts

While more established dial-up services such as CompuServe provide greater coverage, diversity and ease-of-use, the Infobahn has also spawned a number of smaller specialist nets seeking to attract niche and professional users. One such venture is GreenNet, which now supports an arts-specific area which is attracting some interest within the UK arts community.

Since July 1993 a number of arts professionals throughout Europe have been taking part in this project to create a European Computer Network for the Arts. The network, currently called Arts on GreenNet, was initiated in the UK by Dragan Klaic, Director of the Netherlands Theatre Institute, GreenNet, a non-profit computer communications organisation and Michael Jack, a theatre technician.

In the course of one year, membership of Arts on GreenNet has grown to more than 90, and consists of arts centres, artists organisations, publications, information resources and individual artists. Institutions such as the Institute for Contemporary Arts (UK), Soros Centres for Contemporary Arts Network (Eastern Europe), Office National de Diffusion Artistic (France) and many individual arts professionals are using Arts on GreenNet to communicate, collaborate and create.

At the same time a representative sample of information sources have been made available on-line for access by arts professionals around the globe. Journals, databases and computer conferences represent just some of the information that is becoming available to a wider audience than many arts professionals ever thought was possible. In March 1994 Arts on GreenNet received Initial Phase funding for the project from the Arts Council of England.

Although there a several hosts that provide computer communications to arts professionals in Europe (European Jazz Network and ArtNet Holland) GreenNet seeks to establish a network that:
* carries information and connects arts professional across all the arts
* aims to use local hosts in all European countries
* is networked with the Internet, allowing e-mail exchange to most networks in the world

Arts on GreenNet is now attempting to fill this perceived gap and The European Computer Network for the Arts will seek to provide a coordinated approach to this development across all of Europe on a long term basis.

Primary aims of this specialist network include:
Information & Information Management
* to continue to provide arts professionals with computer communications across Europe
* to facilitate the systematic identification and classification of arts information immediately useful to the bulk or arts professionals in Europe and to make such information available on-line
* to promote the incorporation of information in all the languages of the broader European community

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Technical Development: Training & Support
* to develop proprietary software specific
to the European Computer Network for
the Arts that will make connection to the
network easier
Outreach
* to support the development of regional
arts hosts
* to actively promote the establishment of
an international network of arts
computer networks
Strategy
The immediate priorities of the Network are to:
* increase the user base of arts
professionals in Europe
* provide support and advice to that user
base
* train the user base to use the network
* make available immediately useful
information sources
* increase the technology available to the
user base
* pursue funding for a Three Year
Development Plan

The Internet

As mentioned earlier, the Internet is a vast network
of networks including most Universities and many
governmental and non-governmental organisa-
tions world-wide. GreenNet, like many other
services, gives you access to the huge resources of
the Internet at no extra cost. There are many other
successful on-line arts networks throughout the
world such as ArtsNet (Australia), ArtsWire (US)
and the Latin American Contemporary Perform-
ing Arts Network. GreenNet says that it is always
looking for ways to collaborate with these and
other arts networks to help build an equally suc-
cessful European on-line arts network.
**For more information on the arts on GreenNet,
contact Michael Jack at GreenNet: tel: 071-
713-1941, fax: 071-833-1169, email:
mjack@gn.apc.org**

InterSystem User Group

A computerised box office systems user group was
launched this month at the Barbican with over 80
people in attnedance. Now meeting regularly, the
group is developing arts and entertainment industry-
wide protocols for customer records, standard event
categorisations, data exchange for touring companies
and venues and mapping and presentation of data.
The group is also the industry focus for discussions
about CACI's Arts ACORN project. For details ring:
0121-495387.

Box Office Top-Ups...

BOCs Makes An Executive Decision

At various demonstrations and exhibitions over the past
year, BOCs has been showing its latest developments in
front-end report generation using Executive Informa-
tion Systems (EIS) technology. The resulting new BOCs
Reporter Facility is now ready for general release and
will be included in forthcoming BOCs version 3.9
upgrades. What BOCs Reporter essentially does is offer
an array of easy-to-use menus containing skeletons and
prompts for crediting fast customised reports from
BOCs ticketing and marketing data. The Ticketing
Group claims that any member of staff can learn to
extract or print-out important information required by
promoters, marketing personnel or senior management
with just a few hours of basic training. BOCs reports can
be integrated with PC packages for issuing customer
invoices, customised letters and agency statements and
can also display graphs or create geographic represen-
tations of data using the new BOCs Mapping Facility
which will also be included in version 3.9. For executive
types who want to be seen to be staying ahead of the
pack, there is also an add-on module developed to
enhance the Report Facility called the BOCs Executive
Package. Currently in use at the Birmingham Hippo-
drome, this facility gives you interactive graphics and
'drill-down' capabilities for up-to-the-minute extrac-
tion and manipulation of audience data for profiling and
forecasting. *For further information contact BOCs on 071-
872-9977.*

PASS2 Showing Soon

Select Ticketing is currently previewing its latest ver-
sion of PASS2 to various consultants and industry
professionals while also celebrating its 500th installa-
tion in Sydney. Select has recently launched
FUNDRAISER, a doner management solution that can
handle membership, covenants, gift aid and fundraising
analysis. *For more information contact Select on 01727-
834303.*

Encore

Encore is currently working hard to establish itself as a
main competitor to both PASS and BOCs offering two
box office products with a track record of reliability and
ease-of-use. The interest and excitement surrounding
Encore is slightly reminiscent of the enthusiasm gener-
ated by PASS when it was first shown in the UK.
Currently, Encore's marketing and membership facilities
are rapidly being improved and while the module in
version 1.6 is quite good, the module to be included in
version 2.0 will be substantially better. Encore is also
cheaper than PASS or BOCS and is keen to please. For
any mid-large scale venue, Encore deserves a very
serious look. *For further details ring 081-742-8770.*

Turn On, Tune In, Book Up...

Today's computerised box office systems routinely speed up ticket sales and facilitate marketing activities by capturing patron data, analysing attendance patterns and perhaps even by providing raw data for mapping and life-style targeting. However, while these systems may provide functionality that can facilitate marketing, they don't take a proactive role in actually *doing* the marketing for you. Like word processors, databases and spreadsheets, computerised box office systems still just provide a set of tools. But what they don't provide is genuine intelligent assistance, increased customer access, or any real opportunity for direct product/consumer interactivity.

While various other commercial consumer providers have begun exploring on-line and multimedia marketing, interactive mailers and digital video, marketing in the arts world is still firmly rooted in and around print and mailing lists. Experiments with POS (Point Of Sale) systems for theatre tickets, similar to bank cash-points, have been piloted in Europe and in the US. But so far, this sort of technology has not sparked the imagination of the UK arts and theatre world. One of the reasons for this is that most arts marketing and management professionals are still befuddled by interactive multimedia technology. There is a kind of nominal awareness of the related jargon, like CD-ROM, touch-screens and digital video, although what, if anything, that sort of thing might have to contribute to the job of putting more bums on seats is still somewhat of a mystery. When acknowledged at all, multimedia, or related information presentation technologies, tends to be seen by arts managers and marketers as some sort of a Nintendo-like vehicle for entertainment. Their view is, who needs multimedia when we've got demographics? But the already thin line between entertainment and marketing is becoming almost invisible and in many other industries, marketing demographics are now perceived to be irrevocably linked with an emerging interactive age.

Outside the arts, most astute marketing professionals are already testing multiple versions of their messages, hoping to lure specific demographic groups. And, as interactive two-way communications evolve, marketers are hoping to gather even more specific information to determine which

viewers respond to which promotion or product, and ultimately establish a more effective dialogue with their most promising customers. Despite the media hype, not everyone out there surfs the Internet on a daily basis, and workable interactive high-definition television is still quite a long way off. But multimedia systems combined with telecommunications technology such as ISDN mean that direct interactive selling with video marketing is possible right now. So how could the performing arts industry begin to exploit the marketing potential of multimedia technology and why should it bother in the first place?

If you want to buy a ticket today, you either have to physically go to a theatre box office or book by phone, either directly through the box office or from an agency. All you know about what the particular production is like comes from what you've read in the press, what you've seen in the publicity material, or perhaps what a friend who'd seen it may have told you about it. Any combination of these is fine as long as the intentionality already exists. But what about impulse buying? What if you're out with friends walking around the West End and decide you want to go *somewhere*. You're not sure whether you want theatre, comedy, music, dance, but you want to go somewhere and you're open to suggestion. You could pop into a newsagent and pick up a copy of TimeOut or a newspaper to see what's on. You could go to a phone booth and ring FirstCall or TicketMaster, but you'd need to have some idea of what you wanted to see and where it was playing. Or, since it's not all that easy, you could simply give up and go to the pub for a drink and forget the whole thing.

But what if you could walk round the corner to an interactive kiosk with a touch-screen menu for music, dance, theatre, etc? Working through the menu you could find out what's on, where it's playing, how much it costs for tickets, if any tickets are available, times, etc. But you could also find out more. Once you narrowed your choice, you could call up a brief summary of the production you might want to see. You could find out who's in it, what the reviews are like and better still, you could watch a short video clip of the actual production as a preview to see what it really looks like and if it's the sort of thing you were expecting. You could also see a plan of the venue showing best available seats, amenities, etc. When you've decided, you could pick up the attached telephone, get a video-confer-

ence call on screen with someone at a venue or at an agency such as TicketMaster or FirstCall. This live digital agent would then interactively take you through a booking form, sort out your seat, charge the tickets to your credit card and give you directions to the venue. The exercise would have also captured valuable patron data which could then be uses later for further marketing activities.

While this may sound like science fiction to arts managers, it is a reality for the travel trade. Recently, Thomas Cook in Marble Arch in partnership with Olivetti, launched a multimedia holiday booking kiosk which does exactly what I've just described. But instead of selling theatre tickets, it sells holidays. Consumers can see a map of where they may want to go, watch a video of the hotel and surroundings and book a complete holiday on the spot. Such interactive kiosks also reduce the use of staff for consultation and apparently increase customer spend. Olivetti and other computer companies involved with multimedia see this solution as ideal for travel, retail, finance, information and entertainment markets. The Thomas Cook kiosk is a custom designed unit with a 17inch SVGA touch screen, stereo speakers, a credit card reader, video camera, a i486PC, ISDN connection, PCC handset, a laser printer and a laser disk to play back video clips. Obviously, as digital video compression technology improves, CD-ROM and video-on-demand systems could also be incorporated. Kiosks could be sited in shopping precincts, tourist information centres, supermarkets, or practically anywhere people go.

After quite a struggle, traditional arts and theatre managers were reluctantly dragged kicking and screaming into the information age by computerised box office systems. Now they must brace themselves for yet another telecultural shift where ticket selling and marketing activities are destined to become even more closely entwined. The driving principle behind the use of multimedia and interactive marketing is to make the consumer feel in control. The fact that they still may only have the choices marketing professionals give them is incidental. What consumers do get is more and better information, more access and opportunity and perhaps most importantly, they feel good about it.

computers for arts marketing

UpDate...
April 1994

On The Map...

Ever since our nomadic ancestors drew lines in the dirt to show how to get from here to there or to show precisely where buffalo roamed and the deer and the antelope played, maps have been the most common and practical way to represent real world data. In many ways, the map is the original graphic user interface (GUI) and still offers the most practical and easy way to show facts in the context of 'where'. While arts organisations are becoming increasingly aware of the need to understand how customers, sales and the like are spread geographically, the use of mapping and geographical information systems (GIS) is still remarkably rare.

Two reasons for the relative rarity of such specialist applications in the arts are that they tend to require an immense amount of processing power and until fairly recently, high-quality colour output has been particularly expensive. But with the rise of Pentium and PowerPC-based systems coupled with lower-cost colour printers, it's now quite a good time for arts organisations to begin to look at whether or not a mapping program could solve some of their marketing problems.

Industry Eye

Microsoft has announced plans to develop a PC-oriented cable television network along with a company called Tele-Communications, Inc. Content is expected to include magazine-format computer shows, home shopping, and information services accessible via cable through users' PC modems. Who knows, we may even be treated to a really excellent version of 'Gates World'.

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DEC reported a loss of $72.1 million for the last quarter, marking a small improvement over the $73.9 million loss in the same period last year. DEC characterized the loss as part of the difficult transition to a new business model incorporating the Alpha processor technology. Despite the news, both BOCs and TicketMaster remain committed to the DEC VAX platform for their box office systems.

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According to market research firm Dataquest, Apple sold the largest number of personal computers in the USA in 1993.

Motorola has lined up a number of Taiwanese computer companies to support the the PowerPC standard. Members of the Taiwan PC Consortium, including Tatung, Mitac, DTK, Umax, and Taiwan Auto Design, may make PowerPC components or complete PowerPC-based computer systems.

PowerPC may not "change your life," according to some analysts, but PowerPC chips are currently 1.4 to 4.7 times faster than Intel's Pentium, according to Byte magazine, and cost half as much.

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A new study demonstrates that Macintosh users are still more productive than those who use PCs running Windows. According to a study, from consulting firm Arthur D. Little, Macintosh is fundamentally a more productive platform' than comparable Windows computers for the broad range of computing tasks. Macintosh users completed the suite of tasks in 44%less time, and were almost 50% more likely to complete the suite of tasks correctly.

One of the main advantages of using GIS or mapping software is that reports no longer have to be tabular or merely a series of bars and pies. Reports can put the same information into the real-world form of maps that can show 'who', 'what', and 'how much' in the context of 'where'. Adding this spatial dimension to data supports better marketing decisions because organisations can make decisions based on data seen in a real-world context. Essentially, there are two ways of creating a map on a computer. One is from data files containing perhaps tens of thousands of co-ordinates defining and positioning lines, references, etc. The other is to simply draw one freehand using a mouse or tablet drawing tool. Objects represented within a map can be continuous, using vector graphical objects such as lines, or, discrete, using pixel blocks similar to those found on computer screens with graphic user interfaces. The most precise and flexible maps are produced by co-ordinate data files with a continuous vector environment. This means that they can be scaled with greater accuracy and can provide detailed information about locations. They do, however, require specific data files which usually have to be produced for each area and for specific purposes. These data files can be expensive because they are normally derived from precise survey work such as Ordnance Survey maps, postcodes, demographic data, etc which can cost well over £1000 for each data file set.

Another key factor in choosing a GIS or mapping system is the importance and type of data to be added to the map. If, for example, all you need to do is to position symbols and label them, you probably don't need a full-blown GIS. But if you need to plot data, eg, from a marketing or box-office database that includes patron addresses, demographic information such as average income per household, frequency of attendance by area, or specific names of streets and places, then you need proper links to transform your data into a visual form. These links could be as simple as being able to import and export from an external database or box-office system, or you may require tighter integration that would necessitate having a consultant or programmer produce a turnkey system for you. The actual GIS or mapping program can behave passively or actively in this process and you may find it preferable to restrict users to updating information in the database itself rather than allowing changes in the actual map view. An important thing to remember is that on its own geographical information is of limited use. You need to be able to examine it in the context of its spatial arrangement and its relationship with other data. For example, histograms, dot-density, cross-hatch or proportinal fill of average household incomes, drive times or frequency of attendance in various geographical areas can possibly help you to visually plan a more effective marketing campaign.

The use of GIS and mapping systems can give arts managers and decision makers grounds for new levels of insight, understanding and competitive advantage by providing new and easy ways to see, compare and improve the ways they serve customers and compete with other venues. However, these systems are not cheap, particularly if you want one that's powerful enough to provide detailed visual analysis of your raw data. Even if you already have a competent PC-based marketing system you may find that you will require more raw computing power to actually run a GIS or mapping system effectively. The other consideration is printing. While colour printers are becoming more affordable, they are not becoming much faster. Be aware that once you've created your maps you will have to wait some time for them to print out on most of the economical colour inkjet printers currently available. Remember...like the old Zen proverb about the man who mistook the finger pointing at the moon for the moon itself, GIS and mapping systems are not the ultimate answer to life, the universe and everything. They simply provide another useful tool in the arts marketing arsenel that can show you where to start looking and perhaps, help point the way to the answer.

Software Packages At A Glance...
There are a number of heavyweight GIS and mapping systems available with a profusion of features that work in conjunction with popular database packages and box office systems. A number of arts organisations and Select Ticketing have been experimenting with a package called Tactician although other organisations and venues have also looked at market competitors such as Atlas Pro, MapInfo, MapGrafix and MapBase. Most of these packages offer cross-platform solutions that work on standard Intel-based/Windows PCs or Apple Macintoshes and most include a fairly standard set of features and functions. Prices vary according to data modules but you won't get much change out of £1000 even for a very basic configuration. Atlas Pro, Tactician, MapInfo and MapGrafix are heavyweight applications and are used by the likes of British Rail, the Ministry of Defence and many local and regional authorities for the creation of maps and geographical information in conjunction with

popular database programs running on both PCs and mainframes. However, as mentioned earlier, to use some of these programs effectively requires a substantial investment in data files such as a postcode or other demographics database.

• **MapGrafix**
A large system with a range of optional extensions including excellent drawing tools and multilingual capabilities for budding Europeans. Works well with other systems but has no internal database. At around £3500, it's quite expensive and for the moment, there doesn't appear to be a local UK distributor. For further details contact *ComGrafix: 0101-813-443-6807*.

• **MapInfo**
Easily on par with programs such as Atlas Pro and Tactician offering good cross-platform support and built-in database. Generally, a powerful but slow all-rounder that shows its DOS heritage and remains hindered slightly by annoying copy protection. Costs around £4820 for the basic package. For further details contact *MapInfo: 0753-552530*.

• **Atlas Pro**
A major player in the mapping market with built-in spreadsheet which links database files to maps. Was the first desktop mapping system and includes query features, street mapping functions, geocoding, etc and supports a huge variety of data files and base maps. Atlas Pro for the Macintosh is £795 and the equivalent Atlas GIS for Windows is £1495. For further details contact *Adept Scientific Software: 0462-480055*.

• **Tactician**
This package is becoming a favourite amongst arts marketing personnel for two main reasons. Essentially, it does pretty much what most of the other key GIS and mapping applications can do, but arts organisations using Tactician say the company is 'friendlier' and more helpful on both a price and support level. The other reason is that Tactician was designed as a marketing system first and a mapping system second so its functionality is geared for supporting marketing needs. It's quicker than MapInfo and Atlas Pro and includes a 3-D spreadsheet for marketing analysis, street level address matching and geocoding. Weak on cartographic editing. Pricing ranges from £995 for Tactician with UK, regions, counties, 1000 town gazetteer and locations of Postcode sectors, districts and areas. Tactician with Buttons which allows for scripting and development starts at £2495 and Heavy Duty Tactician starts at £9995. For further details contact *Tactician UK: 0423-560064*.

MapEast
The Mapping Analysis Project (MapEast) in collaboration with Arts Council Touring and Select Ticketing, was designed by Eastern Touring Agency to prove or disprove some of the popular myths surrounding audience behaviour in the region. Part of the project involved identifying some software that would display the resulting data as cluster-dots within postcode sectors. As alluded to earlier, Tactician was ultimately chosen because the suppliers were extremely helpful and friendly, despite the small potential market share offered by the arts world. Having invested in the software, Select Ticketing can now offer map printing services for its customers and the project's conclusion was that maps provide a wonderful overview of the vast quantities of data that box office systems and other marketing databases manage to accumulate. The only caveat to this glowing recommendation is that mapping is time consuming, particularly when it comes to printing out colour maps, and, as interesting as GIS and mapping systems may be, they simply visualise data. They really don't do much else.

Potential Benefits Of GIS & Mapping Systems

Maps can be used to project and display information, transforming series of numbers into meaningful patterns to give you a new visual insight on your marketing data. Maps can be used to analyse:
• *Sales Planning & Market Potential*
• *Real Catchment Area*
• *Distribution Planning*
• *Market Research*
• *Direct Marketing*
• *Drive Times*

CACI Extends Mapping

CACI is currently compiling its ARTS*ACORN grouping which will add an arts component to existing postcode data based on a combination of customer history and 1991 Census information. This will be the first coding system built exclusively for the arts market and will enhance the currently available ACORN classifications. CACI has also offered to design ARTS*ACORN and make it run on all major computerised box office systems.

Along with its other services, CACI has developed its mapping capabilities for creating thematic maps and linking geographic information on people, markets and locations. CACI offers mapping services which can include information from client files or data captured at

source, eg through a box office system, and it also markets its own marketing/mapping application called InSite which is based on the commercial software package MapInfo. InSite*Maps software combines CACI's ACORN targeting classifications with up-to-date demographics and consumer market information and provides yet another way for Windows or Macintosh users to reap some of the benefits of GIS. **For more information on CACI's mapping services or InSite*Maps software, ring: 071-602-6000.**

On The Box...

West-End giant TicketMaster has decided to become a more aggressive player in the general/regional computerised box office market and will be trying to lose its current 'telephone sales only' image. As the world's largest computerised ticketing service with over 3500 clients, in the UK TicketMaster processes over 10million tickets a year. TicketMaster's own integrated computerised box office system is definitely 'ticket-driven' and provides a highly effective tool for controlling ticket inventory. It runs its own TM90+ software on rather large and slightly dated Microvax minis (see Industry Eye report on DEC) and, despite its no-charge hardware policy, has traditionally been seen as uneconomic for smaller/mid-range venues and venues outside major urban centres. TicketMaster separates its ticketing and marketing functions clearly down the middle but usually still tries to convert users to the on-line approach to ticket sales. However, this may be changing and an interesting development has been TicketMaster's acquisition of both Synchro and HEBOS box office systems. This means that as a company, they can effectively offer solutions for the high, medium and low-end venues plus a comprehensive telephone sales centre and hundreds of potential ticket-selling outlets. Obviously, this is going to be something to watch.

While it's no secret that Select Ticketing are developing PASS1 to create PASS2, few details of how this new system will change the marketplace have emerged. However, Select Ticketing has released details of its new Fund Development module which will enable the coordination and control of fund-raising activities. In essence, the module will enable users to create campaigns which act as an umbrella for development activity as well as being able to create comprehensive membership schemes and even manage 'one-off' fund-raising events. The Fund Development module can either stand alone or be linked directly to any PASS2 modules. According to Select, venues using the module in addition to ticketing will benefit from the ability to create a real-time link between actions in the box office and fund development activity. The module is said to be extremely user-friendly and reports can be evaluated against targets and

goals set by the user and monitored by the system. The module will also deal with highly complex areas such as gift aid and covenants, including taxation problems.

Following the success of the MapEast project, Select Ticketing plans to extend its own mapping services utilising Tactician. Select will also be supplying the new Profiles data files free of charge to its customers. Using PASS data capture, the idea is to create summary files which collate information from ticketing history and events and use the summary data to generate quickly reports which address key marketing issues for customers. Profile data files fall into two categories, the first generating an overall summary per patron per year and the second being founded on the new industry-standard Event Types which CACI has been collating for the proposed ARTS*ACORN project. Having generated the new data files, PASS customers will be able to run year on year activity analysis by postcode, analysis of behaviour by Event Type for postcodes, cross reference Event Type attendance against other Event Types and determine year on year changes in behaviour. The number of performances attended each year is calculated against the number of transactions in the box office in an attempt to select 'hot' attenders who are most likely to respond to last minute mailings.

Other news in the box office market, DataBox continues to go from strength to strength with new marketing-led features appearing almost daily. DataBox now offers its own version of a mapping program for simple dot-cluster analysis and the like built into the system with no need for an add-on package. At the other end of the market, a newish player called TheatreSoft is now offering another attractive box office system designed to compete directly against PASS. Encore is an entirely UK product, flexibly designed in cooperation with Victoria Palace. It's written in an extremely versatile fourth generation database language that allows rapid system modifications and enhancements and also means it can run on a variety of operating systems and hardware platforms. Encore runs on any Windows machine but prefers 80386DX or 80486SX processors with a minimum of 4Mb of RAM for sales terminals. Fileserver hardware needs to be 80486DX or Pentium running at 66MHz with at least 16Mb of RAM and a mirrored 2Gb hard disk system. Ticket printers are Gazelle TP1056BCRS or TP853BCRS and the customer and marketing databases are on-line and interactive at all times within the sales process. Encore offers either a command-line or lightpen interface for ticket selling and is a full colour system. The integrated marketing and analysis module is fully Windows-compatible. As a rough guide, pricing for a 2-user installation would be in the region of £20,000 and a 7-user configuration including for marketing kit would be in the region of £50,000. You can currently see the system running at Victoria Palace, the Old Vic, Sadlers Wells, the

Haymarket Theatre in Leicester or the Marlowe Theatre in Canterbury.

PowerPC
To The People...

It's been ten years since people began talking about the computers that smiled back at them. The second decade for Apple Macintosh computers will certainly bring a sea change in the realm of personal computing, and perhaps the most fundamental change will be the introduction of Power Macintosh computers. This new computing platform is based on PowerPC, a powerful new microprocessor that is designed to provide the foundation for the future of personal computing.

This microprocessor is the result of a sweeping technology alliance - made up of Apple, IBM, and Motorola, that was formed in 1991. This alliance called for the development of IBM's POWER RISC microprocessor architecture into a RISC chip that could be used for desktop computers. Apple chose this chip design because it combines state-of-the-art technology and the backing of major computer vendors that have a proven ability to produce chips in volumes large enough - and cost effective enough - to accommodate the massive personal computer market. Apple had four design goals when developing its Power Macintosh platform:

- Provide tremendous performance at a reasonable price.
- Create an advanced computing environment that would pave the way for new kinds of applications
- Offer a smooth migration path for both Macintosh and PC users to PowerPC processor based computers by offering a variety of upgrade options
- Make sure the new systems would be compatible with existing software and peripherals, and maintain a 'look and feel' that users would recognise.

The PowerPC family of microprocessors is built on RISC (reduced instruction set computing) technology and developed as part of the Apple, IBM, Motorola

alliance formed in 1991. Why RISC? This microprocessor design takes the approach of streamlining the internal workings of computers whereas traditional CISC (complex instruction set computing) processors - Intel's Pentium chip, for example - contain a vast number of instructions to handle nearly every task that a computer carries out, RISC processors contain only the instructions that are used most often. The result: RISC processors are built to execute these basic instructions very quickly. To handle a more complex instruction, RISC processors simply build it from its basic instructions.

Why PowerPC? Apple's decision to go with the PowerPC chip was influenced by a combination of factors. The linchpin was that IBM was willing to adapt its POWER RISC architecture - already used on IBM's RS/6000 workstations - to create a RISC-based microprocessor appropriate for personal computer users. That move provided the alliance with a known product that already had a set of application development tools that could be revamped for the PowerPC chip. And having three major companies investing in the chip was a sure-fire way to call on considerable research and development resources to produce several versions of the chip simultaneously. The strength of the alliance companies has the additional benefit of ensuring that the PowerPC chip will become a mainstream processor.

The PowerPC microprocessor family currently comprises four models, ranging in speed from 60-MHz to 80-MHz clock speeds. They are:

- PowerPC 601 - for midrange to high-end Macintosh systems
- PowerPC 603 - an energy-saving, lower-cost design for the entry-level desktop Macintosh computers and PowerBook models
- PowerPC 604 - the next level in high-performance computing
- PowerPC 620 - a very high-performance processor designed for workstations and servers

At the moment, Intel's Pentium, based on CISC technology, is the most powerful microprocessor that DOS and Windows computer vendors use. Intel insists that it is not necessary to use RISC technology in microprocessors designed for powerful personal computers. However, in benchmark tests, even the first generation PowerPC 601 microprocessors were on a par with Pentium and more than 30% faster than Pentium in floating-point calculations. The bottom line for all users is that RISC-based microprocessors will help their applications run faster than if they were running on CISC-based machines.

Not only does PowerPC out-perform Pentium, but it does so in a smaller and cooler package. Size affects the cost of a microprocessor (smaller ones are less expensive),

while heat output determines which computer models it can be used in (hotter processors need more space and electronic power, which means they are not well-suited for notebook computers). PowerPC 601 microprocessor is roughly half the size, heat output and price of the Pentium chip. Couple those advantages with the performance statistics and, in the end, the PowerPC 601 is a less expensive, more versatile personal computer chip.

The PowerPC chip also does well when compared with today's mainstream personal computer chips. PowerPC processor based machines, when running 'native' applications, offer two to four times the performance of the 68040-based Macintosh Quadra line or Intel 80486 based computers. Native applications are those which have been either originally designed or retooled to take advantage of the PowerPC chip. In benchmark tests, native applications that rely on floating-point calculations ran as much as 8 to 10 times faster than the fastest Motorola 68040- and Intel 80486-based personal computers on the market.

Simply speaking, more power means the computer does more. Power Macintosh raises the ceiling on what computers can do and is well-suited to handle power-hungry tasks. This means that many capabilities are in the hands of mainstream computer users for the first time. New collaborative communication services, including live-screen sharing (for remote proofing of documents) and video conferencing are on the agenda as well. Power Macintosh also allows Apple to expand its AV technologies, such as speech recognition, text-to-speech conversion, and voice and language processing.

The increased power of Power Macintosh computers allows both Apple and third-party developers to introduce across-the-board computing advances. The PowerPC processor-based systems open the door to advances in the user interface, progressing the interface so the interface can progress from easy-to-use to invisible. Some day intelligent agents will allow the computer to learn the users' habits and automate those tasks that the user does most often. Other improvements will include more sophisticated help systems and future advancements such as OpenDoc, an open architecture which will make it easier to share information across many computer platforms. These are just a sample of the technologies that Power Macintosh will provide. The net gain of Power Macintosh is simple, but important: it provides ample capacity for a vast number of new computing technologies.

For any arts organisation thinking of buying or updating any computing equipment, it is essential that you at least have a look at PowerPC. In the box office world, PASS will already run on PowerPC (RS6000) and the other vendors, particularly those still on older VAX systems,

better think about migrating soon. Let's face it, if users running office and marketing systems get used to the speed and comfort of systems like PowerPC, why should they tolerate slogging old technology from their box office system which could so readily benefit from improvements in speed, flexibility and ease of use?

While PowerPC will take the Macintosh platform to a new level, it's important to remember that each Power Macintosh system is still a Macintosh. Although Apple is not the only manufacturer building a computer with the PowerPC microprocessor, it is the only company that has elected to combine RISC technology with an advanced, mainstream personal computer operating system - System 7. Apple's first-generation models will appear just like other Macintosh systems, providing its users with a familiar user interface - complete with smiling computer face and all - and will not require retraining. Whether copying a file or launching an application, users will interact with the computer as they have in the past. Apple realised that developing a new platform for running applications at breakneck speed was a good idea, but ignoring the computer user's current investment was not. For that reason, Apple has worked to ensure that Power Macintosh is compatible with existing personal computer products. In tests conducted with developers worldwide during the past year, 90 percent of existing Macintosh applications - tested on an early Power Macintosh prototype - ran without a problem. Lab results indicate that these applications will range in performance from that of a fast 68030- to a 68040-based Macintosh computer. Apple realises that the world is more than just Macintosh computers. Apple and third-party vendors have made strides to ensure that other PC users can take advantage of Power Macintosh action. Insignia Solutions is manufacturing a software product called SoftWindows, which gives users the ability to run both DOS and Windows applications on Power Macintosh computers. As Alan Kay put it, "The best way to predict the future is to invent it". And with IBM and Apple supporting the same platform, it's hard to see how it can avoid becoming the personal computing platform for the next decade.

Digital Video...

Despite all the hype about multimedia, CD-ROM and interactive computing, video is still one of the most effective mediums for delivering information in a creative and accessible manner. Video is a useful selling tool for artists, companies, venues and even organisations such as RABs or the Arts Council. And, as part of any well-defined marketing strategy, a video can be used for a variety of tasks ranging from image creation, sponsorship raising, product awareness and education.

Unfortunately, a high-quality video produced by traditional methods can be extremely expensive. Even using production companies based outside central London, you can expect to pay between £1500 and £2000 per minute of screen time and a lot more if you want a proper script, film crew, lighting and flashy titles and transitional effects like you see on TV. Or, at least that's the way it used to be. With emerging computerised digital video technology, the cost of producing an extremely professional looking video can be drastically reduced putting it well within the budgetary range of many smaller and medium sized companies, galleries and venues that perhaps would never have considered video to be an option.

Digital video could revolutionise the film and video business in much the same way desk top publishing revolutionised the the print business. Just as powerful desktop computers coupled with laser printers provided more direct control, made lead-times shorter and more cost-effective and streamlined design and typesetting tasks, technologies such as QuickTime and other image compression systems coupled with hardware and software systems such as Adobe Premier and Radius' VideoVision Studio will begin to streamline both off-line and on-line video editing while making creative titling, transition and special effects tools readily available to the non-specialist user. Professional-quality video production is now finding its way onto the desktop and with the introduction of hardware/software editing suites and bundles such as the recently announced Apple Professional Video Production Solution, the days of expensive Soho-based post-production studios could well be numbered.

VideoVision Studio, along with Adobe's Premiere and VideoFusion allow you to combine full screen video with graphics and animation. The combined system works by allowing you to record raw, unedited video footage onto a hard disk array as a digital QuickTime movie. Once you've captured your video material as digital data you have complete freedom to edit bits together, apply a wide range of TV-style special effects and filters, and even add titles, graphics and photographic images. At the end of the process, you save your complete production as a full-screen QuickTime movie which you can either view on your computer screen or record directly onto video tape. One of the main advantages of digital video is that it's non-linear. Once your images are converted into digital format, the computer can treat them more or less like any other piece of data. And because VideoVision Studio is an all-digital production system, you only need to have one video deck. Traditional linear video production requires at least three video machines plus other expensive vision mixers and effects generators. VideoVision works at full PAL or NTSC video resolution and supports a video image of up to 768x576 pixels. This means that there is no loss in image quality no matter how often it is edited and the digital file on the computer retains the same quality as the original video footage.

While a digital video system costs a fraction of any of its high-end counterparts, you still need something slightly more powerful than your average desktop PC to run it on if you want to produce broadcast quality output. The best platforms to run a system like VideoVision Studio on include the Macintosh Quadra 800, 840AV or preferably, the Quadra 950 with between 24 and 64Mb of RAM. To produce industrial or broadcast quality output you also need special ultra-fast hard disk systems called arrays of at least 2 to 5Gb to avoid dropped frames and to allow for flexible editing. You'll also need a back-up storage system for archiving digital video clips which could include optical storage or DAT tape drives. And, since the VideoVision board doesn't like standard TVs, you'll also need a specialised RGB video monitor. If you simply want to explore the potential of digital video, there are a number of cheaper options available which allow you to experiment with QuickTime movies. Low-cost video capture products such as VideoSpigot are fine for short clips or grabbing images from video sources. However, if you want to emulate the facilities provided by traditional £150,000 plus video production and editing suites, you will end up spending around £10-15,000.

For most arts organisations simply looking to have a video produced, even these bundled systems are probably not an option. But, using the services of a company that has invested in this technology probably is. For example, I'm currently exploring the possibility of using digital video to produce a series of videos on each of the major box office systems and several arts venues are similarly looking at the potential of digital video for multimedia marketing and information kiosk applications. Companies such as Fusion Productions, which still offer the services of professional camera, lighting and sound crews for actually shooting video footage, can offer extremely sophisticated video packages at a fraction of what traditional production houses charge thanks to the use of digital video systems. This means that organisations can decide how much they want to spend on say, scripting, locations, etc and also whether or not they need the broadcast quality of betacam or can get by with footage shot on S-Video, high-eight or even standard VHS. Digital video can edit and produce them all and will retain the absolute quality of the original footage. And, because special effects and transitions can all be done with software, you can have as many captions, titles, pan zoom rotates and page-peels as you want...and at no extra cost.

For more information about digital video or for production estimates, contact Fusion Productions on 0892-542399.

PDAs...Who Needs Them?

Most of our visions and expectations of computer and communications technology have been heavily influenced by science fiction novels and films. From HG Wells to William Gibson, robust paradigms begin with fantasies and grand 'what-ifs'. But with the current glut of notebooks, sub-notebooks and personal organisers, many of these notions begin to look less like science fiction and more like science fact, particularly with the recent emergence of new hybrid devices called Personal Digital Assistants or PDAs. Most of us have already seen these electronic notepad-style devices in daily use by the crew of the starship Enterprise in Star Trek. But while some emerging PDAs have simply tried to shrink the existing personal computer, others have decided to boldly go where no hand-held computer has gone before.

The term PDA was coined by Apple's John Sculley in 1992 and undoubtedly, the best PDA technology at the moment is the Newton architecture used in the Apple MessagePad and the Sharp ExpertPad. This architecture has been openly licensed and new versions of PDAs combined with sophisticated communications devices can be expected from companies such as Siemens, Motorola, Matsushita and others. The main competing system is the Zoomer from Tandy and Casio based on the GEOS operating system and AT&T have built similar PDA functionality into a much larger pen-based clipboard-sized unit called the EO.

A key feature of a true PDA like the MessagePad or the ExpertPad, is its built-in intelligence and its ability to take actions that you normally perform manually and do them for you. Where, for example, notebooks and sub notebooks merely provide clever tools to help you solve problems and perform tasks, real PDAs provide intelligent assistance which actually solves problems and performs tasks for you. Real power and functionality varies considerably between PDAs and PDA 'wannabes', and appearances can be deceptive. For example, the Amstrad PenPad, which is around half the price of the Apple Newton MessagePad or the Sharp ExpertPad, may look like a PDA and may even claim to be a PDA. However, apart from its portability and the fact that it uses a rudimentary pen input system, the PenPad is simply a glorified electronic organiser rather than a true PDA.

From a consumer's point of view, distinguishing between the latest generation of electronic organiser and a true PDA can be rather difficult. Essentially, all of these devices are designed to do away with everything from your appointments diary to your post-it notes and to some extent, will store, cross-reference and sort loads of information. Most can connect with your desk-top PC, some offer an optional fax facility and you can choose between a tiny QWERTY keyboard or a pen-based system for entering data. PDAs like the Newton and Zoomer rely heavily on handwriting recognition which is good, but still not that good. The MessagePad and ExpertPad can learn your handwriting, but you do have to train them. But even when recognition improves, not everyone will be satisfied with an electronic equivalent of pen and paper. Some users still prefer the Red Dwarf approach and simply want to talk to their computer. Psion, a UK company that pioneered hand-held organisers, has explored this approach with the launch of its new Series 3a pocket computer by including a built-in digital signal processor (DSP). This processor allows you to talk to your computer and record digital voice messages and attach them to documents, reminders and alarms. While the new Series 3a won't support true voice-recognition, Psion is convinced that the real future of pervasive portable computing is in voice, not pen-based systems and in future, expects to see combined computer and telephony products with a degree of voice recognition.

Apple, Tandy, EO, Go and others have spent millions on research and development and pundits are predicting that in the not so distant future, PDAs and similar devices will be as ubiquitous as radios and no more intimidating than a Walkman. While a notebook or sub-notebook is probably more useful for most arts managers or marketing professionals, PDAs will increasingly find their place in the IT arsenal. And when wireless communication becomes more readily available, the ability to send a fax from your pocket could prove irresistible. Already Newton MessagePads are being used by various commercial companies for form-based market research, training, and communications, all of which could have application in the arts. But even if you simply use it as a general personal information system, many of these devices are well worth considering.

• *Psion Series 3a*
Perhaps the best keyboard-based organiser with large, bright screen and a variety of useful applications such as word processor, spreadsheet, PC link, graphing option and sound. Excellent value at around £329.95

• *Hewlett-Packard 100LK*
Also good though relatively expensive. Screen is also smaller than the Psion and slightly murkier. Priced at £640 although I understand that's going to come down.

• *Newton MessagePad*
True PDA with intelligent assistance and excellent external connections including PCMCIA slot, infra-red transceiver, serial port and fax option. Handwriting considerably improved on new 110 and with sleeker design telescopic pen costs around £469. The original MessagePad is now £399. The Sharp ExpertPad, which is essentially a Newton in Sharp clothing, costs around £599.

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computers for arts marketing

UpDate...
September 1993

Version 2.0   No. 2

**Produced for the Arts Council
by Michael Prochak
0580-880824**

Second Chance

Despite the dramatic fall in hardware prices over the past few years, many arts organisations still find it difficult to justify the expense of buying an adequate computer system. Second-hand machines abound and many commercial businesses are offering old equipment to arts organisations as sponsorship-in-kind deals. But how do you know if these machines are any good? Could they end up being more trouble than they are worth? When should you look a gift horse in the mouth and simply say no?

Choosing a computer system is often rather like having to choose between a Porsche and a Metro. Sure, most of us would probably love to drive a Porsche. But in reality, most of us end up driving the equivalent of a Metro. The deciding factor, for most people, isn't simply quality or performance. It's the size of their bank balance or over-draft facility. And, as various companies have proved, when it comes to PCs, you don't have to sell people what they really want, all you need to do is sell them what they think they can afford. With a bit of flashy though misleading marketing and hype, most users will do the rest, eventually convincing themselves and their friends and colleagues that although the machine they bought may be a pig to use, it's really OK because they certainly don't want to look foolish by admitting that they saved a few hundred pounds but bought the wrong computer. And even though the street price of pretty nifty and powerful computer systems has come right down in the past few

Industry Eye

Motorola has acquired the rights to modify Microsoft's Windows NT to run on PowerPC chips, according to reports confirmed only by Microsoft. But analysts are dubious about Motorola's bid to take a major chunk of the microprocessor market from Intel. In-Stat Inc. estimates Intel's Pentium and upcoming P6 processors will hold 1/3 of the market by 1997.

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Microsoft says it will "do whatever it takes" to protect its intellectual property rights in the face of Sun's WABI software, created without a license from Microsoft, which allows users to run applications written for Windows on workstations, which run up to 70% faster than most PC's. This is particularly ironic considering how dismissive Microsoft was of Apple's claim for infringement of intellectual property rights over the licensing of graphic elements in Windows in the first place.

•

The first PowerPC Macintosh is still on target to ship in January 1994. According to US sources, it will cost $2495, although rumours suggest that early versions may ship for as low as $1500. With the launch of PowerPC, Apple will for the first time have a significant price/performance advantage over any Intel-based PC, including Pentium. Significantly, most major clone manufacturers are scrambling to get on the PowerPC bandwagon. Even the all-powerful Microsoft has joined the feeding frenzy and is reported to be looking at a belated port of Windows NT for the PowerPC platform. But its current two year delay means that Apple starts as the clear favourite to supply the OS to PowerPC cloners if, as is now expected, it finally moves to license System 7 on other platforms.

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Just when you thought the acronym GUI (Graphic User Interface) had been flogged to death, along comes another consultancy-speak label for the next big thing in interfaces. STICI, or Self-Teaching Interpretive Communicating Interface, pronounced 'sticky'...(not gooey...get it?) was invented by a US-based strategic decisions consultancy to describe the new generation of interfaces appearing on things like PDAs (Personal Digital Assistants). Whether this one will stick or not remains to be seen, but I'll be looking at the whole PDA phenomenon in the next Update.

years, not all of them turn out to be the bargains dealers would like us to think they are. For example, an advisory for PC buyers in a recent New York Times warns that, as the industry shakeout continues and profit margins get slimmer, consumers should be cautious when dealing with companies with unfamiliar names, operating without street addresses, or selling machines at unusually low prices. But even with falling prices, a useful and accessible computer system can still be beyond the budgets of many smaller arts organisations. But if your budget is limited, are there any alternatives to buying new equipment or do you simply have to do without?

Interestingly enough, there are, and most of them are legal. Going back to the Porsche analogy, if you can't purchase new, you still have the option to rent, lease or buy second-hand. And, you have many of the same options when it comes to acquiring a PC. Which option you choose will obviously depend on your own individual circumstances but there certainly seems to be an expanding market in both lease/rentals and "previously owned" computers of all types and configurations. Adverts in popular computer magazines and 'Exchange & Mart' style computer shopper publications, for example, suggest that quite a number of machines are being sold by individual owners probably in the throws of upgrading. Prices of course, vary, as does the risk involved in buying from an

individual owner. But there are bargains to be had, particularly at the lower end of the Macintosh and PC range, and with a little care and diligence, you can be stroking a mouse or cursing a C:> prompt, depending on what you really want from life. Although most of these machines are sold privately, there is a growing network of dealers specialising in 'recycled' and even discontinued stock.

The price of second-hand PCs changes almost daily and there are loads of magazines specialising in this market. But remember, buying through classifieds means that you don't receive a warranty and if you buy or acquire any second-hand kit, thoroughly examine it before you hand over any cash. Check the external case for signs of neglect or outright hostility. Excessive dust or dirt in the ventilation slots is not a good sign, nor are nicks or scratches around the back which may indicate the machine has been opened without official sanction. Heat can be a problem with older PCs which don't have fans and it's worth finding out exactly how old the machine is and whether or not the power supply has been replaced. Unfortunately, old power supplies on some models tend to be like time-bombs and the odds are that eventually, with a second-hand machine, they will need replacing. Another thing to have a close look at is the screen to see if there is any sign of phosphor burn or negative image imprint of the desktop. Older PCs

can suffer from excessively loud fans and occasional screen jitters, so it's important to try out some of your favourite software to get the feel of any second hand machine. Try the keyboard and mouse if it has one and run through a few housekeeping tasks like opening files and folders, formatting disks, etc. If the internal drive is a bit sluggish in ejecting disks, that may be a sign it will need replacement soon. If you can get inside the box, examine the connectors and any add-on boards for possible damage. Loose chip modules can show up as bad memory and damaged clips can be a tricky repair job.

With the continuing emphasis on business sponsorship in the arts, many organisations are now being offered old computer equipment from companies in the process of upgrading. Occasionally, equipment on offer will still be useful and serviceable. Unfortunately, more often than not, when a company offers you a computer system that they're throwing out, you will probably end up doing the same. While many companies honestly feel that passing on old equipment is a legitimate form of sponsorship in kind, take my word for it... this is one time when it's better to look a gift horse in the mouth. Be particularly wary of anything with odd-sized disk drives, unusual operating systems, green or amber monitors and slow impac printers. If someone offers you a reasonably new 286 or 386 machine or an ink-jet

printer, you could be onto a winner. However, what you are more likely to be offered are old battered XTs, CPM machines and clattering dot-matrix or daisy wheel printers.

Like it or not, the average useful life of a bog-standard DOS-PC is now probably around 2-3 years and getting shorter all the time. Getting rid of outdated technology and replacing it with facilities that will survive in the 1990s is a tricky challenge that most arts organisations will have to face up to sooner rather than later so it pays to be careful about what you're willing to accept. If you are offered second hand kit, beware of discontinued models and particularly try to stay away from Amstrad PCWs, low-end PCs such as XTs and even some ATs, and early Macintoshes such as the MacPlus or SE. Second-hand 386 or better PCs and Macintoshes such as the LC, si and ex represent much better value and will allow you to use most of the new and emerging software. They will also be faster, more reliable and probably easier to use and upgrade.

EIS...Information At Your Fingertips

Executive Information Systems are becoming increasingly important to businesses of all kinds. However, despite the increasing number of organisations using EIS, many are still struggling to understand the special characteristics of such systems and how best to exploit them. EIS concepts and software are no longer limited to use by senior executives but are now spreading through a variety of organisations embracing many different types of users, from finance and planning to sales, marketing and customer service. The spread of EIS concepts and tools is also being driven by the appearance of EIS-functionality on other software products. The result, from a user's point of view, is a blurring of boundaries between EIS and related areas such as decision support, multi-dimensional spreadsheets, database access tools and office automation.

The whole point of an EIS is to find, focus on and analyse critical information, regardless of its original source. And, it does it in such a way so that the user requires absolutely no PC-knowledge. EIS provides an apparently intelligent front-end or *dashboard* that collects, filters, analyses and presents information from a variety of sources. Typical sources of data are report files, relational databases, or other specialist applications already in use such as finance or payroll programs. With a good mix of all available information sources, users can slice and dice across data dimensions at will, performing meaningful ad hoc analysis, creating graphics, calculating ratios and trends and targeted drill-downs through hierarchies of information. For example, larger theatres or venues with box office systems such as BOCS or PASS plus additional management and finance support systems could use EIS to deliver specific marketing or sales information based on all the information in all of the organisation's systems. The intelligent 'drill-down' of EIS can deliver relevant, accurate and easy-to-use information at the touch of a button without the need for complicated programming, scripting or pre-designed macros. Some commercial businesses already use EIS to access databases with over a billion records with instant response to all queries.

Most EISs today are either document or data-driven providing charts, exceptions and scrolling from any data source. Many newer EIS packages are *knowledge-driven* providing a system that analyses data and decides intelligently which method will be used to display the information. Most EIS packages now allow user to mix computer systems and architectures and use them on most network configurations. The are also designed to allow non-programmers to build information systems

quickly and easily. One of the best systems that would be interesting for larger BOCS and PASS users to explore is the New Commander EIS from Comshare. It runs on IBM compatible PC platforms running Windows 3.1, OS/2 or Macintosh System 7. It also works with DEC VAX/VMS, IBM MVS/TSO, VM/CMS, RS6000, Fujitsu, etc.

The main disadvantage of EIS for arts organisations at the moment is that packages are still relatively expensive. However, EIS is an area that larger companies such as SpaceTime and Select should be investigating as perhaps another means of delivering information and integrating into other computer systems.

For more information about various EIS packages contact:

Acuity Management Systems	**0344-360001**
Cognos	**0344-486668**
Comshare	**071-222-5665**
European Software Publishing	**0628-24353**
Holistic Systems	**081-566-2330**
Intelligent Office:	**081-528-9864**
Information Resources	**0628-826911**
Pilot Executive Software	**0932-569944**
IMRS UK	**0625-586222**
Inphase Software	**0344-873311**
Softklone	**071-833-8041**
Planning Sciences	**081-879-3828**

Seeing Is Believing...

In the world of performing arts management, the computer is now ubiquitous and no one disputes the value of a marketing database or a computerised box office system. However, in visual arts management, things have been rather different. Many museums and galleries do use computers for accounts, word processing and perhaps managing the odd mailing list. But the creative impact of computers on visual arts management hasn't been as profound as it has in the performing arts. Part of the problem has been the fact that no one has yet come up with a PASS-like computerised box office equivalent of a visual arts management system. An even greater problem is that the visual arts deals with visual images and until recently, most computers weren't all that efficient at handling images easily or economically.

For example, the Arts Council, Crafts Council and probably every RAB holds a slide collection of artists'

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work. Even if these collections are managed with the aid of a computer, chances are that management will only extend to holding lists and details which then need to be cross-referenced with the actual collection of slides which are physically held in boxes or special filling drawers. If anyone wants to view a set of slides they need to look up the relevant information, find the actual slides and then look at them on what is usually a rather primitive light-box contraption. So what is the alternative?

Although some systems are better than others, it has been possible to store images on a computer for some time now. There are even a number of database programs that support and store images which can be sorted and searched more or less like text data. However, this technology hasn't been used that extensively in the visual arts because of perceived difficulties in converting existing visual images and slides into digital images of acceptable quality and the excessive amount of disk storage space that's required to hold such images. Another factor, of course, has been cost. Not only do most visual arts departments not have the right sort of computer system to support visual database archiving, they also don't have the budget for expensive slide scans to convert their images into digital format.

A solution, which bridges the gap between the worlds of silver halide and silicon imaging, is Kodak's PhotoCD. PhotoCD images are created by scanning photographic film-either positive or negative-to create a photographic quality digital image. For example, a 35mm slide which would normally occupy around 18Mb of storage space, can be compressed to less than 5Mb through the lossless compression routines used to create PhotoCD. Image files are written to compact disk by a Kodak bureau and typically cost around £2 per image. Obviously there are discounts for bulk commercial transfers. While more images can be added to the disk in future 'sessions', it cannot be over-written or reused. Typically you can scan around 100 images onto each PhotoCD, but numbers will vary depending on the amount of data contained in each image and the number of 'sessions' recorded on the disk.

From a management point of view, the real beauty of storing images on PhotoCD is their accessibility. Depending on requirements, PhotoCD images can be accessed and viewed via a PhotoCD player, a standard TV or a personal computer system. For example, a PC configuration would ideally include a 486 processor, 16Mb of RAM, 25Mb free hard disk space, DOS 3.3 or later and Windows 3.0 or later plus a PC-compatible CD-ROM drive. A minimum Macintosh system should use an LCII or better, 8Mb of RAM, 30Mb free hard disk space, System 6.0.5 or later and a Mac-compatible multi-session CD-ROM drive. Additional software packages for manipulating images such as ShoeBox,

Kudo, Fetch, etc are available from Kodak, Aldus and other third party suppliers.

While Kodak's Master PhotoCD format, which is the consumer version that anyone can utilise to convert their own snaps to CD-ROM, is very good indeed, for serious visual arts applications organisations should consider the Pro Master format. This allows larger format images to be transferred to PhotoCD at photographic quality so for example, instead of just 35mm, you could include 120mm and 5x4" film formats. Kodak also offers a Portfolio PhotoCD format which enables images from PhotoCD disks or other electronic file formats such as TIFF, PICT, etc, to be combined with graphics and audio in a branched environment. If images used are at TV resolution rather than full photographic resolution, then up to 800 images can be stored along with up to 72 minutes of CD-quality audio. This makes PhotoCD a prime candidate for use in what I recently christened in the FT as 'multimedia marketing' which could have implications for the performing arts as well as the visual arts.

The final advantage of converting slide and visual arts collections to PhotoCD is the fact that the actual compact disks contain a gold layer in the laminate which, because it will never oxidise, means that the disks and the images they contain, have a life-expectancy of over 50 years. For larger museums collections and archive, Kodak is also introducing a Professional PhotoCD Image Library system which provides an automated 'jukebox' that can hold up to 100 PhotoCD disks. Using special software, you can use key words to search the library, view low-resolution 'thumbnails', and then select images to be viewed, edited or printed at full resolution.

At the moment, the Crafts Council and a few arts organisations such as AXIS are actively exploring the possibilities of Photo-CD. However, PhotoCD, and related multimedia technologies, remain developments that the Arts Council and every RAB could benefit from and could begin to adopt very soon.

For further information on Kodak PhotoCD and how it can be integrated into visual arts management systems contact:
Herald Communications Ltd: 071-222-8515

Next Update...
Personal Digital
Assistants...
What are they and do
you need one?

FOREWORD

We asked Michael Prochak to prepare this report in order to stimulate greater awareness
of the many ways in which computers can assist in arts marketing. The report was not
intended to provide definitive guidance on the systems which were best suited to specific
purposes. The views on particular hardware or software are his own and not necessarily
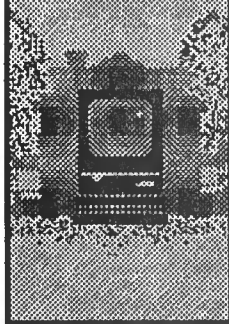endorsed by the Arts Council.

As arts organisations differ in their circumstances, their resources and in the ways in
which they want to use computers, it would be prudent when considering the acquisition
of a new system to seek specialist advice and obtain up-to-date information on models and
prices.

PETER VERWEY
Senior Marketing Officer
Arts Council of Great Britain

Contents:

"Nothing is so dangerous as being too modern.
One is apt to grow old-fashioned quite suddenly."
—Oscar Wilde

If a week is a long time in politics, it's an even longer time in the world of computers and information technology. No matter how hard one tries to be *'modern'*, or at least current, when discussing developments in the computing world, one inevitably grows old-fashioned quite suddenly. When this report was originally commissioned by the Arts Council, it was envisaged as a vehicle for compiling and reviewing the extent to which particular tasks in arts marketing could be helped or improved by the use of computers. After two major revisions which have attempted to keep it modern, it has grown, like Topsy, into a much more thorough, though still not entirely comprehensive, reference manual which should provide a valuable tool for a variety of arts professionals involved in marketing the arts.

Essentially, this document is intended for the marketing manager and administrator who, while not knowing a lot about the technical capabilities of computers, is keen to understand how they may be used for marketing purposes. To this end, the report provides a basic industry over-view, a description of the main areas of marketing where computers can offer support and potential for development, and a basic vocabulary and understanding of computers and their uses which may enable them to make informed decisions about the future development and implementation of their own marketing/information strategies. While the report may seem heavily biased towards the performing arts, many of the marketing solutions mentioned could be adapted for museums and the visual arts as well. However, at the moment, there is no marketing equivalent of, say, the computerised box office, available for museums or the visual arts in the UK.

This document is **not** intended as a comprehensive *DIY* manual, nor is it meant to provide answers to *everything you ever wanted to know about computers but were afraid to ask*. Even if it purported to be so, it
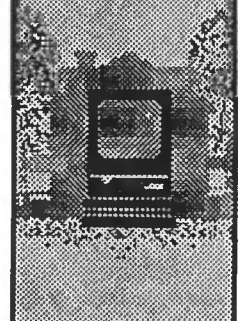
OverView:

would run an even bigger risk of becoming old fashioned quite suddenly. There is no single *DIY* solution that can be provided by a single report that will be ideal for every arts organisation. And while this report may help individuals make more informed decisions, in nearly all cases, arts organisations will still have to bring in a consultant or perhaps a developer to help them select, set-up and initiate a computerized management/marketing system. It is also important to point out that this report concentrates almost exclusively on *personal computer* applications and solutions. It does not address the needs of the kinds of organisations that may require mini or mainframe installations, nor does it attempt to offer advice on related issues of larger multi-user systems, networking and communications.

Although dealt with in various sections throughout this report, it is important to stress at the very beginning that for any computer system to be effective, it is essential that the arts organisation has clearly thought out the purpose for which it is to be used. This does not simply mean deciding to buy a computer, but involves everything from assessing current systems, outlining information needs, exploring software options, assessing staff and training needs, assuring back-up, maintenance and after-sales support, to ensuring the system is powerful and complete enough to address current tasks while remaining flexible enough to be expanded and developed to cope with possible future needs as well. It also involves knowing when, as a user, you can develop or modify a particular application yourself, and when it is best to call in the services of a consultant or developer. For example, most word processing, spreadsheet, basic presentation and some elementary *desk top publishing* applications can be learned from manuals and documentation or short training sessions. But most applications involving a database, networking, advanced statistics or computerised box office system will inevitably require assistance from a consultant/developer and also a significant amount of training and after-sales support.
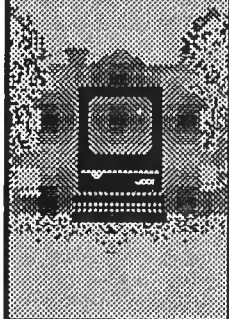
Because the industry is in a constant state of flux, avoiding the *PC scrap heap* is not always an easy task. Most first-time buyers have little idea of what really matters and what is simply sales hype, and unfortunately, there is no fool-proof solution for choosing the right system for the right job. As mentioned earlier, the computer itself isn't the only thing you have to worry about. You'll need software, at least one printer, additional peripherals such as connectors, etc, consumables such as disks, paper, ribbons or laser cartridges, a maintenance contract and insurance, and last but by no means least, a reasonable amount of training. In order to ensure that you get the best advice possible, be sure to:

- always seek independent advice and never rely solely on advice from a dealer or a consultant that is connected with a particular company or supplier
- always look at several different systems
- actually try the system you have in mind
- if the salesman tells you the system will do what you want, ask him to prove it by demonstration
- talk to other users and find out how systems work in *real world* situations
- don't buy the cheapest system you can find unless you are absolutely sure it will do all of the things you want it to
- always ask about discounts and package deals

While it is unreasonable to expect arts administrators to learn everything there is to know about computer systems, it is useful to understand the rudiments of the jargon and at least have an idea of where each of the various systems fit into the current marketplace. A brief summary of the general range of personal computers one is likely to encounter plus a glossary of related terms and jargon is provided at the end of this report.
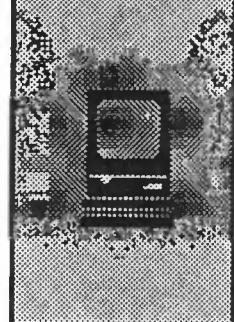
OverView:

New hardware and software applications suitable for use in arts marketing are being developed all the time. And while this current revision has been used to include new developments such as *optical mark readers* and *geographic information systems*, I have little doubt that it will still grow old-fashioned quite suddenly. But before it does, hopefully you will have acquired a slightly better grasp of what computers can do and how they might be able to provide marketing and administrative solutions for your own particular organisation.

Michael Prochak
February 1991
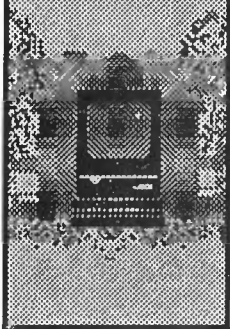
At the end of February, 1989, the Marketing and Resources Department of the Arts Council commissioned a formal study on the extent to which particular tasks in arts marketing can be helped by the use of computers. The brief for this study stated that it should include a review of the range of software available and the hardware with which it was compatible, costs, an assessment of their strengths and weaknesses, value for money, reliability, back-up services and how they might interface with other systems. The primary marketing applications on which the report was to focus included:

1. Ticket Selling
2. Compilation of Database to cover:
   • Subscribers
   • Mailing list members with an indication of interest or access to car and other possible factors
   • Companies to show involvement in party bookings, corporate sales, sponsorship
   • Other organizations as potential for party bookings and as recipients of publicity material
   • Delivery points for bulk distribution of publicity material
   • Press and Media Lists
3. Record of seat sales and box office income for particular productions to show these by price, day of the week, point in the run, season, type of sale, etc.
4. Financial control purposes to help track marketing expenditure against budget
5. Word processing facility to enable mailings to be sent to target groups
6. Analysis of self-completion audience survey forms
7. Any other purposes which the researcher considered appropriate

In addition to these main points, it was suggested that recommendations on applications relating to the following areas would also be useful if it were possible to include them within the scope of the research:

8. Population and demographic data by postal district and local authority areas of a defined catchment area
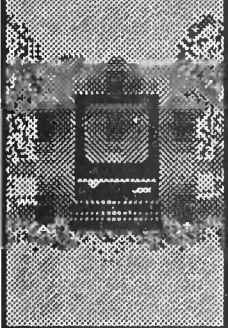9. Anti-Clash diary to assist arts organizations in forward planning
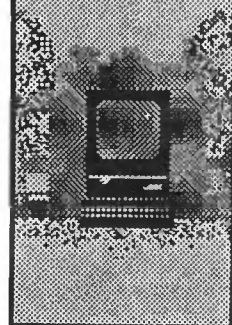
Preface:

10. Financial control purposes to help consortia keep a record of expenditure measured by members to assist with invoices and also record advertising expenditure where the value might determine agreed levels of discount

Methodology:

This report was produced after extensive journalistic research and hands-on evaluation of both hardware and software systems pertinent to arts marketing. Either full or evaluation copies of most of the software mentioned were obtained and reviewed. Leading arts marketing practitioners were also interviewed regarding their own personal requirements and desired facilities that might ideally be made available through more creative computerization. Generic trends and converging technologies which are simultaneously affecting the computer industry as a whole were also taken into account. When ever possible in this report, technological information and software detail is directly related to specifically designated marketing tasks and strategies. In keeping with the original Marketing and Resources Action Plan, this report seeks to provide a means of disseminating information on the availability of existing marketing software packages, highlight areas for potential software modification or development, de-mystify much of the mythology surrounding hardware compatibility, and identify further potential training, installation and demonstration requirements. However, this report, of necessity, concentrates more or less exclusively on the use of personal computers specifically for arts marketing. Without effectively writing a book, it would be impossible to explain in detail all of the potential areas where computers could be of assistance. Some guidance is provided on potential specifications for systems and hardware, but again, it is not possible to examine in detail all of the possible solutions for computer systems, printers or even software applications. This report simply seeks to provide a working awareness of what personal computers can offer in the area of arts marketing and to provide contacts and a reference for further investigation.

Personal computers now effect everyone in every walk of life. Just over fifteen years ago, a computer the size of an average sitting room would have been needed to provide the same computing power as today's desktop 80386 PC. Apart from that, there is nothing, regardless of what certain dealers or consultants might tell you, that's particularly miraculous or even mysterious about personal computers. In fact, like an automobile or a television, it's not even necessary to know all the technical details or even how a computer works to be able to use one efficiently and productively. But a passing acquaintance with the industry's *buzz words* can help you make more sense out of a dealer's sales pitch. Technologically, the computer industry is advancing and improving at such an incredibly fast pace that over a relatively short period of time, the impossible has become feasible and the feasible has become routine, so that building a marketing or management information system is now relatively simple...providing, of course, **you have defined in detail the exact problems you wish to solve**. That, unfortunately for most arts organizations, remains the most difficult task of all. Although personal computers have greatly expanded our abilities to solve problems and handle information quickly and accurately, they can do so only if information requirements are carefully specified and defined by the humans who use them. And as personified by Douglas Adams' ultimate computer *Deep Thought*, in the *Hitch-Hiker's Guide To The Galaxy*, the enigma is often not how to achieve the right answers, but rather how to discover the right questions. As I have said many times before, nowadays, nearly any personal computer will do nearly anything you want it to do...depending on the amount of time, effort, money and hassle you're willing to spend to get it to work. Hardware and software, in the main, have evolved to a sufficient level of sophistication to allow for a considerable degree of personal choice. In spite of the marketing hype to the contrary, it is *not* absolutely necessary to buy one particular system over another just because a dealer or a consultant likes it best or even because it has a well-known and influential corporate logo. A computer system simply needs to be powerful enough to do the tasks required and easy enough to be used effectively by the typical sort of person or persons with whatever level of computer-literacy is likely within a given professional sphere. It's always worth
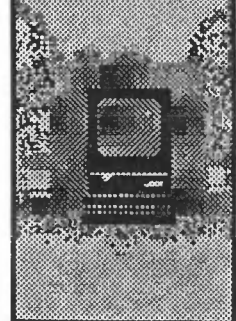
Introduction:

remembering that today there are only two main areas of conformity which are absolutely essential when choosing a sensible computer system:

- **Data Compatibility, or simply the ability to exchange and use information on a variety of different kinds of machines**
- **Expansion Potential and Connectivity, or simply the ability to be upgraded as technology advances and the ability to communicate with other systems**

As the arts become more business-like, matching an organization's corporate strategy and its information system strategy is of paramount importance. If these strategies are matched correctly, significant competitive advantages may be achieved. If, however, there is a mismatch, the information systems strategy can actually work against the corporate strategy resulting in added expense and inferior performance. Although the arts, as an industry, may have been slow to accept the the need for computerization and the establishment of *Management Information Systems*, personal computer systems (PCs) are now acknowledged to be an essential productivity tool.

Personal computers may be used in the arts to help organizations change the basis on which they compete by helping to reduce budgetary problems in areas of staffing and specialized support services such as design, ticketing or market research and planning. In effect, the personal computer can be used either to improve efficiency or as a means of introducing innovation. Simply using a personal computer as a personal productivity tool will help reduce overall costs of administration. More innovative use of personal computers in areas such as box office management and marketing may enable an arts organization to acquire a substantial competitive advantage and thus achieve superior performance in the marketplace. In the long term, all functions of arts management can be computer enhanced to some degree. The important issue here, is to identify the key functions which will provide the most benefit to arts organizations and marketing personnel enabling them to operate effectively.
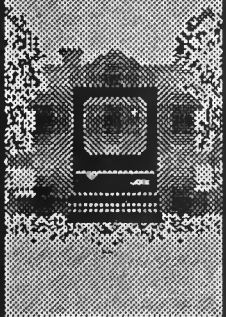
Report Focus

Tasks & Functions	Text Processing	Box Office Systems	Dedicated Marketing Applications	Databases	Bulk Mailing Packages	Spreadsheets	Presentation Systems
Consortia Management	●			●		●	●
Anti-Clash Diary		●		●			
Demographic Data		●	●	●		●	●
Analysis of Self-Completion Survey Forms			●	●		●	●
Financial Control		●		●		●	●
Sales Record by Price, Day, Point in Run, etc		●		●		●	
Press & Media Lists	●			●	●		●
Distribution Delivery Points	●	●		●	●		●
Party Bookings		●					
Targeted Mailing List	●	●	●	●	●		●
Subscribers		●					
MailMerge	●	●		●	●		
Ticket Selling		●				●	
Programming Required			●	●		●	
Generic Software Application	Text Processing	Box Office Systems	Dedicated Marketing Applications	Databases	Bulk Mailing Packages	Spreadsheets	Presentation Systems

Please Note:

All prices and information in this report are considered to be correct as of April, 1990. While every effort has been made to ensure accuracy, pricing and systems specifications may be subject to change and modification.

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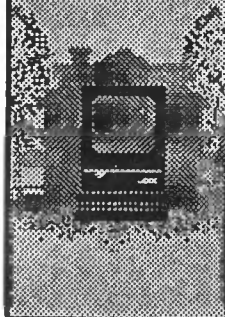
Using Personal Computers In The Arts:

Arts managers traditionally purchase personal computers for a variety of applications which can roughly be described in terms of generic software products. Typical uses of personal computers in the arts include:

• *Text Processing:* Includes word processing for correspondence, reports, and publicity material, mail-merge facilities for personalizing responses. Also covers new design facilities available on personal computers such as typesetting and desk top publishing.
• *Spreadsheets:* Includes a wide range of packages for producing numeric reports, financial and budgetary statements, accounts, and analyzing market research data. They also allow for detailed financial planning and 'what if' calculations.
• *Databases:* These provide important functions including data storage, retrieval and reporting which are invaluable for arts organizations requiring mailing lists, sponsorship information, etc. Although it is possible to use some database packages for financial applications, in the arts they are not generally utilized as financial or book-keeping systems.
• *Graphic Design & Presentation:* As personal computers have become more sophisticated, they have allowed users to design and draw charts, illustrations, and other graphics that formerly needed to be done out of house by professionals. Talent, and an eye for design, however, are still important for good results.
• *Computerized Box Office Systems:* This is one of the most important applications available to performing arts and mixed programme venues. Until recently, such technology was only affordable by very large or national venues. However, there are now excellent PC-based systems available at prices smaller venues can begin to afford.

Although personal computers can be used for scores of other applications, these represent the main areas of usage in the arts at present. Marketing activities, particularly market research and communications are areas experiencing considerable interest at the moment as is the overall concept of networking and communications. A great advantage to users today is the way the computer industry is beginning to integrate many of these applications and functions so that information can be quickly and easily passed from one part of the system to another or even to an entirely different system.
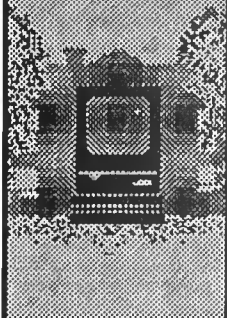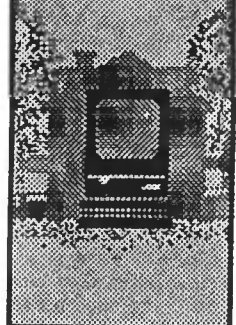
Using Computers For Arts Marketing:

Marketing has traditionally been regarded more as an art then a science. And while facts, figures and analysis play a supporting role, flair and a kind of sixth sense have always been the stuff of marketing excellence. In recent years, the need to get closer to the customer and to achieve greater sensitivity to the market needs has placed a higher premium on better and more useable information. That, and the fact that computerized systems offer new ways of interacting with the marketplace, should have established a leading role for information technology in marketing. However, for the most part, this has not happened.

While those working in the arts tend to think that the corporate world is far more advanced in areas of marketing and technology, it is interesting to note that in general, the evidence is that marketing has failed to capitalize on the potential offered by information technology. A recent survey* suggests that almost 70% of marketing and systems managers feel that they are not investigating the potential of information technology enough and that the absence of an overall framework for developing systems for marketing is one of the major inhibitors constraining organizations. Only a quarter of marketing managers and around 31% of systems managers have a documented strategy linking computer systems opportunities with marketing objectives. The consequence is that systems and data islands are created and even where information about customers does exist, there may be no mechanism for marketing to benefit from the resource. A similar percentage can not tap into customers' demographic or industrial classification while over half of the marketing departments surveyed are unable to access information about account profitability by product line. Despite the growing importance of marketing information to organizations, nearly 40% of the sample still run their operation without marketing database systems.

What should be significant in this survey for arts organizations is that the number one culprit responsible for the poor uptake of the potential of information technology was a *poor appreciation at board level* of the potential of computerized marketing and information management. Poor training for marketing staff in the use of computers and a poor understanding of marketing by IT

The Use Of Information Technology In Marketing-Business Intelligence/Oasis

Using Computers For Arts Marketing:

departments, consultants or suppliers also figured high on the list. Seventy per cent of marketing managers say that they have no staff with formal training in the role of computer systems in marketing. While a new class of *commercial technologist* is needed who is equally happy in the business, marketing and computer systems environments, its absence at director level goes a long way to explain the failure of boards to wake up to the fact that information technology has radically changed the nature of marketing.

Although computers may not be able to provide all the functions and facilities put forward in the various arts marketing *wish lists*, it should be stressed that *most* of what is actually required is currently possible, depending on the type of hardware/software system configuration and overall budget that is available to the arts organization. This also means that computers can effectively be used for marketing tasks by organizations not directly involved with ticket sales and a variety of types of system and configurations are possible. It should also be stressed that most of the generic types of software that can produce these requirements can't produce them unless they are set-up or programmed to do so. Apart from dedicated software applications, most packages such as databases or spreadsheets are a bit like a Lego set...all the pieces are there, you just have to know how to fit them together. And if you want to build the Eiffel Tower, you'll probably need expert assistance.

Essentially, personal computers can be used effectively in arts marketing for four basic and specific tasks:
- Collecting Information
- Storing Information
- Processing and Analyzing Information
- Presenting Information

These four tasks can, in turn, be applied in a more focussed manner within five generic application areas:
- Box Office Systems
- Dedicated Marketing Software
- Databases
- Spreadsheets
- Presentation Systems

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Using Computers For Arts Marketing:

Personal computers are particularly suited for storing and analyzing large amounts of data and are capable of providing detailed specified reports. Sorting and retrieving information becomes easier and by gathering related data together, specific information can be distilled and accessed with minimal effort in a very short period of time. In the best of all possible worlds, data should be regarded as anything...text, numbers, pictures, etc...and, personal computers should be the ideal vehicle for sorting and retrieving it. Ideally, it should also be possible to administer your subscribers, contacts, client and programme information, diary, mailshots, financial planning and other user-defined applications. However, personal computers and their various software applications, in general, expect data to fit into regular forms, structures or categories. In the arts, we are often faced with the problem that information doesn't always fall into neat little categories that remain consistent and identical throughout. Therefore, the analysis of arts market research and similar data always presents an awkward problem. Any software or application, to be useful, needs to offer considerable flexibility and allow the user to say, add extra variables, extract a sub-set of the data for further analysis, or convert the data into a different format. In the area of market research particularly, many commercially available packages for personal computers offer facilities such as smart tabulation and sophisticated graphics but fail to provide the user with all important house-keeping facilities or easy links with existing systems. Presentation of information is also increasingly important in marketing and the ability to integrate statistics and market research data into easily comprehensible graphics and well presented documents and reports should be a major consideration when deciding on a computer system for the arts.
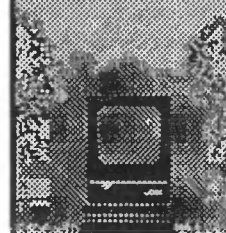
Text Processing:

While word processing is not specifically a marketing application as such, it is none the less an important tool for many marketing-related activities. The ability to produce well presented documentation, form letters, questionnaires, personalized letters, etc is one of the most essential elements of any arts computer system.

The word processing, or perhaps more correctly, the text processing market, is becoming increasingly crowded with a number of software developers aiming their products at more closely defined groups of users. For example, if you frequently send out large personalized mailings, you will probably need a different range of facilities from say a journalist. If, however, you only want to produce the occasional letter or memo, you probably need a simpler and more easily remembered package than a frequent business user doing more complicated tasks. Ideally, a word processor should allow you to switch on the machine and turn out a reasonable letter in half an hour at the most, even if you have never used the package before. It should also enable you to produce complex work using most of the major features on an occasional basis without taking a year long training course. Most users prefer the WYSIWYG, or *what you see is what you get* approach, and nowadays, with the swing towards GUIs (Graphic User Interfaces), most of the best packages offer this approach. The best word processors allow you to see all of your formatting on screen and will also give you considerable typographic and lay-out capabilities, often rivaling the features found in Desk Top Publishing applications. Page lay-out and design features plus the ability to save files in a variety of formats is extremely important for arts marketing and word processors chosen should also include good capabilities for mail-merge. Additional features such as spelling checkers, thesaurus, and graphic handling are also useful and will undoubtedly be found in most of the best packages.
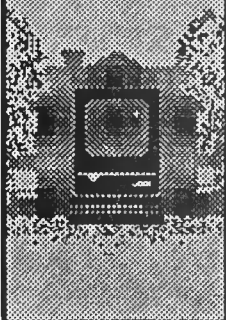
Recommended Word Processing Packages:
Microsoft Word *(Word, Word for Windows or Macintosh version)*
AMI *(IBM-compatible only)*
WordPerfect *(IBM-compatible &Macintosh version)*
MacWriteII *(Macintosh only)*

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While word processing packages have come down in price, most full-featured programs will still cost over £300. And since word processors are only as good as the printer they are used with, perhaps it's worth just a brief word on what is available. The best option in terms of performance and quality is the laser printer, which produces type-set quality output and can also produce excellent graphics. The best laser printers are *PostScript* compatible, which basically means they have a sophisticated type-setting language which allows all typefaces and graphics to be re-sized and manipulated. PostScript printers are essential for proper DTP, but tend to be expensive. Other laser printers, which often utilize Hewlett-Packard compatibility, rely on an outline font system for creating letters and graphics. While not as flexible from a design point of view, for general business applications, these printers produce excellent quality documents and are not nearly as expensive as PostScript printers. Laser printers now start at under £1000 and print at speeds of between 4-12 pages per minute. They are extremely quiet and are the best choice if you can afford them.

An alternative to laser printers for extremely good quality and quiet operation are the new generation of ink jet/bubble jet printers such as the Hewlett-Packard DeskJet Plus or the new range of Canon-based printers. These printers produce nearly laser-quality for a fraction of the price and are good for low-volume work where presentation is important. However, like laser printers, running costs can be relatively expensive. They aren't particularly fast, so probably aren't suited for large runs of mailing labels, but at prices starting at around £295, they are worth considering.

Dot matrix printers are probably the de facto standard for PCs and are available in a variety of configurations. Basic printers now offer both a draft and NLQ (Near Letter Quality) mode and can print extremely fast. A variety of 24-pin printers can produce quality approaching ink jets and lasers, but being impact printers, they are still rather noisy. Dot matrix printers start at around £200 and are particularly suited for long runs of mailing labels.
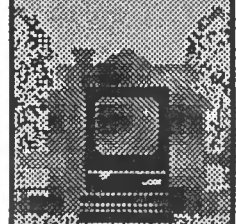
Text Processing:

Daisy wheel printers used to be the obvious choice for quality printing, but are gradually being phased out. Working essentially the same as electronic typewriters, they can produce very good quality output. However, they are noisy, slow, and being entirely mechanical, likely to go wrong often. In most cases, not a good option.
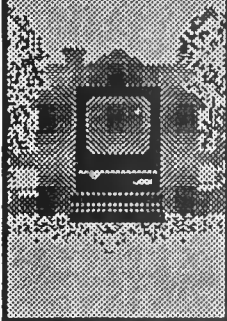
Desk Top Publishing

Desk Top Publishing or DTP is essentially a means of combining words and images on pages to produce high-quality documents or publications in-house using a system based around a personal computer and a laser printer. Each DTP software package currently available deals with text and graphic information in its own way, and each provides different features and capacities. DTP covers everything from making your own forms and questionnaires, leaflets and press releases, right up to producing professional quality publicity materials and programmes. While not every arts organization will require all of the facilities offered by dedicated DTP packages, it's worth remembering that in marketing terms, appearance is everything. Because DTP is now commonly used in the business world, consumers' expectations are now higher then they used to be when it comes to presentation and print. Therefore, a quality word processor with some DTP facilities is the minimum requirement for any arts marketing operation and a full DTP system, if affordable, is always preferable. It should be noted, however, that to produce good looking documents requires more than just a good DTP package. You also need a good eye and basic design skills as well.

Recommended DTP Packages:
Aldus PageMaker *(IBM-compatible & Macintosh)*
Ventura *(IBM/Windows & Macintosh)*
Quark Xpress *(IBM/Windows & Macintosh)*

Name & Supplier	Price	Max Doc Size	**FEATURES** Spell Check	MailMerge	Multi Docs	Style Sheets	Macros	Word Count	Columns	Graphics	Memory	Disk Drive	Comments
Word 5 Microsoft 0734-500741	£395	Memory	●	●	●	●	●	●	●	●	256K	Twin Floppy	Powerful multifunction package with extensive DTP-like facilities and good laser support
WordPerfect5 WordPerfect 0932-231164	£435	Disk Size	●	●	●		●	●	●	●	256K	Twin Floppy	A solid standard full-featured package with some graphics capabilities and good text handling
AMI Pro Samna 071-587-1121	£425	Disk Size	●	●	●	●	●	●	●	●	640K	Hard Disk	Mac-like package running under Windows with lots of DTP-like features, but requires 286 machine
Q&A Write Symantec 0628-776343	£160	Memory	●	●		●	●	●	●	●	384K	Twin Floppy	Flexible and easy to use with good printer control
Volkswriter 3.2 Lifetree 0494-772422	£169	1Mb	●	●		●	●	●	●		256K	Twin Floppy	Excellent budget package with most needed functions and an excellent spell checker
MacWriteII Frontline 0256-463344	£175	Disk Size	●	●	●	●		●	●	●	800K	Twin Floppy	Powerful and easy to use package providing extremely flexible text and graphic control with many DTP-like facilities
WordStar5 MicroPro 081-643-8866	£399	Disk Size	●	●	●	●	●	●	●	●	512K	Hard Disk	Upgraded version of an extremely old standard that you either love or hate
Locoscript Locomotive 0306-740606	£34.90	Memory	●								256K	Single Floppy	A bare-bones package for the Amstrad PCW series which isn't really intended for most 'real' office applications
PC Write Sagesoft 091-284-7077	£99	Memory	●	●	●	●		●			320K	Single Floppy	A good budget PC system which allows for a considerable amount of customisation

Word Processing

Box Office Systems:

Potential Uses:
- Ticket Selling
- Ticket Printing
- Market Research
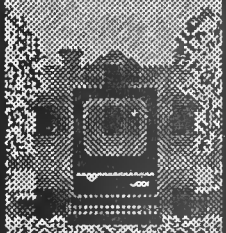- Financial Control
- Database Compilation

UK Product Range:
- BOCs
- HEBOS
- Ticketmaster UK Ltd
- RITA
- PASS
- Synchro Sytems Ltd
- Complete Computer Services
- Abbey Data Systems Ltd
- Tor Systems Ltd
- TABS

Prices:
Prices range from around £8000 to well over £70,000

Best Buy:
PASS at around £22,000 for a two terminal installation. Standard IBM compatible PC-based with superior marketing features offering both flexibility and power. A cut-down non-ticketing system exclusively for marketing is possible, but at nearly £8,500 for a single-user system, PASS is probably too expensive for even the largest consortium or agency. Second choice might be HEBOS at around £13000 for a two terminal installation running on standard 386 PCs.

Theoretically, the benefits derived from the installation of a computerized box office system are easily identified. Too often in the past, outdated or over-stretched ticketing and marketing systems have prevented venue management from planning ahead with any degree of confidence and accuracy. Today, the survival and prosperity of the performing arts in all of their forms begins at the box office and requires a radical look at the way profitability is organized and analyzed. However, deciding, in theory, that a computerized box office system would be useful for increasing income and efficiency is the easy bit. Selecting the best system to fulfill a variety of requirements on a cost effective basis is far more difficult.

At the moment, there are approximately half a dozen different computerized box office systems to choose from in the UK with the market primarily being dominated by three major systems: BOCs, developed and marketed by Space Time Systems, PASS, from Select Ticketing UK, and Ticketmaster, a majority owned subsidiary of Associated Newspapers. British Telecom's RITA, Abbey Data Systems Ltd, Synchro Systems Ltd, TABS and TOR Systems Ltd continue to fight for shares in this expanding market offering a range of systems targeted on a variety of venues. A new competitive low-cost PC-based system called HEBOS is also coming on stream with what could turn out to be a promising system for smaller and middle-scale venues.

BOCS:
BOCs (Box Office Computer System) was developed between 1979 and 1981 by Space Time Systems and claims a market lead in domestic computerized ticketing systems. BOCs has been installed at London's South Bank Centre and the system can be found in over 70 venues, such as the Barbican and the National Film Theatre, throughout the UK. BOCs is a real-time multiuser ticketing package which includes associated accounting and reporting facilities designed to streamline box office and related marketing activities. It runs on any VAX or MicroVAX system manufactured by Digital
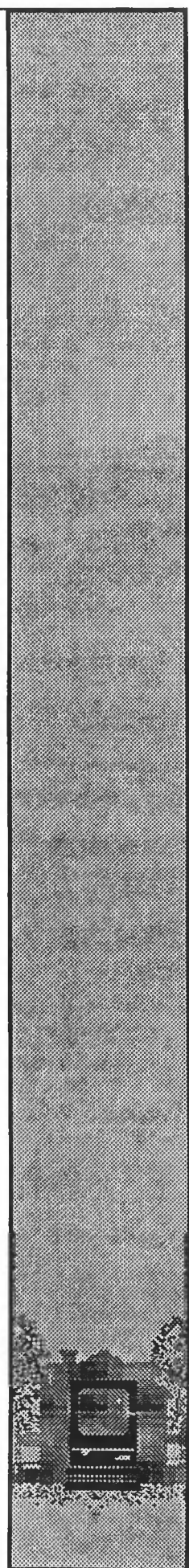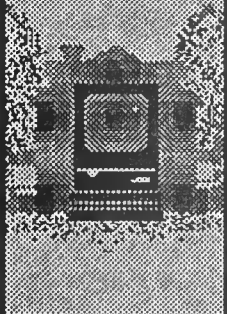
Box Office Systems:

Equipment, one of the world's largest computer manufacturers of minis and mainframes. The software itself is written in standard FORTRAN. As a computerized box office, BOCs is an extremely powerful system and an excellent implementation of an interactive system which closely matches the needs of the end users with the functions performed by the computer. Indeed, in 1982, BOCs was judged to be the most user friendly British ticketing system by Computing magazine and in 1986 won a Design Council Award.

BOCs is a very good ticketing system. However, as a marketing tool, it has limitations. At the moment, communication with other PC systems is difficult and there is no satisfactory means of transferring say, sales or patron details, into a separate marketing database. BOCs provides a facility called the BOCs Journal which records all transactions performed on the system, but unfortunately, the current level of transactions performed can't provide the level of sophistication currently being demanded by many arts marketing professionals.

Space Time Systems have introduced a new facility called BMS (BOCs Marketing System) which is supposed to enable venues to build up a patron history or profile while also providing a means of streamlining mailing lists by special interest. BMS promises some flexibility in defining criteria and a report generator which will enable marketing information to be extracted on an ad hoc basis and to be displayed in formats meeting individual needs, including full-colour graphic displays. However, recent reports from the BOCs user group indicate that the implementation is still far from complete and current performance is not regarded as satisfactory. A stand alone BOCs system can cost well over £40,000 depending on the power and configuration required, although the market has become so cut-throat that there are certainly bargains to be had from shrewd negotiation.
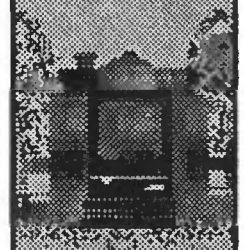
TICKETMASTER:

The development of Ticketmaster, which is not really in the same league as the other systems mentioned, was begun nearly 15 years ago by computer programmers in the USA and now boasts installations in over 34 major North American cities including New York, Los Angeles and Chicago with clients like Madison Square Gardens, Radio City and the Houston Astrodome. It is essentially a ticketing agency rather than a box office system and when it originally opened in London, there was an attempted merger with Keith Prowse, which ended rather disastrously. Afterwards, Keith Prowse went back to their manual method of selling tickets and have only recently begun to computerize their whole operation. Currently, Ticketmaster's installation in London is processing 3 to 4 million tickets per year for 13 London and Southern venues. As an in-house ticketing system, Ticketmaster hasn't really established itself in the UK market in the same way BOCs has although as a ticketing bureau, it is a major competitor for First Call. Ticketmaster provides a West End-centred bureau service called Viewticket which provides a view-data link with over 200 branches of W H Smith Travel as well as other agents allowing access to seating plans for theatres and concert halls throughout the UK when booking tickets.

One of the main advantages of Ticketmaster is the relative cost of setting up a system. Subscribing venues are supplied with PCs, ticket and report printers, and communications kit including modems and multiplexors which allow them to communicate with a central computer via British Telecom lines. The rather expensive and extensive computing power needed to run such a network is operated by Ticketmaster themselves seven days per week from a computer centre in London. This main system consists of a Digital 11/84 and 11/44 with 9 Megabytes combined main memory and 2 x 300 Mb storage discs. At the moment, Ticketmaster is only used extensively in West End theatres with little up-take from regional venues outside of central London. The reason for this, reported by those who have considered installing Ticketmaster in the regions, is that desired marketing facilities are virtually non-existent and the ticketing software, which has been re-written in their own operating system, somewhat sacrifices portability.
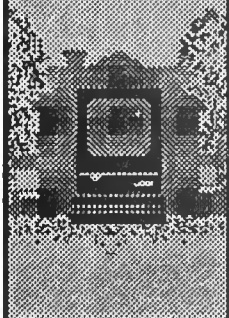
Box Office Systems:

PASS:

Until recently, the choice of a box office system was relatively limited to BOCs, Ticketmaster, or RITA and their prohibitively high prices meant that only the larger national-level venues could ever hope to afford to install them. Although reasonably adequate as ticketing systems, all three of these options were extremely expensive, (often in excess of £70,000) very inflexible, and totally unable to provide the same facilities as or integrate with other free-standing management and marketing information systems. However, a personal computer-based system called PASS (Point Admission Selection System) has established itself in the UK offering a reasonably priced box office facility, even to smaller and middle scale venues. PASS was developed in the USA by Select Ticketing Systems and claims to be the result of 32 work years of development. PASS is based on modified IBM-PC compatible hardware and supports from one to two hundred workstations. Being a PC-based system means that all facets of an organization's information can be made available on a variety network configurations providing integrated up-to-the-minute data needed to make sound marketing and management decisions. The system has also been designed to utilize many user-friendly features such as a light-pen and is fully compatible with other PC-based software.

PASS is provided on specially modified ACER IBM-PC clones. A very basic singel-terminal system would consist of:

- *640K ACER PC*
- *45Mb Hard Disc with built in auto-backup tape drive*
- *Paradise Basic EGA card*
- *3-Comm Etherlink Card (non-standard)*
- *BOCA Micro Ticket Printer*
- *Light Pen*
- *Custom PASS Software*

In addition to the box office system, an additional laser or ink jet printer would be advisable for report printing and word processing. PASS offers the advantage of an all-in integrated system capable of running the box office and running all other potential management information systems. It is fully capable of transferring data to other programs and has its own built-in mailing list/mail-merge system

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capable of producing personalized direct mail shots. The system is fully up-gradable and expandable ensuring that users are not locked into obselesence. After sales support and service is currently being offered by UK distributors Select Ticketing of St Albans and includes a full 24-hour hot-line and call-out facility.

The main advantage of an IBM PC compatible-based box office system is that all other departmental functions such as financial control, general administration, word processing, marketing, etc, can also be performed on similar low-cost systems.

As mentioned earlier, PASS is an excellent ticketing system and is unrivaled as a marketing tool. PASS provides 32 ways of splitting categories for sort and search groupings and can easily establish links and relationships within lists. ACORN and other such data can be analysed and PASS includes the facility to specifically research queries such as 'where did you hear about the show' or 'are you a party-booker'. PASS also provides a detailed customer history instantly telling you who bought what when, and even why if so desired. There are 11 standard reports formats built into the system which cannot be changed but can be added to if desired.

A complete two-terminal PASS system, including hardware, software and peripherals, is likely to cost in the region of £22,000 depending on quality of printers and software extras. Running costs would basically be the cost of ticket stock and stationery items. Additional maintenance agreements and insurance should be added to running costs plus any additional staff training deemed necessary. UK distributors for PASS generally require new purchasers to budget for staff induction and training sessions as part of the over-all package. PASS provides far more features than most arts marketeers will ever realistically use and is an excellent choice for a ticketing/marketing system. However, for non-ticket selling applications, an equally good marketing/mailing system can be built with almost any reasonable database package.
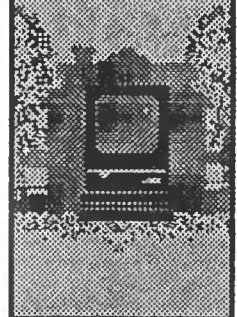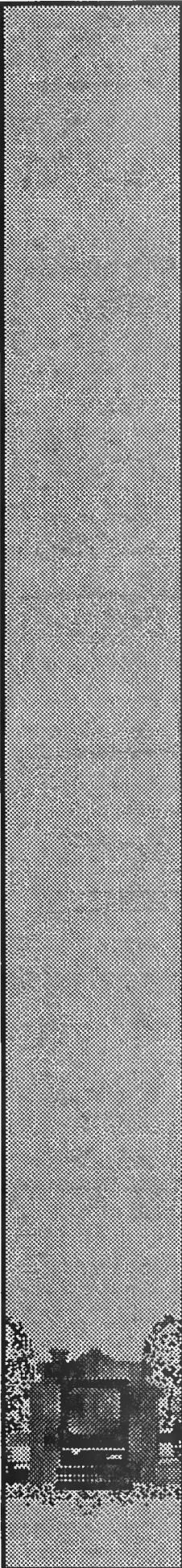
Box Office Systems:

RITA:

RITA (Real Time Ticketing and Administration), is another PC-based box office system developed jointly by British Telecom and the Royal Shakespeare Company. It was originally intended to provide a cheap ticketing system for smaller venues and was designed to run on the BT Merlin line of PCs. However, many RITA users are less than satisfied with the system and many users, like the Arts Council's Regional Marketing Officer in Newcastle, have changed them for systems which are more flexible for both ticketing and marketing purposes. As a cheap box office alternative, RITA isn't really all that cheap. Depending on the configuration and extras, one can easily pay over £12,000 for a single system. Like many other box office systems, RITA bundles an accounting system, limited mailing list functions and rudimentary word processing. And, like most box office systems, these facilities are significantly inferior to other commercial software designed to perform these kinds of tasks on a normal PC. RITA is further hindered by BT's insistence on selling it on their own versions of PC-clones which are neither competitive in terms of price nor performance. As a marketing tool, RITA is limited and is incapable of some basic functions, such as tracking credit card bookings, personalized mail-shots, etc, now required by arts marketeers.

TABS:

Conventional wisdom has it that one of the main advantages of a computerized box-office is that it prints tickets on the spot and eliminates the hassle and considerable expense of buying in pre-printed ticket stock. Theatres don't have to pay for unused tickets and they save time that used to be spent manually, and often inefficiently, reconciling both cash and tickets after each performance. So, as the competition in the computerized box office arena continues to hot up, it is rather surprising to see a new entry that not only supports pre-printed tickets, but actually advocates their use over computerized ticket printers.

The Theatre Accounting and Booking System (TABS) from Theatre and Leisure Computer Services Ltd, was developed over the past two years in conjunction with several of the company's theatre customers. It is designed to run on high powered, but reasonably

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low-cost computer systems which together with ancillary equipment, can be individually configured to each theatre's specifications. TABS is designed to operate in two modes. Like other conventional computerized box office systems, it is capable of printing tickets at the time and point of sale. But the preferred method marketed by TLCS is using the system in conjunction with pre-printed advance booking tickets. The main argument used in selling this approach is that normal computerized box office systems "have a high risk level in the eventuality of a power cut or break-down". TABS, we are assured, enables theatres of continue to sell tickets even in the event of a power cut and details of these manual sales can subsequently be fed into the system to update the accounting and statistical records. Perhaps this particular style of marketing has something to do with the fact that TLCS is essentially a ticket printing service, supplying pre-printed ticket stock to over 100 UK theatres venues, together with several hundred amateur theatre and festival customers.

The TABS system itself is a UNIX-based system written in LPI Cobol and is supplied on an INTEL 80386 processor with 2Mb of RAM and a 40Mb hard disk. Tape stream back-up systems are optional extras as are ticket printers but three days of on-site training are provided as part of the installation price. The intricacies of the UNIX operating system, which can make MS-DOS seem as friendly as the Care Bears, are hidden from the user behind a rather disappointing and lacklustre tabular-style interface reminiscent of the worst aspects of dBASEII. And while the menu driven command structure still displays a number of annoyingly primitive features such as case-sensitive text entry and rather unforgiving data entry screens, the system does manage to respond reasonably fast. TABS may provide many of UNIX's multi-user capabilities and allow up to 40 users per system, but its designers should have taken more notice of what state of the art UNIX platforms such as the Sun and NeXT workstations are doing with friendly and attractive graphic user interfaces. TABS also comes with VPIX, a utility which provides a complete MS-DOS compatible environment within the UNIX shell that can run normal PC applications. A basic TABS system with two screens would cost around £11,680. Full maintenance and service agreements are available for around 8% of the total system value for the first year and around 12% from the second year. TLCS does not offer a 24-hour hotline service for TABS, presumably because theatres can continue to sell tickets manually.
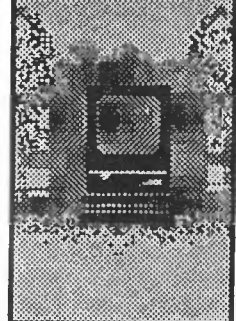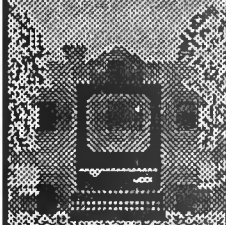
Box Office Systems:

TABS includes a basic mailing and marketing module capable of generating a basic patron mailing list describing type of patron, types of mailing, patron interests, etc and can do post codes and mailsort. Provision for capturing patron details at point of sale isn't particularly sophisticated but TABS can be linked to bar code swipes and links with credit card agencies such as PDQ. TABS accounting will please most traditional accountants because it more or less exactly duplicates the traditional dry and boring methods of accounting including cash books, audit trails, etc.

HEBOS

While PASS manages to provide most of what users want at a price that is marginally cheaper than many other available systems, it still isn't all that cheap. Many small to medium sized venues still simply can't afford a workable system. What many of these venues want, and what the market has seemed unable to provide, is a system offering most of the power and ease-of-use provided by PASS running on a reasonably standard personal computer costing less than £10,000 per workstation.

In 1989, a small innovative software company called Information Education Ltd (IE) began to develop just such a powerful but low-cost PC-based box office system for the Hackney Empire Theatre. After about a year of systems analysis, joint meetings and programming, HEBOS (Hackney Empire Box Office System) was installed and used continuously in the theatre's telephone sales office. Four months later after various bugs had been ironed out, a ticket printer was installed and the system went into full-time use in the front box office where it has been working successfully ever since.

One of the advantages of HEBOS, which may make it a system to watch, is that it's a software-based package. Since it runs on a fairly standard 80386 IBM-compatible PC, venues can shop around and buy whatever computer system the like and then buy the box office software to run on it. IE has also done a lot of research on the 'human interface' aspect of computerised box office systems. HEBOS is a 'point-and-click' system using a standard 'mouse' to move a cursor around on the screen to point to the seat or

transaction required. Unlike the light-pen or touch screen, which can lead to arm-fatigue and obscures the screen when making a selection, using a mouse allows for the monitor to be positioned where both the customer and the box office staff can see it clearly. The seat price under the cursor is always displayed on the screen and as a booking is made, a rolling total appears. Colour coding then allows customers to know at a glance which seats are still available. Bookings can be done by seat position or by number of seats required. Box office staff can click on any unavailable seat to instantly obtain the latest customer or agent information about bookings for the production. As with most other systems, HEBOS only prints tickets when they are sold and the system can use an expensive dedicated ticket printer or a more standard, less expensive ink jet or dot matrix printer.

HEBOS claims to offer many of the features of systems such as PASS including easy pricing, discounts, concessions, daily reports, and customer data. IE is currently developing two new modules which will take the basic data captured at the point of sale and use it to provide the fullest possible marketing functionality. Report data can be converted into tables, edited, amended, manipulated or graphed by the user. Being a PC-based system, data can be easily exchanged between various standard applications and HEBOS offers label printing, text editing facilities and the ability to print personalised letters as well. HEBOS was also designed to output data in the right format for entry into most major accounting packages. But perhaps the most interesting thing about HEBOS is the price. The Box Office System software alone is around £3000. A complete one-screen system running on a standard 386, 20MHz PC with 4MB of RAM and a 65Mb hard disk, complete with an SQ850 ink jet printer, training, etc, comes to a grand total of £6710 or £13530 for a two-screen system.

IE offers a full range of training and support services although with all major transactions shown on screen, HEBOS is very easy to use, even for part-time or occasional staff. A paid help-line is also available and IE will arrange for 24-hour guaranteed hardware replacement.
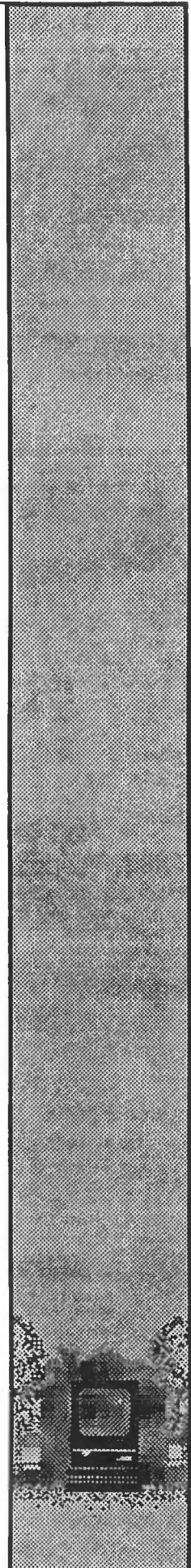
Box Office Systems:

Others

As technology and software evolve, creating cheaper box office systems will become more feasible and already several arts marketeers and computer developers are working on prototype box office/marketing systems. At the moment, these are probably in what the computer industry would term 'beta' versions and could not be recommended as adequate reliable alternatives to existing products. However, it would not be unreasonable to expect a cheaper, PC-based system to be up and running and available within the next year or so.

Conclusion:

Despite the inevitable marketing hype, no single computerized box office system currently available in the UK can provide everything that every theatre or venue could possibly want in a ticketing/ marketing system, although PASS comes a lot closer then the rest. HEBOS, when it delivers its full marketing module, could represent a good second choice and is already particularly good value for money. At the moment, several computerized box-office suppliers are bending over backwards to under-cut the competitions' prices and for the foreseeable future, there could be some pretty amazing bargains to be had.

While it may be possible to purchase a cheaper personal computer system which is adequate for general administration, marketing and information management, it is not possible to purchase a particularly cheap box-office system in the UK based on a flexible PC standard. In a specialized area such as computerized ticketing systems, much more than in the case of simply buying a business computer, the over-riding factor in choosing a system is bound to be cost. Size and turn-over of a venue are also considerations when selecting a system, or even deciding if a computerized box office is really necessary. It is worth remembering that several of the box office systems mentioned have hidden costs for things like site licenses, etc, so always be sure you are comparing *like with like* when shopping around. It should also be mentioned that several companies and consultants seem to be spreading a good deal of mis-information concerning their competition so be sure to check facts for yourself rather than relying on second-hand gossip. The market is still wide open for someone to develop a genuine low-cost, user-friendly personal computer-based box office package coming in at under £10,000.

(See Appendix IV for features & functions to look for when choosing a box office system)

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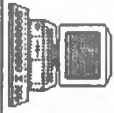
| Name & Supplier	Price Per Single System	FEATURES										Comments
		Ticket Printing	Best Seat Offer	Credit Cards	Credit Card Swipe	Block & Party Bookings	Patron Details	Mail Merge	Sales Profile by Show/Time	Subscriptions	Fast & Easy GUI	
BOCS SpaceTime 071-836-9001		●	●	●	●	●	●	●		●		*BOCs has a good track record, but their technology is in need of a major update...one of the disadvantages of being an early contender*
RITA British Telecom 0532-423000	Prices currently vary considerably owing to stiff competition. See text and appendix for approximate pricing.	●		●			●	●				*Not a good choice for a variety of reasons, such as the creaky BT-badged hardware, poor service and slow upgrades*
PASS Select Ticketing 0707-377771		●	●	●	●	●	●	●	●	●	●	*Currently the all around best value and best performing system on offer in the UK...as well as the fastest and friendliest*
Synchro Synchro 0782-711111		●		●			●	●		●		*A system with possibilities since it can be customised and is UNIX-based*
TABS TLCS 021-552-5689		*Pre-Printed Tickets*		●			●					*A missed opportunity for a low-priced system and an unattractive implementation of UNIX*
Tor Tor Systems 0782-744755		●		●			●					*Too many promises with too few results... system details difficult to come by*
TicketMaster TicketMaster 071-379-44444		●	●	●		●	●					*TicketMaster is essentially a West-End style ticket agency service and should not be considered as a regional box-office system*
HEBOS IE Ltd 0782-281643		●	●	●		●	●	●	●	●	●	*A fairly new offering showing great promise. Particularly good value for money for smaller venues*

Box Office Systems

Dedicated Marketing Applications:

In broad terms, *Dedicated Marketing Applications* could include some available box-office systems, but for the purpose of this report only non-ticket selling applications will be included in this category. Dedicated marketing tasks which can be carried out by personal computers include:

- market research
- questionnaire generation
- self-completion survey analysis
- sales and contact tracking
- mailing lists
- demographic targeting
- telephone marketing and analysis

Dedicated marketing software has usually been developed primarily for the commercial sector and will, in most cases, require some modification for effective use in the arts. It can include any number of the commercially available statistical, modelling, or geographical information systems packages which are too numerous to examine individually or in great detail. This section does, however, attempt to provide a representative sample of the sort of application that is currently available. Many manufacturers have begun to hype Marketing, Sales and Service (MSS) systems to the accompaniment of various trendy management gurus preaching the born-again cult of the customer. Products which help organisations gather, track and analyse sales and marketing data are being promoted just as industry and the arts are waking up to the value of information...particularly customer information.
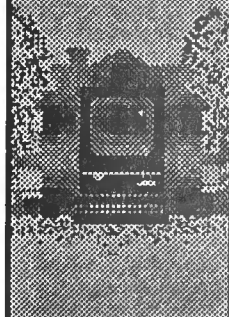
Dedicated Marketing Applications:

Market Research Software:

Potential Uses:
- Questionnaire Generation
- Self-Completion Survey Analysis
- Statistical Analysis
- Audience Research
- Demographic Profiles and Segmentation
- Target Leads
- Direct Marketing Research and Telephone Sales Leads
- Trends and Forecasting
- Mapping

UK Product Range:
- SPSS
- SNAP 2
- QPS
- InSite
- AutoRoute
- MapGrafix
- MapInfo
- *Databases such as FileMakerPro, Reflex, etc*

Prices:
Prices range from £245 to well over £2500 per package depending on configuration. Some packages also require additional hardware enhancements in order to work properly, which can add another £1000 quite quickly.

Best Buy:
QPS from Market Research Software Ltd which runs on a standard IBM compatible PC and costs £245 for a starter pack for analyzing up to 500 questionnaires containing up to 20 questions. A close second is SNAP2 from Mercator Computer Systems which costs £695 for a basic system which also runs on a standard IBM compatible PC. Both of these systems are expandable both in terms of features and cost. AutoRoute and MapGrafix are also worth a look for mapping systems for market analysis.
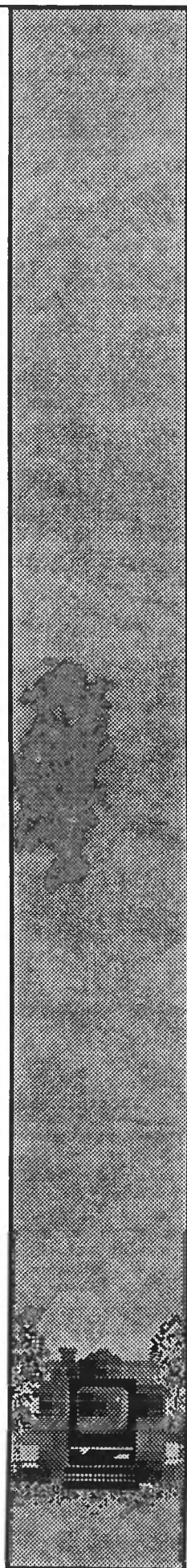
Dedicated Marketing Applications:

The main purpose of market research software packages is to turn research data into clear, comprehensible decision-making information. They offer the possibility of consolidating all steps in the market research process by providing a single solution for the acquisition and definition of data, the process of analysis and the preparation of final reports and materials for presentation. Many of the available programmes can be used for questionnaire design, data entry and editing, frequency counts as well as tables and also for the conversion of tables to a suitable format for export into many well-established spreadsheet, graphics and statistical packages. Some provide an *open system* which allows created files to be inspected and modified with a word processor and generated by or exported to other programmes.

SPSS:

SPSS/PC is one of the commercial market leaders in serious data analysis and provides a sophisticated statistical package which includes facilities for graphics, forecasting and a variety of reporting systems. Like most software packages of this sort, SPSS is essentially a database which is fully integrated within a group of software products allowing users to organize, analyse, display and chart large quantities of data for market research, sales analysis, statistical quality control, etc. SPSS was originally developed for use on main frame computers and still suffers from much of the inelegant *look and feel* often associated with ported over products. However, since its introduction in 1984, it has become one of the most popular commercial data analysis packages available for PCs.

SPSS allows you to process large data file of up to 200 variables and the number of observations or cases has no built-in limit. Data entry screens are set up by users and the forms on the screen can be more or less identical to the paper questionnaire and allows for validation and verification of information, multiple response, etc. SPSS provides extensive facilities for modifying data and files and you can match and merge multiple files in a variety of ways. Particularly useful for arts marketing research include facilities for creating files of summary statistics for specific groups. By today's standards, SPSS's charting and graphics capabilities are rather primitive

looking and not really a major selling point. However a nice feature of SPSS is its *Mapping* module which provides a complete map of the world broken down to the level of British counties, ITV areas, districts and post codes. Survey data and other demographic information can be produced in map form with shadings to indicate results.

Although SPSS is extremely powerful and feature-laden, it is probably impractical for most arts organizations for two important reasons. The first reason is cost. A full-blown SPSS package with all modules will cost in excess of £2345. This puts it well over the budgets for market research of even the largest arts organizations, although a central agency could be created to act as a clearing house for statistical and survey analysis, the investment could probably be justified for a national service. The second problem is the actual hardware. Although SPSS claims to run on a *standard* IBM compatible PC, it is extremely memory hungry and requires additional hardware add-ons such as maths co-processors and accelerator cards and still really runs best on an up-market 80386 machine with a very large hard disc. Documentation, though ample, is extremely poor and trying to run SPSS on a network could prove to be annoyingly slow.

SPSS is now also available for the Apple Macintosh and can be used in either it's traditional PC mode or in a more friendly and accessible mode which makes full use of the Macintosh user interface. The Macintosh package is probably more sophisticated than its PC counterpart since it has undergone a more thorough re-write to be able to take advantage of the Macintosh interface and more extensive reporting facilities. SPSS also runs marginally faster on a Macintosh and will also be better behaved in a network environment then the PC version. It is also considerably cheaper.
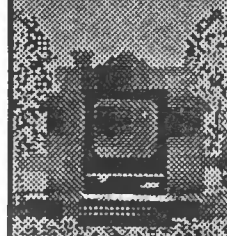
Dedicated Marketing Applications:

SNAP2:

Perhaps a better option for arts organizations with PCs is a program called SNAP2, which is very similar, although not as feature-laden as SPSS. Originally developed in 1981, SNAP2 has recently been re-written to accommodate the rapid advances in personal computer technology and the increasingly sophisticated demands of users. SNAP2 provides facilities for up to 65000 variables with up to 125 codes per variable with an option to specify a duplication mask. Questionnaires are generated to match input screens and there are full cross-tabulation features including percentages, filtering and weighting of data, ranking results, and user defined reports. SNAP2 is also compatible with many other popular applications and can provide automatic links to packages such as Lotus 1-2-3, SuperCalc, etc. Like SPSS, SNAP2 has a number of modules which can be bolted on as required providing graph and charting facilities, a computer assisted interviewing system, file transfer and a bulk mailing system. Prices for a basic system start at £695 for the software which will run on a basic IBM XT/AT compatible, preferably with at least 640K RAM and a hard disc, although SNAP2 will run on a 512K twin floppy system. SNAP2 supports dot matrix, daisy wheel and laser printers.

QPS:

Perhaps the most accessible and easiest IBM-compatible market research package to use for the arts is QPS, or *Questionnaire Processing System*. QPS presents a somewhat more congenial face to the user then many of the other packages discussed, providing a uniform appearance which makes ample use of windows, menus and coloured background and typography. QPS can be used for questionnaire design, data entry, frequency counts, tables and tabulations and will also convert data to suitable formats for exporting to many well known spreadsheets, databases and statistical packages. QPS is particularly suitable for arts organizations in that it assists in the actual questionnaire design process by acting as a sort of intelligent scratch pad. Questions and responses can be entered in any order and then moved or changed as desired and an automatic numbering facility keeps libraries of questions for immediate access in new surveys. During actual data inputting, QPS provides validation, routing and backtracking which

is suitable for interviewers in live situations as well as for batch input from paper documents. QPS can also accept data in column format for quick keying of large surveys. QPS has the added advantage for arts organizations in that it probably requires the least formal training since it was originally designed for use by researchers and clerical staff. QPS runs under a wide variety of computer systems and a full implementation is available for IBM compatible PCs with 640K RAM and hard disc. At £245 for a Starter Pack providing analysis for 500 questionnaires with a maximum of 20 questions, QPS is probably the best value PC package in this category.

InSite:

Another system which looks rather good is a package called InSite from CACI Marketing Analysis. It's a PC-based system which can store not only local market information but also a companies own data. InSite incorporates an extensive database of demographic, economic, market research, retail and administrative information. Available data includes all information currently maintained on CACI's own marketing database as well as key geographic boundaries ranging from local authority and post code through to ILR reception areas, shopping centre catchement, demographic statistics including mid-census population updates, and ACORN and workforce area reporting plus a powerful mapping facility. Unfortunately, a package complete with hardware, software, data and mapping facilities could cost nearly £20,000. Recently, CACI has been demonstrating the potential uses of this mapping system linked with the PASS box office system. Data collected in PASS can be transferred and mapped with quite impressive results.

Other Options:

It should be pointed out that many report-oriented database packages such as Reflex or FileMakerPro will work just as well for most arts marketing survey tasks as a dedicated piece of software. I have successfully designed questionnaires and analysed large surveys with FileMaker. It is easy to use, easy to import and export data, and particularly flexible in terms of printed reports. It is also quite a lot cheaper then most dedicated survey or statistical packages.
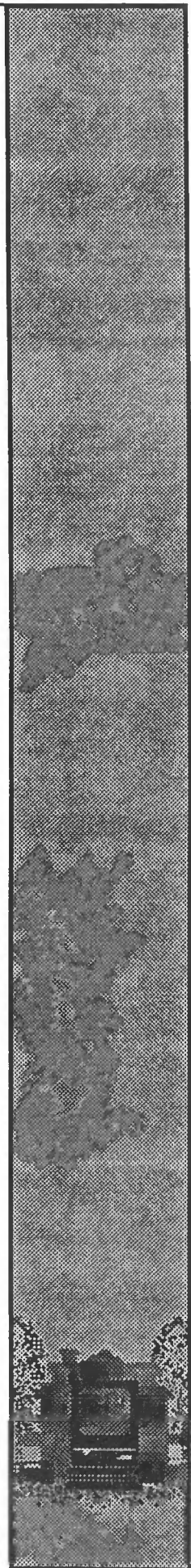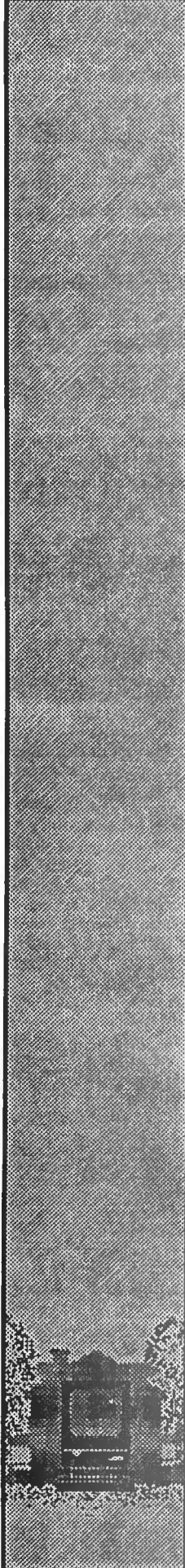
Dedicated Marketing Applications:

Graphic Information Systems:

Graphic Information Systems (GIS) are dramatically changing the way marketing professionals manage spatial information and can be adapted to suit a wide variety of applications. 'Intelligent' mapping provides a dynamic and efficient method of capturing, managing and analyzing geographical data which is typically used by organisations such as local authorities, development agencies and health authorities. In the commercial world, GIS systems are now being integrated into the work of market researchers, distribution managers and corporate planning departments. GIS systems, which combine digital mapping with multi-layered database information, provide a powerful and effective means of dealing with complex data. Historically, however, GIS systems have traditionally been limited to mainframes or high-powered workstations which tend to be both expensive and cumbersome. But with the emergence of powerful, easy-to-use PC-based packages, the use of GIS systems could become nearly as common as the use of word processors or databases.

Unlike many graphics packages which provide basic decorative maps, personal computer-based packages such as MapGrafix, AutoRoute Plus, and MapInfo provide a comprehensive and flexible GIS application which provides all of the necessary tools for creating, editing, displaying and outputting fully functional maps and integrating visuals with database management systems. This means that descriptive data can be related to specific geographic locations and the intelligence can be derived from a simple flat file such as a spreadsheet or from a more sophisticated relational database management system. These newer PC-based GIS systems aim to be easy to use and are relatively low in cost compared to comparable systems running on mainframes or workstations.

Resource allocation is a major area where GIS systems are being used by marketing and research units to perform socio-economic assessments, or to analyse census, political or market demographics. GIS systems can be used to over-lay postcode information covering specified areas of the country onto a map and can plot all the points within a certain driving distance to a central point of venue. All

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postcode regions which fall within this area can then be overlaid giving an instant picture of likely sales or marketing territory.

GIS systems offer enormous opportunities in marketing, particularly in the arts where the crucial thing is to target markets effectively. GIS systems used in conjunction with other databases and marketing systems can provide users with the ability to accurately target specific sectors of the population on the basis of their age, employment status, average earnings, artistic preferences, etc, and then to illustrate the results graphically on a computer as a basis for qualitative and quantitative analysis.

Recommended GIS Packages:
AutoRoute Plus   *(IBM-compatibles)*
MapGrafix   *(Macintosh)*
MapInfo   *(IBM-compatibles with Windows/Macintosh*

Scanning and Optical Character Recognition:
In the past year or two, digital scanning came of age and grew out of its graphics-only straitjacket. Prices have fallen and the quality of the technology has improved to such an extent that it is difficult to think of an application field that could not make valuable use of it. In the past 12 months alone, *Optical Character Recognition* , once only available through expensive dedicated hardware systems, has been one of the major technological breakthroughs with a broad range of flat-bed and hand-held scanners which recognise virtually any font in any combination of page layout and orientation. Obviously, this time-saving technology has implications for a variety of arts marketing activities and should be explored by all arts organisations and support agencies.

Optical Character Recognition (OCR)
Ever since people started using computers, they've dreamed of a painless and effective way of inputting useful bits of printed text into word processors or other applications without having to wrestle with a *qwerty* keyboard. But while personal computers, as they say in the lager adverts, are good, they're not that good, and fantasy
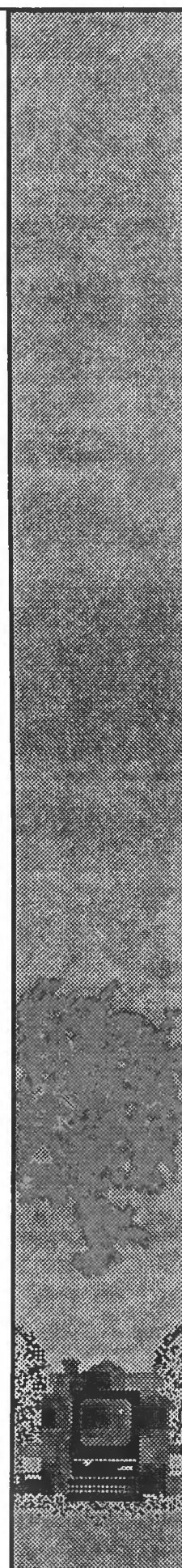
Dedicated Marketing Applications:

aside, the only practical means of getting text into one for most users is to simply sit down in front of a keyboard and type it in. Optical scanners have evolved over the past few years so that it is now feasible to input images in a variety of formats and many of the more successful scanner companies have begun to offer OCR, or *optical character recognition* software as well which allows text to be *scanned* into a computer as well. These behave like a kind of 'morphemic hoover' capable of sucking up printed text from practically any sort of book, magazine or document, which is then neatly deposited it into any computer application of your choice. The most commonly used scanners for image or OCR work are flat-bed or full-page scanners which resemble small photocopiers. These produce excellent quality results but have traditionally been fairly expensive costing well over £1500. However, recently, a new generation of *hand-held* scanners have widened the market by bringing sophisticated scanning technology within the grasp of more limited budgets.

The Caere Corporation, famous for their OmniPage OCR software that operates with most popular flat-bed scanners, have produced a personal hand-held OCR device appropriately called the Typist. Designed specifically for page recognition, the Typist uses Caere's efficient AnyFont technology which allows it to recognise any printed text regardless of font style or the number of graphic elements or columns on a page. With a specified input rate of 500 words per minute, the Typist enables users to take information from almost any hard copy source and dump it directly into most popular word processors, databases or spreadsheets. Typist is easy to install and can be used in conjunction with whatever application is currently running. The Typist will also recognise 11 European languages and automatically determines the correct brightness setting to achieve maximum accuracy and speed at 300dpi, with three half-tone and one line-art option.
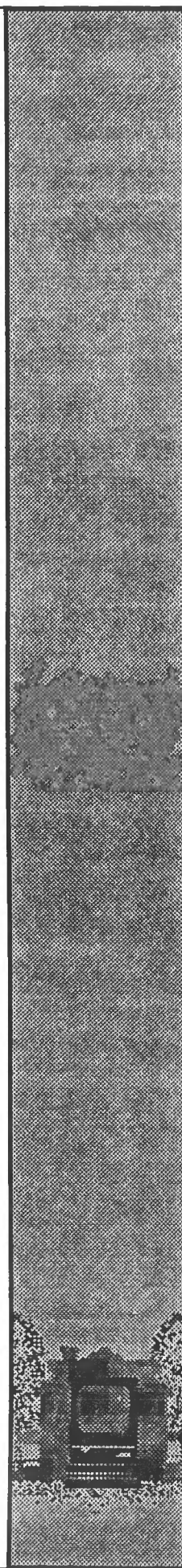
Dedicated Marketing Applications:

Although superficially, the Typist looks like most other hand-held scanners, it is primarily an OCR device with only limited features for scanning images. The scanning engine is housed in a sleek black designer shell with a five inch wide scan head and a scan button running the full width of the device allowing for easy ambidextrous use. Five friction rollers on the bottom of the Typist ensure that it tracks in a straight line even on glossy surfaces and a reasonably large window allows the user to view the scan in progress from various angles. Effective scanning speed offered by the Typist is approximately 2 inches per second, but the degree of accuracy of the scan depends on the quality and format of the source material.

Typist uses exactly the same OCR technology as Caere's OmniPage. The software examines the shape of the characters rather than trying to match specific fonts. Like many other hand-held scanners, the Typist can be used either horizontally or vertically. The main difference, however, is that the Typist automatically interprets the direction without any adjustment to the settings and will even discard repeated text where two scans overlap. Using this procedure called 'stitching', also provides users with the ability to reassemble text that has been scanned in multiple passes and the five inch scan width enables a typical business document to be entered in two convenient swipes. The software, which requires minimum interaction with the user, recognises 6 to 72 point type, including dot matrix. Ostensibly, it will also read any non-stylised fonts in any layout or mix of text and graphics.

In use, the Typist is impressive, to say the least, with an accuracy rate of roughly 95 to 100%. Occasionally, the Typist will substitute a 't' for an 'r', or possibly confuse double letters. But in general, accuracy is excellent and the odd juxtapositions can easily be corrected via a spell-checker. What makes the Typist look like genuine sorcery, however, is when you grab blocks of figures from a document or publication and watch them magically poured into appropriate columns of a spreadsheet. Numerical accuracy is usually 100%, although occasionally, headings may go slightly adrift.
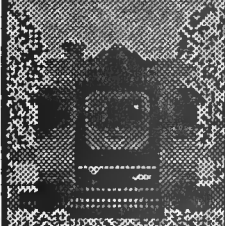
Dedicated Marketing Applications:

The Typist is designed as a simple, low-cost, high performance OCR solution and Caere sees it appealing to an expanding number of individual and small business users. Buying a Typist probably still won't mean that you can throw away your keyboard and never have to type anything again. But it does signify an important development in the way users will begin to view how they can enter data into their computer.

While there is no real competition for the Typist at the moment, LogiTech does provide a version of their OCR package CatchWord for the ScanMan, which already offers incredibly good value and performance as a grey-scale image scanner. What Caere has managed to do with the Typist is to help promote the whole idea of scanners as an important component of office productivity. Personal OCRs could easily become one of the hot items for the 90s and it's reasonable to assume that any number of other scanner manufacturers will be jumping on the band wagon. But for now, for arts organisations looking for a dependable, inexpensive and easy to use hand-held OCR device, the Typist is the only option.

Optical Mark Readers (OMR)

The essence of good arts market research involves, among other things, the collection of customer preferences and other details essential to targeted marketing. In the case of self-completion or even solicited response surveys, questionnaires need to be designed, printed forms generated, responses recorded, and then results entered into some form of database for processing and analysis. Even with most computerised systems, there is a lot of manual entry involved, both in terms of marking questionnaire forms and inputting data into the computer via a keyboard. However, thanks to a device called an OMR, or Optical Mark Reader, which can be used in conjunction with specialised form design software and laser printers, this whole tedious process can now be streamlined.

OMR is essentially a process whereby marks on a sheet of paper, eg ticks in boxes, number or letter preferences, etc, can be transferred directly into a computer file using a specialised scanner. Until recently, this technology was of limited value for many users since the forms themselves still had to be sent out at every stage for

processing and printing. Now, however, a division of Callhaven Computers called Omtech, has put the entire OMR process into the hands of the user. This means that OMR forms can actually be designed, produced, printed, marked and results read back into the computer in a few hours at a relatively low cost.

Like desk top publishing, you set up your marketing questionnaires on screen and enter text, boxes, graphics, etc, exactly where you want them to be printed. Then, a clever piece of software called FormPro places boxes or completion marks accurately so that they will be able to be read later by a scanner. Forms and questionnaires can then be printed out immediately on a laser printer or sent to a bureau or specialist printer on disk for lithographic printing. Once the survey or questionnaire has been marked up, completed forms can be fed through an OMR such as the DRS210 at speeds of up to 3000 completed forms per hour. Incidentally, these readers are quick, accurate, and economical and the resulting data is collected by FormPro and automatically compiled as a text file. This can then be opened in any database or spreadsheet application and worked with freely. Alternatively, data files can be converted automatically into reports and the statistics manipulated by specialist applications. Effectively, one OMR can not only do the same work in data entry as ten typists, but the most important thing for anyone involved in arts market research is that this whole process puts the user in complete control of the entire operation.

I would think that this whole area is one that various Arts Council departments and RABs might want to look at in greater detail. Failing that, Omtech's package could enable an independent arts marketing consultant to corner the market on an extremely valuable and sought after service.
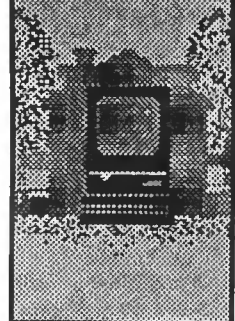
Dedicated Marketing Applications:

Do I Need Them?

A question all arts organizations need to address when considering investing in market research software is whether or not it is viable from a cost and staffing point of view to purchase new or augment existing hardware and software to handle processing of questionnaires in-house, or if frequency warrants, it is more economical to process them out of house on an occasional basis. Mercator Systems, who produce SNAP2, also offer a data preparation and analysis service. Typical charges for analyzing 300 questionnaires of up to 20 questions, including set-up and verification costs under £65. AMS Marketing Services also provides survey analysis and advice on designing questionnaires, conducting research, etc for around £150. The only limitation with this service is that it is run on a custom-designed program which does not tabulate negative responses. It would perhaps be useful to encourage several larger agencies or consortia to acquire facilities for market research which could then be shared or sold to other organizations who could not justify fully equipping their own organization.
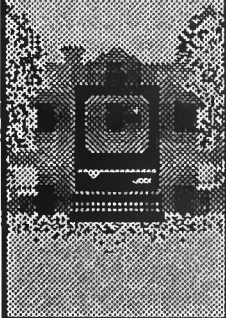
43

Potential Uses:
- Mailing Lists
- Subscribers
- Party Bookers
- Record Special Interests, etc.
- Corporate & Sponsorship Data
- Press & Media Lists
- Management of Bulk Distribution & Publicity
- Market Research
- Form & Questionnaire Generation/Analysis
- Box Office Management & Ticket Selling
- Financial Systems
- Personal & Management Information Systems

UK Product Range:

dBaseIII/dBaseIV

FoxBase

Paradox

Oracle

Reflex

RapidFile

Superbase

Q&A

Dataease

Cardbox

Omnis5/Quartz

Dataflex

FileMakerPro

4th Dimension

Bulk Mailing Systems

Prices:

Anywhere from £150 to £700 per package

Best Buy:

Databases always need to be assessed on an individual basis. While it is possible to indicate potential and market/sales position within the industry, it is not possible to identify a single best buy which would be suitable for every eventuality. A consultant or developer is usually recommended.
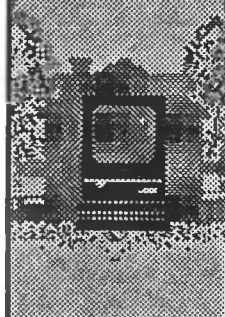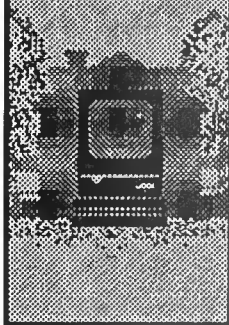
Databases:

Databases are perhaps the most misunderstood of all computer applications. They are also potentially one of the most useful applications for arts organizations and can be found in one form or another working behind the scenes in nearly every system mentioned so far from PASS to the various survey analysis programmes. Essentially, a database is an organized and coherent collection of information. But, since there is no point in having a collection of data simply for its own sake, it really has to be rather more than this. Since it must be possible to make some use of this information, the contents of a database must be organized so that we can access them in all the ways that we may need to. Operations that are typical of those that we may need to perform to make use of a collection of data might include selecting particular items from it, searching it for any item or collection of items that meet a specified condition, updating or appending items, or perhaps sorting items into a special order or report format.

In general, database packages available for personal computers are aimed either at the fairly inexperienced user or at reasonably competent systems developers. Some packages handle data more or less like a card index system while others take a sort of middle path between spreadsheet and data management, using tables throughout for data and instructions. Databases on personal computers also vary substantially in the amount of control they give you over the way they can be used. Simple systems can usually be controlled through menus for specifying choices and some even allow responses or frequently used commands to be stored as *macros* to be re-called for future use. The most sophisticated databases available on personal computers often provide more power than many dedicated programming languages, and often more than the user actually needs.

PC-based database systems normally provide basic facilities for displaying information both on screen and in printed reports. However, some databases are weak on reporting and it may be necessary to pass information into another program to get the desired results. A good database package must be able to handle large amounts of information in a flexible manner and be easy to

modify at a later date. It also must allow the user to transfer data easily from one application to another. This facility may be particularly important to arts organizations where information may need to be made available in several formats and also be utilized in desk top publishing to provide printed matter.

In many ways, databases for personal computers are becoming a lot more powerful and flexible than their former mainframe counterparts. Databases such as *Oracle*, currently being used by Solent Arts Marketing, which were powerful mainframe based applications, are now also available on personal computers. Considerable work has also been done on providing PCs with the ability to connect directly with mainframe or mini databases as well using programs such as *HyperCard* or *Lotus 1 2 3*. Because of the desire for connectivity and the potential for higher performance from the new, faster PCs, *SQL*, or Structured Query Language, is becoming an important buzz-word in database development. *SQL*, without going into too much technical jargon, is becoming *the* language for the manipulation of relational databases and should be taken into account when installing any new database applications. Many of the popular PC-based databases support or will be supporting *SQL*.

In terms of arts marketing, a database should be able to be configured to perform all of the stipulated searches and sorts on any number of informational categories. The main thing to remember, however, is that you need to know what you need to know and *if it ain't there, you can't use it*. Although personal computers and databases can expand your marketing horizons and give you the ability to do things you never dreamed possible, they also force you to re-think your entire marketing strategy and to be much more precise in terms of what you really want.
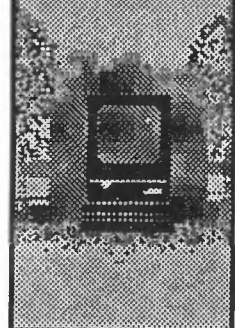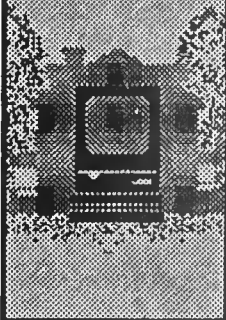
Databases:

Remember:
• A database represents reality and the names, categories, interests, etc recorded refer to things in the real world.
• Such items in the database express facts about the real world and can be collected into relations.
• Rules in the database software define what things and relations are permitted and should represent rules which apply in reality.
• The total collection of rules provides a logical structure for the stored information.
• A query retrieves selected information from the database according to a view of the logical structure.

The practical upper limit on a personal computer, which is now between 10 and 30,000, is determined by the limitations on disk storage size, the capabilities of indexing methods, and performance available on present hardware for speed and sorting. However, specifications on emerging personal computers, such as the 80386 machines and the Macintosh 68030 range, coupled with advances in database design are pushing those limits all the time. There are also practical limits on the number of transactions which a database system can process in a standard time period. It is, perhaps, simple to implement a system which will process 10 transactions per user day, perfectly feasible to process 100 transactions per user day, and impossible to process over 10,000 transactions per user day. This is due to the current limitations on the rate at which data records can be retrieved from disc storage. Fortunately, very high transaction rates per user seldom occur since there is a limit to the number of transactions a user can actually generate.

Although databases must, by there nature, be recommended and installed for specific tasks in specific environments, there are a number of packages that are generally better choices than others. The various versions of dBase, for example, although difficult and unfriendly, do represent an *industry standard*, which although as

mentioned earlier is not a reason in and of itself to buy it, may be worth considering in terms of customized applications already available and the degree of support and back-up that can be expected since it does have a large existing user base. dBase-compatible packages such as FoxBase or Clipper, like IBM clones, probably represent better performance and value for money than the real thing. Other powerful database packages worth considering are Omnis 5, Paradox, SuperBase, FileMakerPro and 4th Dimension. I personally wouldn't recommend packages such as dBase, Dataease or Dataflex although many developers swear by them. Others swear at them. Reflex is particularly worth considering for modification for various market research and analysis applications. In some instances, cheaper and less complex database packages such as Cardbox, PCFile, or Tass may, like bulk mailing packages, be perfectly adequate for the task at hand.

Some Databases At A Glance:

- *dBaseIII/dBaseIV:*

dBase has been a market leader in data management systems for PCs for several years. Although widely used and supported, dBase is a rather complex and unfriendly package. dBase versions up to and including dBaseIII provide the ability to process records with a fixed structure, using the same amount of space for each one, and you can relate records in different files together in an unconstrained way using any field as the link. Reporting is somewhat limited and can be difficult to use until you get used to it. You can use dBase like a programming language or there is an option to use a set of menus to drive the package. dBaseIV, which has recently been released, is a more powerful and easier to use version of this standard package and is designed to support SQL and work with OS/2 and Windows which provide a graphical environment with a mouse and a slightly more consistent user interface. Early releases were a bit unstable and bug-ridden, but Ashton-Tate claims to have smoothed later versions. Viable alternatives to dBase itself are programmes such as FoxBase, or Clipper which provide full dBase compatibility with better speed and performance at perhaps a slightly better price. rBase also reads and writes dBase files.
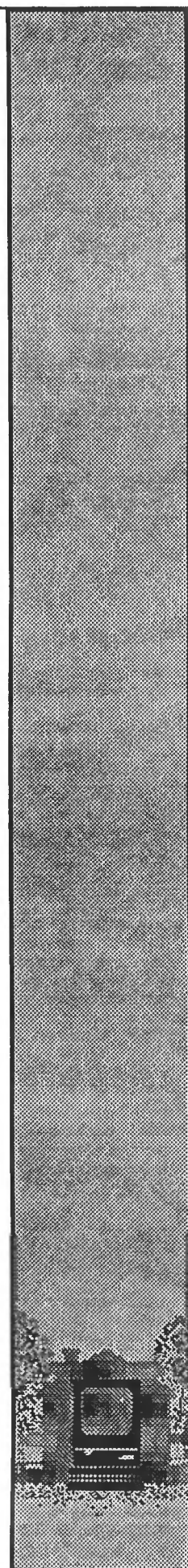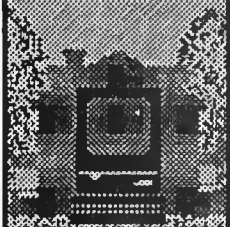
Databases:

- *Paradox:*

Paradox, in its approach, takes a kind of middle ground between spreadsheets and data management programmes using tables throughout not just for data but also for setting up instructions as well. This feature, as well as its superior calculation facilities and the simplicity of handling multi-table forms and queries may have a particular attraction for arts marketing uses. Paradox is a fully relational database complete with its own programming language and the new version 3.0 puts it quite far out in front of the high-end competition, including dBaseIV. Paradox has a major feature called *query by example* which provides almost unlimited flexibility in linking and accessing data quickly and easily. The latest version also offers impressive presentation graphics routines. Although, as mentioned earlier, it is difficult to select a *best* database, or even a *best-buy* database, several computer magazines have recently voted Paradox the best all around package.

- *Oracle:*

Oracle started life as a very successful mini/mainframe package and now is second only to dBase in revenue sales into the PC market. With the industry trend toward SQL compatibility, Oracle offers a powerful edge and an environment that many programmers prefer to dBase. Add-ons which protect the user from the complexities of the actual program structure are now available in the form of modified Lotus 1-2-3 versions and a particularly good *HyperCard* based system called SequeLink. Oracle is also of interest because it offers fuller use of the otherwise protected mode of 80386 machines which pushes back the usual MS-DOS 640K limitation.

- *Reflex:*

Cheap and easy to control, Reflex is somewhat of a hybrid database program allowing five different views of data and a spreadsheet-style table structure. From an arts marketing point of view, Reflex has considerable potential because of its excellent calculation and tabulation features although there is a drawback for large amounts of data since Reflex needs to hold all the information to be processed in the computer's memory. Not particularly good for mailing lists but reasonable for analysis work.

Databases:

• *Dataease:*

A favourite amongst developers who like to build one-off databases for organizations. Dataease offers essentially two kinds of reports and flexible facilities for creating entry screens. While the original version was nothing particularly special to write home about, it is perfectly adequate in certain situations and the latest upgrade is a tremendous improvement. Users are particularly loyal, but it might be worth comparing it with other packages on a feature by feature basis before buying.

• *Cardbox:*

Cardbox is a very simple but clever, flat-file database program which gives some flexibility in cross-referencing with other files. Essentially a computerized index card system, it is most suitable for light-weight applications such as contacts, ideas or project management or fairly small and undemanding mailing lists.

• *Omnis5/Omnis Quartz:*

Omnis, like Reflex, FoxBase and dBase, have versions that run on both IBM compatibles and the Apple Macintosh range of PCs. Omnis is a fairly friendly looking, but powerful, relational database and application generator that makes full use of windowing and other point and click techniques available with a mouse which eliminate much of the usual complicated command syntax. It is a bit pricey and complex displays may run a bit slow on basic specification PCs. Lots of third-party applications available including a useful marketing package called MailManager.

• *Dataflex:*

Another very early package from the days of CP/M, Datflex's main strength is its support for multi-user systems. It's a basically uninspiring program and is beginning to look rather dated compared to features and power now readily available in other packages. New version offers improvements but still not a good choice for long-range development.
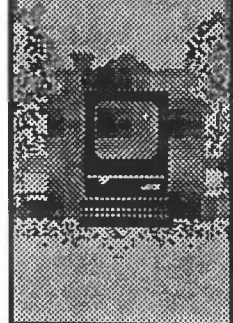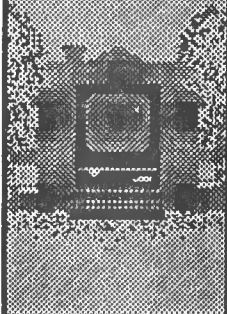
Databases:

- *RapidFile:*

An excellent IBM-compatible flat-file database which is ideal for simple look-up files. Can be used to hold name and address information and can be used along side of a word processor to produce mail-merge letters. It's also dBase compatible which means it's fairly easy to exchange data with other databases. RapidFile also includes its own text editor and searching is extremely fast. However, since it holds all of the data in memory, it's not particularly suited for extremely large mailing lists, unless you have a lot of memory. Relatively easy for novices to design applications.

- *FileMakerPro:*

It's a shame all databases can't be like FileMakerPro. Although it's technically a flat-file system, sophisticated look-up functions give you many of the capabilities found in more complex relational models. FileMaker is also excellent at designing and producing printed forms and reports and is an ideal solution for both generating and analyzing questionnaires or audience surveys. FileMakerPro includes programmable buttons and is particularly easy for novices to learn and use and even develop their own applications.

- *4th Dimension:*

Several IBM developers have told me that this package has features and functions that they have been dreaming about for years, but for now it's only available on the Macintosh. The ultimate Rolls-Royce of relational database development tools with a variety of buttons and functions which could make it an ideal platform for the development of a truly PC-based computerized box-office system. Early versions were rather slow and while it's not for the novice, it's still no where near as difficult or unforgiving as a program like dBase. ACI have also released a cut-down version of 4D called FileForce which includes most of 4D's functionality at a cheaper price.

Bulk Mailing Packages:

Potential Uses:
> Mailing Lists
> Subscribers
> Party Bookers
> Record Special interests, etc.
> Corporate & Sponsorship Data
> Press & Media Lists
> Management of Bulk Distribution & Publicity

UK Product Range:
Mailbase
Labelmaker II
Easylabel
BS Mail
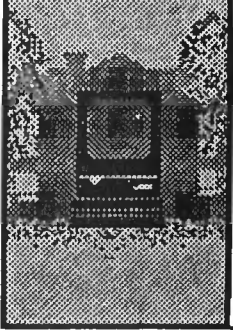SuperLabeller

Prices:
From £39.95 upwards.

Best Buy:
Although most of these packages are pretty much the same,
SuperLabeller, which starts at £39.95 is definitely worth a look for
small to medium sized lists. It is available in a variety of
configurations which still place it well below £100. Mailbase is
another reasonable package which can handle up to 32000 records
on any one list and allows for multiple lists depending on the
capacity of your hard disc.
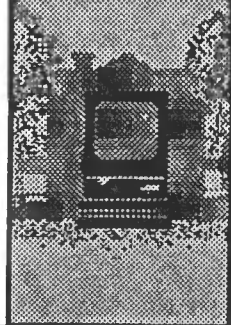
Databases:

Bulk Mailing programmes are nothing more than pre-programmed databases designed primarily to handle large mailing lists and print out selected labels. To this end, many of them are excellent and offer a reasonable alternative to writing a custom mailing list application within a more complex database package. Very often in the past, arts organizations got involved in difficult and detailed database development when at the end of the day, all they really wanted was an efficient mailing list program. Bulk Mailing packages are a good first option when lists need to be computerized but when perhaps long-term information strategies have not yet been worked out. Bulk Mailing packages usually allow for data to be transferred into another *grown-up* database at a later date if required. For simple, but effective targeted mailings, many of these packages are more than adequate for arts organizations and most run on minimal specification IBM compatibles.

Name & Supplier	Price	Menu/Cmnd	**FEATURES** Relational	No.OpenFiles	Max Records	Fields/Record	Field Length	Index Fields	Programing	WP included	Memory	Disk Drive	Comments
CardBox BusSimulations 071-925-0636	£350	M/C		No Limit	500,000	53	4752	No Limit	•		140K	Single Floppy	A good standard flat-file system, but not suitable for heavy-duty applications
Dataease Sapphire 081-554-0582	£595	M/C	•	No Limit	Disk Size	255	255	No Limit	•	•	640K	Hard Disk	Programmers quite like this package which is relatively easy to set up...
Dataflex Dataflex 071-729-4460	£295	M/C	•	No Limit	Disk Size	255	255	9	•		256K	Twin Floppy	Looking rather long in the tooth compared to newer packages with more flexibility and features
dBaseIV Ashton-Tate 0628-33123	£595	M/C	•	99	Disk Size	255	255	No Limit	•	•	512K	Twin Floppy	An industry standard, but new versions still may have a number of bugs to iron out
FoxBase FoxSoftware 0462-421999	£395	M/C	•	10	Disk Size	128	255	No Limit	•	•	512K	Twin Floppy	A good alternative to dBase for heavy-weight applications...very fast
Omnis Blyth 081-346-9999	£595	M	•	60	Disk Size	120	2400	12	•		640K	Hard Disk	A solid established package that is much better in later versions than it was earlier on
Oracle Oracle 0344-860066	£1199	C	•	No Limit	Disk Size	254	240	No Limit	•		2Mb	Hard Disk	An application to watch for the future, particularly with the evolution of SQL and Unix
Paradox Borland 0734-320022	£595	M	•	No Limit	Disk Size	255	255	255	•	•	512K	Hard Disk	A close-run favourite along with FoxBase as an excellent, powerful all-arounder
PC File+ SharewareMkt 0297-24088	£149	M	•	71	65,000	70	1665	70	•	•	384K	Twin Floppy	A reasonable low-cost package for smaller systems

* Please note: Description of software reflects most recent versions available at the writing of this report. Subsequent versions may possibly perform better than indicated.

Databases

Databases

Name & Supplier	Price	Menu/Cmnd	FEATURES										Comments
			Relational	NoOpenFiles	Max records	Fields/Record	Field length	Index fields	Programing	WP included	Memory	Disk Drive	
Q&A Symantec 0628-776343	£280	M		No Limit	Disk Size	2182	16K	115	●	●	512K	Twin Floppy	Easy to use intuitive system of query with good text processing facilities
RapidFile Ashton-Tate 0628-33123	£275	M		-	64,000	250	64K	250		●	256K	Single Floppy	Voted best flat-file database for IBM-compatibles for 1990 by What Micro magazine
Reflex 2 * Borland 0734-320022	£250	M		-	65,000	250	254	8			512K	Hard Disk	Particularly good for reports and applications such as survey or statistical analysis
SuperBase Precision 081-330-7166	£595	M	●	No Limit	Disk Size	No Limit	4000	999	●	●	640K	Hard Disk	Good all around package which makes good use of either GEM or Windows
TasPlus MegaTech 081-874-6511	£199	M	●	32	Disk Size	10,254	255	32	●		512K	Hard Disk	A reasonable low-cost package with quite a lot of functions
Macintosh Options													
FileMaker FrontLine 0256-463344	£225	M		16	Disk Size	32K	32K		●	●	1Mb	Twin Floppy	One of the best nearly-relational flat-file databases available...good for form generation and analysis
4thDimension ACI 0625-536178	£620	M	●	100	16million	511	32000	32,767	●	●	1Mb	Hard Disk	The full-featured Rolls-Royce of databases with facilities IBM programmers still dream about
Double Helix CompCapability 0392-64253	£445	M	●	unlimited	unlimited	unlimited	unlimited	unlimited	●	●	1Mb	Hard Disk	A rather quirky but extremely friendly and powerful relational database

Spreadsheets:

Potential Uses:

    Record of sales and income
    Financial Control
    Tracking Expenditure
    Forecasting
    'What-If' Calculations
    Market Research
   Project Planning
    Payroll
    Budgeting

UK Product Range:

Lotus 1-2-3
Excel
Wingz
SuperCalc5
MultiPlan
VisiCalc
Full Impact

Prices:

Over £300.

Best Buy:

Although not the cheapest spreadsheet available, Microsoft's *Excel* is currently acknowledged as the best all around package in this field. More creative packages such as Wingz and Full Impact are appearing which provide better reporting and presentation facilities, but these are not yet in general usage.
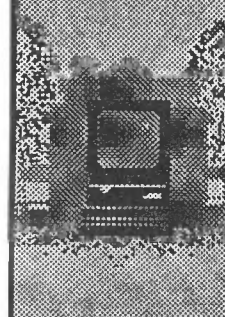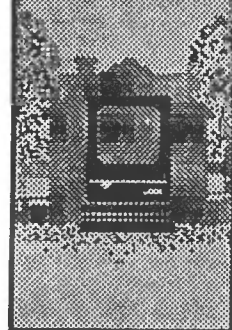
Spreadsheets:

The first generation of spreadsheets hit the streets long before the IBM PC was even dreamed of. They were relatively simple programmes designed for the then highly popular Apple II personal computer, although even Apple failed to see the market potential when they were presented with the concept. Early spreadsheets had none of the additional functions or marketing potential now demanded from users such as graphics and data management, nor did they offer any more advanced maths, financial or statistical features which have now become more or less standard.
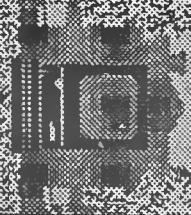
The fundamental purpose of a spreadsheet is to let you perform complex or cumbersome calculations repeatedly and accurately. All you need to do is to create a *master* or *template* within the spreadsheet grid that performs the tasks required, and then simply enter new data whenever you need to. It's not much more complicated than dividing a piece of paper into a grid of rows and columns forming boxes or cells. From a financial or marketing point of view, using a spreadsheet is a bit like being able to train a pocket calculator, pencil and a rubber how to perform specified tasks. You start by writing out all the necessary calculations on a piece of paper along with working figures. Then all you do is set the calculator, pencil and rubber to work and they run around by themselves and alter your writing to produce the answers required. Apart from being able to enter values, number, text, etc, spreadsheets allow you to insert formulas that automatically work out new values from elsewhere on the sheet or relate totals and text together in some useful way. Whenever you change a value, the spreadsheet automatically recalculates the entire sheet so that all values are updated. No matter how complex the relationships between different entries on the spreadsheet may be, the program will automatically and instantly show you how every value is affected. The real magic of spreadsheets is in their ability to recalculate quickly. Because they make it so easy, you feel you can freely experiment with figures and see how a change here or there affects the bottom line. This is particularly useful in arts marketing for charting trends and sales patterns and performing the famous *what if?* calculations which allows the spreadsheet to act as a miniature model or crystal ball reflecting what could happen.
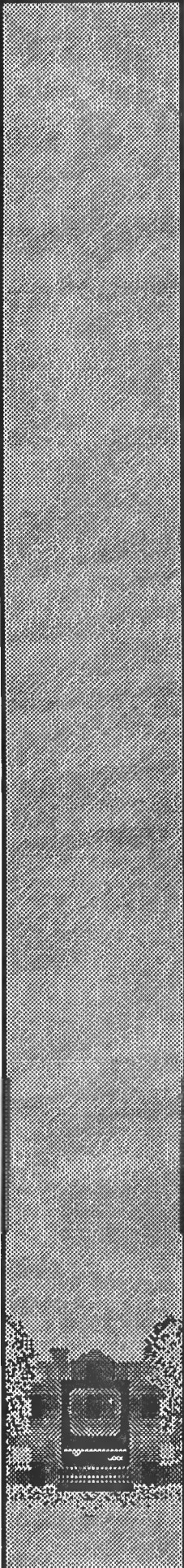
Spreadsheets:

Many arts organizations can use spreadsheets in less money-minded ways and some have even developed very basic box office and ticket selling systems. Their huge grids are ideal for analyzing market research, particularly for storing, tabulating and processing results. Some of the newer spreadsheets with extended graphical capabilities may even be suitable for constructing very basic box office systems. Although, like word processors, they can be used to manage small lists, it's not a function that is particularly effective or recommended. Although Lotus 1-2-3 is reasonably well-established in the corporate world of spreadsheet users, Excel is now widely acknowledged as the best spreadsheet program available, both for the occasional and the *power-user*. It also has the added advantage of working in both the IBM compatible and Apple Macintosh environments. Excel's main disadvantage is that it requires at least a top-class AT clone in the PC environment with expanded graphics card and *Windows,* and actually works best on a 2Mb 286 or 386 machine.

Spreadsheets

Name & Supplier	Price	FEATURES								Comments
		Max Worksheet Size	Graphics	Database	Windows	Macros	Functions	Memory	Disk Drive	
Excel Microsoft 0734-500741	£395	16384x256	●	●	no limit	●	131	640K	Hard Disk	Best all around spreadsheet for power and flexibility with good user interface but does require AT clone or 386 machine. Mac version costs £275 and needs 1Mb
Lotus 1-2-3 Lotus 0753-840281	£395	8192x256	●	●	3	●	103	1Mb	Hard Disk	Long awaited version 3 offers a few new features to this old favourite, but still lacks power & features compared to Excel
MultiPlan3 Microsoft 0734-500741	£150	4095x255			8	●	76	256K	Single Floppy	Another old favourite with no graphics or database facilities...OK for most basic applications
QuattroPro Borland 0734-320022	£395	8192x256	●	●	32	●	113	512K	Hard Disk	Good windows-like feel makes it easy to use with a mouse and it runs rings around 1-2-3
SuperCalc5 Computer Assoc. 0753-77733	£396	10,000x255	●	●	6	●	150	512K	Hard Disk	Another older spreadsheet program that's undergone several re-writes to add extra features, but still fairly basic
AsEasyAs Shareware Mkt. 0297-24088	£35	2048x256	●	●	2	●	44	256K	Single Floppy	A cheap and cheerful 1-2-3 compatible spreadsheet ideal limited budgets and small enterprises
Wingz Informix 071-583-3797	£295	32,000x32000	●	●	no limit	●	146	1Mb	Hard Disk	Superb spreadsheet allowing numbers, graphs, graphics and text to be combined in DTP-like fashion. Powerful and visually stunning

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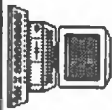
Potential Uses:
    Charts
    Graphs
    Over-Head Transparencies
   Slides
    Desk Top Publishing
    Reports

UK Product Range:
Aldus Persuasion
More
Aldus PageMaker
Harvard Graphics
Ventura
Quark Xpress
Freelance Plus
Draw Applause

Prices:
Anywhere from £99 up to £800 per package depending on type and configuration.

Best Buy:
Again, it's not really possible to identify an all round best buy because each user will define their expectations and requirements differently.
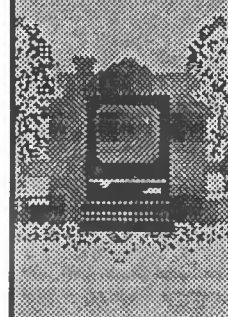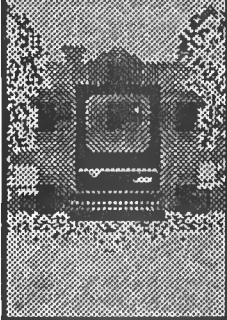
Presentation Systems:

In marketing, perhaps even more than in other areas of arts administration, presentation is extremely important. Therefore, even if an organization doesn't think they need a full-blown Desk Top Publishing system, they would none the less benefit greatly from many of the features offered in such packages. To this end, a flexible page lay-out program coupled with a graphics or charting program should be included in any arts marketing system.

There are effectively five basic types of software in this category:
* Desk Top Publishing
* Painting & Drawing
* Charting, Capture & Display
* Specialist Presentation Graphics Software
* MultiMedia Systems

Painting and drawing programmes allow you to create illustrations and pictures from scratch and are ideal for logos, artwork, etc. Most of these packages offer the ability to scale, rotate, move copy and group elements and there are also a large number of *clip-art* discs containing already prepared symbols and illustrations which can be uses as is or modified within a paint or drawing program. Charting software enables numeric data to be converted automatically into a wide range of formats including pie charts, bar charts, line graphs, etc. Many spreadsheet programmes include a charting facility of one sort or another but few match the quality and flexibility of a dedicated package. Capture and display software allow you to take a snapshot of specific screens or sequences directly off of the computer. This can be particularly useful in preparing training or induction materials, but not much else. Specialist presentation graphics software integrates a number of these features into one package and is particularly suited for group presentations. Packages usually allow for composite illustrations to be brought together and have excellent colour facilities.

Presentation Systems:

Desk Top Publishing, which was mentioned briefly earlier on in the section on text processing, is a term that most people are at least somewhat familiar with nowadays. But it is also a concept that is all too often mis-understood in arts marketing circles. While DTP is primarily associated with the design and production of publications, it can also be extremely useful in areas of questionnaire design and production, publicity and PR materials preparation, and generally creating a smarter image in all aspects of reports, documentation and corporate image. DTP is also an incredibly useful facility to build into consortia as either a chargeable service or a *diy* facility for consortia members. The best all around DTP package is probably Aldus PageMaker, which is available in both IBM compatible and Apple Macintosh formats, and it's intuitive approach makes it particularly suitable for arts marketing environments. Aldus has also created a series of templates or style-sheets for most popular business applications which can be used as is or modified if users don't feel up to the over all design task. On IBM-compatibles alone, it is a toss up between PageMaker and Ventura, which uses a slightly different approach to design and lay-out. Macintosh users also have the option of using perhaps the best DTP package of all, Quark Xpress.

Drawing and presentation packages can be useful to arts organisations for preparing materials such as overhead transparencies, slides, or speakers notes and hand-outs for meetings or group presentations. Many of these provide outlining facilities which are also useful for planning and *brain-storming* exercises and output can often be incorporated into other applications such as word processing or DTP packages.
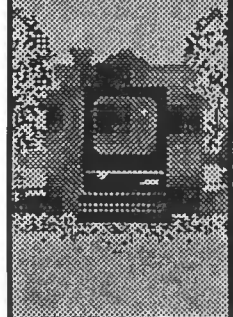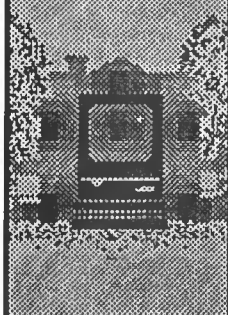
Hardware Systems:

As mentioned earlier in this report, computing is very different today than it was a mere ten years ago. For example, the IBM-PC didn't appear until 1981, there was no Apple Macintosh until 1984 and no laser printer was available until 1985. Less then ten years ago, most microcomputers didn't have hard disks, CP/M was a popular operating system, the display was a monochrome green or amber screen and the cost for a system could be around £10,000. What is particularly noticeable about all this, apart from the relative youth of the personal computing industry, is just how difficult some of these developments would have been to predict. However, what is becoming more apparent is that the really important changes in personal computing won't necessarily involve hardware, whose future evolution is relatively easy to discern, but rather how people actually choose to use it.

Perhaps the most important change taking place in the computer industry at the moment is the replacement of the old-style command/character-based operating environment with newer, friendlier and more consistent Graphic User Interfaces or GUIs. Apple was the first to use this concept successfully on the Macintosh and their success and effect on market share has caused IBM and the clone manufacturers to take GUIs very seriously. With the arrival of Windows and the later Presentation Manager, there is little doubt that the whole industry is moving to the graphical approach and the commitment to the *WIMP* approach using *windows*, *icons*, *mice* and *pull-down menus* is pretty well total. Reluctant DOS-users will be able to stick with the old text-based command-line interface for a while, but Windows 3.0 will probably be bundled with most new hardware and will provide a strong incentive to move. Other contenders in the GUI stakes include X-Windows, New Wave, NeXT Step, GEM, Presentation Manager, DesqView and Open Look.

The main advantages of GUIs are ease of use, more consistent commands, and a shorter learning curve. They are also generally more attractive to sit in front of than flickering green or amber character-based screens and require far less formal training to use

productively. GUIs comprised of windows, icons, mice and pull down menus (WIMPS) enable users to find their programs and work with files with intuitive ease. Today's GUIs usually feature:

- a mouse - the device which controls the cursor on screen by moving, pointing and clicking
- pull-down menus - using the mouse to point at a menu bar on screen causes menus of commands to appear which can be · selected by pointing at them
- windows - frames or boxes within which applications run...can usually be re-sized and moved around the screen
- icons - symbols used to represent disk drives, files, applications, etc in intuitive and recognizable forms

From an end-user's point of view, the Macintosh GUI is the most proven, has the most applications designed for it and is the one that everyone else is trying to catch up with. Programs such as New Wave and Windows 3.0 are beginning to take off and what is clearly important to consider when upgrading or choosing a new computer system for the arts is that even the most stalwart DOS users now recognize that a graphical user interface is the best environment for the PC. To ignore the potential benefits of the GUIs, particularly considering the type of people who usually work in the arts, would be a grave mistake.

When looking at the potential offered by particular computer systems for any sort of application it is important to remember that users always become fanatically loyal to the systems they know best, particularly, if they've spent a lot of time and effort to learn to use them. Often, however, the machines they know and love the best, were not chosen because they were the best possible machines for the task at hand, but rather were chosen as a result of various pressures such as marketing hype, price constraints, and a lack of awareness of what was actually possible and available. Many organizations have bought cheap machines like the Amstrad PCW simply because they are cheap and were what they thought they could afford at the time.
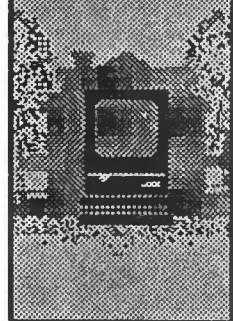
Hardware Systems:

As both the potential of equipment itself becomes more powerful and sophisticated and users begin to demand more flexible and specialist applications, investing in bottom-end computer systems may prove to be extremely short-sighted and more of a long-term liability than anticipated. Whenever possible, arts organizations should be encouraged to *up-grade* their systems and expectations, particularly if they wish to take full advantage of the potential benefits a computer can offer in more specialized areas outside the realm of more commonly used traditional word-processing, spreadsheet and file-management applications. While cheaper PC systems can undertake certain marketing activities using spreadsheets or databases, most real budget systems such as the Amstrad PCW will not be suitable for more serious market research or presentation tasks.

Because of the current convergence in technologies, arts organizations should begin to budget more for computer systems and begin to look beyond the Amstrad PCWs and low-end IBM-PC compatibles to the more sophisticated higher performance PCs such as the 80286 and 80386 machines which will support OS/2 and the emerging GUIs like Windows 3.0. Alternatively, at this level, users can also choose from the powerful range of low-cost Apple Macintoshes such as the Classic, the LC or the IIsi which are comparable in price and available to arts organizations at a substantial discount. These machines, and user-interface developments appearing on machines such as the NeXT workstation and other UNIX platforms, represent the emerging standard in power, sophistication and ease of use that will dominate the industry for some years to come.
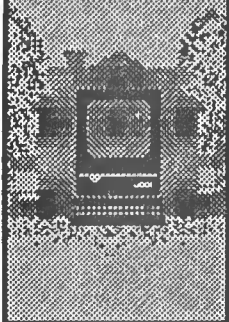
Hardware Systems:

Although choosing a computer system must always be decided by individual circumstances, as a general guideline, like the arts marketeer's *wish lists*, I would suggest considering systems along the following lines as an ideal basis for potential non-box office oriented marketing configurations:

IBM-compatible 80286/80386 (or 80386sx)
1Mb RAM minimum-2Mb RAM minimum for Windows
40Mb Hard Disc
Windows 3.0/DeskView for lower RAM systems
EGA/VGA enhanced graphic monitor
Laser Printer (PostScript Compatible if possible)

Essential Software:
    Word Perfect/AMI/Microsoft Word(word processor)
    Excel /Lotus 1-2-3(spreadsheet)
    FoxBase/Paradox/SuperBase (database)
    QPS/SNAP2 (market research)
   *Aldus PageMaker/Quark Xpress(DTP/presentation)*

or alternatively:

Apple Macintosh LC or IIsi
2Mb RAM
40MB Hard Disc
Laser Printer (PostScript Compatible if possible)

Essential Software:
    Microsoft Word/Word Perfect/MacWriteII (word processor)
    Excel/Wingz (spreadsheet)
    FileMakerPro/FoxBase/4th Dimension (database)
    SPSS/FileMakerPro/FormPro (market research)
    Aldus PageMaker/Quark Xpress (DTP/presentation)
    HyperCard (general multi-media tool kit)

Both of these rough configurations are more or less comparable in terms of price, performance and data compatibility and both offer access to a recommended range of software. Laser Printers are recommended for these *ideal* systems because they are fast, quiet and
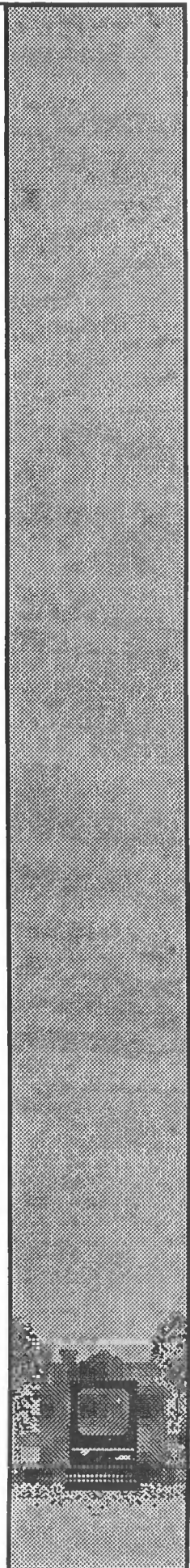
Hardware Systems:

extremely presentable for everything from labels to finished documents. Full PostScript compatibility also gives users access to all the design flexibility available within DTP or presentation packages. When laser printers are not feasible, ink-jet or 24-pin dot matrix printers should be considered. Cheaper system configurations may prove adequate for certain marketing-related tasks, particularly for smaller organization, but I would advise any medium to large scale operation to look very seriously at budgeting for a system approaching the above specifications.

There is an existing base of both hardware and software available off-the-shelf which can greatly enhance the way arts organizations conduct their marketing activities. No one system is absolutely perfect or fool-proof for every situation or eventuality. Each generic section does have its clear favourites and organizations can mix and match according to their individual requirements. But while many applications offer considerable power and flexibility, it is worth remembering that in most cases, some outside help and a considerable amount of training will be necessary to achieve the full potential of any system. When budgeting for any system, it is vital to include adequate provision for both training and maintenance.

What makes computerized marketing systems so complicated to implement successfully is the real need for hard business and organizational thinking behind the hardware and software. Systems themselves need to be structured so that *all* of the people within an arts organization concerned with marketing can get access to the information they want when they need it. This means that the quality of the information, how it is stored, retrieved and analysed, and the number of people who have access to it, all affect the usefulness of the system and in most arts organizations, will require organizational and managerial change and a new level of cooperation between departments. Simply installing a computer system and buying a load of software will not improve competitiveness or market share. Simply put, there is no such thing as a strategic or competitive marketing computer system. A well-chosen and well-designed system may support or enable an important change in the way marketing is done, but *it is the change in the attitude towards marketing itself that is strategic.*

Michael Prochak is an independent specialist in computers and computerized box-office/marketing systems for the arts. He works as a freelance writer, consultant and creative developer and is a regular contributor (under several aliases) to a variety of national computer publications as well as newspapers such as the Guardian, Daily Mail, and the TES, writing regular monthly columns for MacWorld, Arts Management, PrePress, and the Daily Mail. Using HyperCard and other database and multimedia applications, he has run computer-based training courses for Leicester Polytechnic, the Theatrical Management Association, the Welsh Arts Council, Southern Arts and ARTS Consultancy. He has done consultancy, PR and marketing, and applications development for arts organisations, commercial businesses and software companies, including Claris, Apple UK, Vicom, Newman Publishing, the Arts Council, the OAL, etc. He has a broad background in music, education, radio and TV, publishing and the arts and has worked as Advertising and PR Manager for Paddington Press, Director of the Colchester Arts Centre, Arts Development Officer and Consultant for Kent County Council, and Head of Press, Information and Marketing Resources for South East Arts. Formerly secretary of the CoRAA Marketing and Publicity Group and a member of the Marketing Panel for Extemporary Dance, his arts and media clients have included, Comedia, East Midlands Arts, South East Arts, Southern Arts, Warwick Arts Centre, English National Ballet, the TEAM in Liverpool, Buckinghamshire Arts, The Charleston Trust, Keith Prowse Expotel, the NVAIP, the Actors Centre, the Traverse Theatre, Martin Balls Consultants, and the Dolmetsch Foundation. He is listed as a consultant under the DTI Financial & Information Systems Initiative.
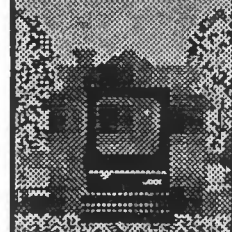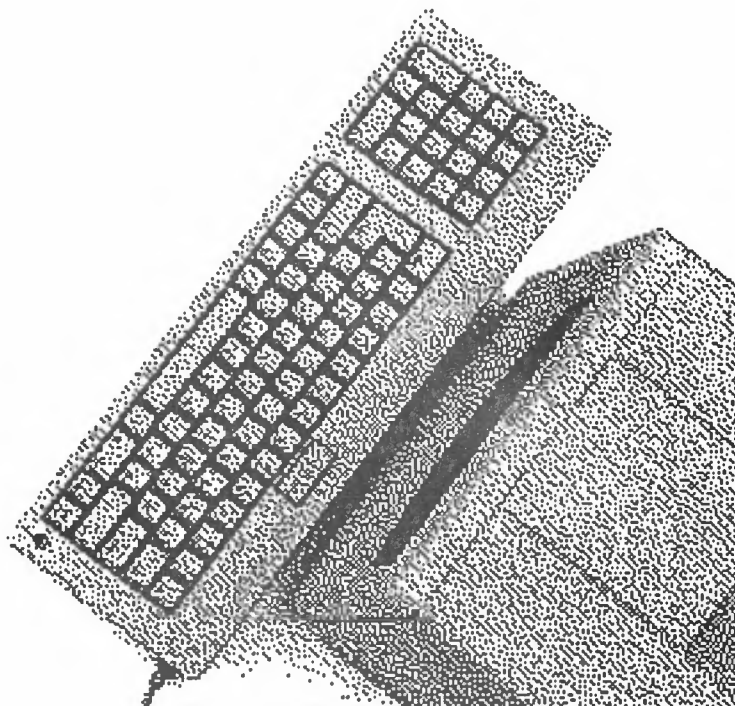
Choosing A Personal Computer System

In French, a computer is called an 'ordinateur', or literally, a 'sorter'. This is a particularly accurate description of what a computer does. A computer's job is to simply process information and its components are each concerned with one of four major tasks:

- input, or receiving information
- memory, or remembering what it's been told to do
- processing, or sorting information and making calculations
- output, or providing you with the results of all this activity

Modern personal computers are similar in concept to hi-fi systems, providing a number of components that work together to make a complete system. Sometimes these components are housed separately or combined in a single complete box. Input and output devices communicate with the PC and receive information from it. The most common input devices consist of a typewriter-style keyboard and a screen where the actual information is displayed. Many PCs now also include a friendly pointing device called a 'mouse' which works with systems providing graphic rather than purely text-based displays. Such systems are called graphic user interfaces, or GUIs. Most PCs will also have a printer to produce a written record or hard copy of the system's output.

Computers also utilise storage devices to maintain information for future use. Today's personal computers use either 3.5 or 5.25inch floppy disks as storage devices. However for serious business use and for storing larger amounts of information, a device called a hard disk is generally recommended. Disk storage is a bit like an electronic notebook which works interactively with the PC. Sometimes information is written into them, sometimes it is read off of them.
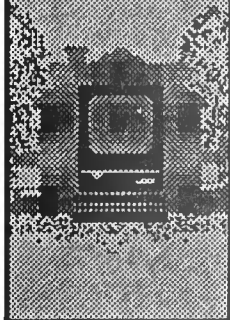
In order to get on with its work, a PC has to have information at its fingertips. This working information is kept in a short-term memory store inside the central processing unit or CPU. These chips are designated by various numbers such as 80286 or 80386 and the type of memory they provide is called RAM or random access memory. Computer information is stored in units called 'bytes', and one byte usually represents one character of information. A kilobyte or 1K equals 1000 bytes and one megabyte or 1Mb equals 1million characters.

Both storage and memory must be of sufficient size to perform the tasks required by the user. For example, a business with a mailing list of 10,000 customers must have a system with sufficient storage for all 10,000 names and addresses to be processed at once. Memory must be large enough to store one or two address being updated or printed at any moment plus any instructions the PC is using to work on the task. A small business PC should probably have between 640K to 1Mb of RAM. Floppy disks normally hold between 700K to 1.44Mb of data while hard disks hold from 20Mb upwards.

Unless you are particularly interested in computers, you will never need to learn a computer language. Instead, you will simply need to learn how to select the right software applications for the specific tasks you wish to carry out. Just remember, personal computers simply follow a set of logical rules precisely to the letter. They're not particularly bright and will inevitably take everything you say to them literally.

Choosing a computer system for the arts, as in any other field, is usually determined by two major factors:
- what you want to do with the system
- how much you want to pay

When choosing a system, it is important to look a the specific types of jobs you want to do. Some applications are extremely demanding on the machine and larger more sophisticated programs may, for example, run slowly on a simple PC, or, in some cases, may not even run at all. To make matters worse, most users tend to want their PC to do more than one job, and the conflicting needs and solutions have many possible hardware answers.
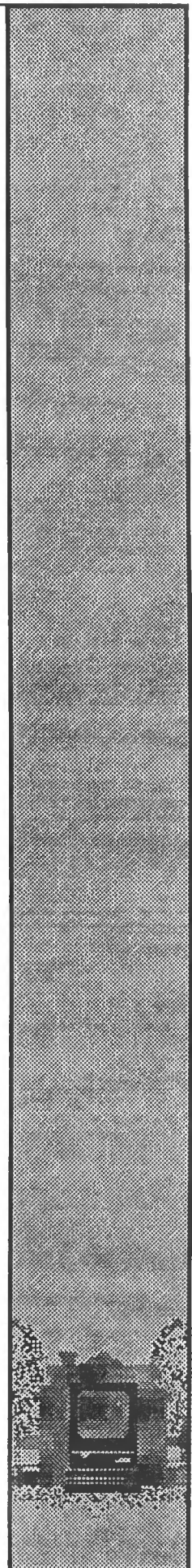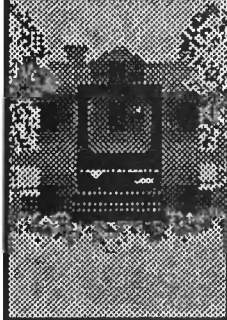
Appendix I

Although it is no longer a necessity to buy an IBM-compatible PC, many users still pursue this route because of the vast number of cheap 'clones' available and the massive number of software packages written for MS-DOS machines. While the original IBM-PC is no longer manufactured, hundreds of companies produce PCs which are functionally more or less identical to the original, but usually offer better performance and more features. And although these cheap 'clones' can be good value for people who know what they are doing, they are often not the best choice for beginners.

Also, be aware that the clever marketing campaigns advertising the cheapest prices usually refer to only a basic single floppy disk drive machine with a monochrome monitor. To be really useful in most real-world business environments, you will require a PC with a minimum of two disk drives and preferably a hard disk. Monitors are another important aspect of any system since they are the things that you have to stare at day in and day out. A cheap monochrome monitor may seem like a good way of saving money, but I guarantee it's a false economy which will end up costing you more in eye strain and headaches then it's worth. There is also a growing concern over potential health risks caused by low-level radiation emissions from computer monitors and the EEC has recently issued new guidelines on safety and ergonomics in the workplace.

While it is possible to provide guidelines for something close to *potential options* for say, three types of arts organization/user, such options can only begin to give a picture of what is available within relative price/performance parameters. For complete, up-to-date specifications of current market prices and machine availability, magazines such as *What Micro* provide a much more comprehensive comparison on a regular basis then could ever be reproduced in a one-off report. However, as a starting point, the following examples describe the sort of system specification users can expect to be able to get within certain price ranges. All prices quoted are ex-VAT and remember, you will also have to budget for maintenance, software, training and consumables.

IBM PC-Compatible XT

These machines are basically the same as the original IBM PC which was introduced in the early 1980s. While IBM themselves no longer make them, a variety of *clone* manufacturers do using very basic 8086 or 8088 chips which make them very slow by modern standards. They usually only have 512K or perhaps 640K of RAM and their screen displays are usually rather poor monochrome in green, amber or perhaps black and white. They can run basic word processors, spreadsheets and databases, but are unsuitable for large applications or any sophisticated graphics work. Larger database applications, multiple-ledger accounts packages and some dedicated marketing applications can be unbearably slow or even un-workable on a standard XT. They are not suitable for the new graphic user interface *Windows 3.0*, but they will support the older, less sophisticated GUI implementation of GEM. One of the main problems with an XT is it doesn't up-grade very well. While it is possible to add more memory, or even upgrade to a 286 or 386 system, the result would be a bit like putting a Ferrari engine in a lawnmower. However, for smaller organisations with limited resources and needs, an XT with a hard disk and mono screen can be acquired for between £200-£700. As a rough guide, plan to spend at least £500 for basic reliability.

IBM PC-Compatible AT

The AT evolved as chip technology evolved and is built around the 80286 processor. It was also designed to go to the limit of MS-DOS which is 640K, so usually a basic system will include 640K of RAM, a hard disk and a better screen (either a VGA or Hercules) than the original *PC*. The AT offers a number of advantages over the XT including 1.44Mb floppy disk capacity compared to 720K, and an expansion bus which can handle 16 bits of data at a time as opposed to 8 bits on the XT. Basically, all this means is that an AT can cope with faster hard disks, is easier to expand, and generally runs faster than an XT. A 286 machine can also take full advantage of *Windows 3.0*, but you'll need a system with at least 2 if not 4Mb of RAM. The screen display offers more choice and is usually VGA and offers good colour support. 286ATs represent particularly good value for money at the moment and can be found priced between £800-£1500.
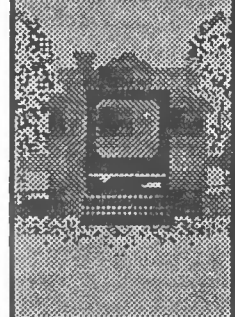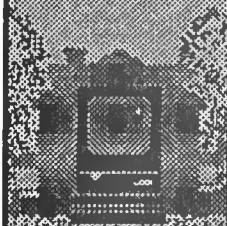
Appendix I

These machines are capable of most applications medium to large-ish arts organisations may require including most marketing applications, databases, *DTP*, etc. Expect to spend at least £850 for a reliable AT with 40Mb hard disk, 1Mb RAM and a mono VGA screen.

IBM PC-Compatible 386sx

The 80386sx is a cut-down version of the Intel 80386 chip which has come to dominate IBM-compatible high-end business computing. Externally, the 386sx is functionally equivalent to the 80286AT, with a 16-bit interface held in RAM. However, internally, it has all the features of the 80386 including 32-bit processing which can be optimised for both MS-DOS and UNIX and emulation of earlier 286 and 086 modes. Critics of the 386sx compare it to buying a thoroughbred race horse and then chopping off one of its legs and point out that it needlessly cripples input-output. However, other pundits reckon that the 386sx is the best choice for most business users and anyone contemplating buying a 286AT should consider the 386sx as an alternative. In many ways, the 386sx is much more future-proof and gives users access to all of the latest software. It's a great platform for *Windows 3.0* and is capable of multi-tasking. Depending on the configuration, a 386sx should cope with most applications required by arts administrators, including specialised marketing, presentation, publishing and database applications. Prices for 386sx machines range from around £1000-£2500, and you should expect to pay roughly £1200 for a 40Mb hard disk, 1Mb RAM, VGA mono system.

IBM PC-Compatible 80386

Until recently, the 80386 was the top of the PC line in terms of speed, power and performance. Over the past few years, it has been clear that IBM's own strategy after their less than successful launch of OS/2 was to move their MCA (Micro Channel Architecture) product line to 32-bit 386 architecture. The idea here was simply to consign the various clone manufacturers producing 8086 and 80286 PCs to the proverbial scrap heap. But nothing stands still for long and already, go-faster 80486-based machines are beginning to appear on the market and the whole notion of *standard* or even *IBM-compatible*

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has become somewhat of a joke. Few arts organisations will be able to justify the expense or the need for the power provided by a 486 machine. Larger organisations, however, may wish to utilise full-blown 80386s rather than sx's. Prices for 80386 machines range from around £1000-£3500. A reasonable 386 machine with 1Mb RAM, a 40Mb hard disk and mono VGA screen can be had for around £2000.

Apple Macintosh

In 1984, Apple launched a personal computer for *the rest of us*. Pioneering what has become known as the Graphic User Interface, the Macintosh offered an alternative to the less than friendly MS-DOS environment by providing *windows*, *icons*, *mice* and *pull-down menus*. The idea was to provide a graphical representation of the desk top and allow the computer to work the way people do rather than vice versa. Unlike IBM-compatibles, with the inconsistencies of multiple systems and different user interfaces in every application, the Macintosh provided consistent commands and menus across their whole range of programs. Effectively, this means if you know how to use one Macintosh application, you can use them all. Unfortunately, for a long time, it was the computer many desired, but few could afford. When cheap IBM-compatible clones started to arrive, the Macintosh looked expensive by comparison. Also, because of the successful IBM inspired FUD (fear, uncertainty and doubt) campaign, many prospective users were scared off because they didn't think the Macintosh was *IBM-compatible*, and it was true that the original Macintosh was a proprietary closed system which didn't run MS-DOS applications. However, times have changed.

The Macintosh is still the easiest personal computer to use and the consensus among hardware and software companies is that the Macintosh-style *GUI* is the way all personal computers should work. But while programs like *Windows 3.0* begin to offer some of the facilities offered by the Macintosh, they still don't offer the power or consistency of the original. Today, Apple offers a full range of Macintoshes priced from under £600 to over £6000, and there is a full range of state of the art software available, much of which is now being ported over to run under *Windows*. Macintoshes offer a unique approach to computing which really must be seen to be appreciated. Macintoshes also include as standard many features
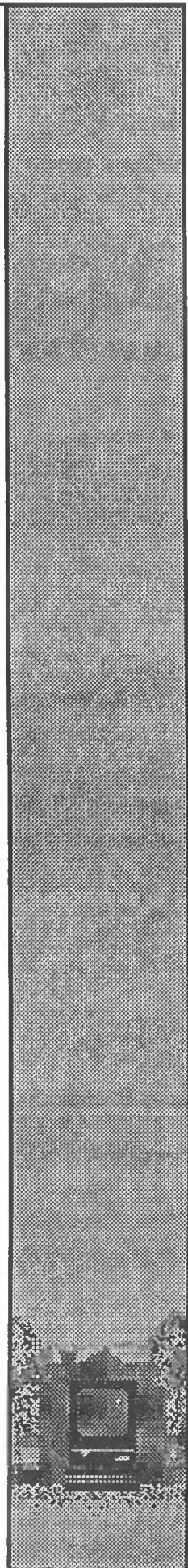
which are hidden expensive add-ons for most other PCs such as built-in networking, SCSI port, sound, and control for video or CD-ROM. They also require less formal training than any other computer system. While there is a full range of machines to choose from, arts organisations will probably be interested in the three low-cost Macintoshes which have come out in the past year. They include:

Macintosh Classic:

A self-contained unit similar to the original Macintosh, a 2Mb Classic with a 40Mb hard disk and integral monochrome screen utilising a 68000 processor provides roughly the same power and performance as a 4Mb 286 machine with a 40Mb hard disk and monochrome VGA display. This model Classic is priced at under £800.

Macintosh LC

The LC is the cheapest colour Macintosh with a 2Mb LC with a 40Mb hard disk and 12inch colour monitor providing roughly the same power and performance as a 386sx machine with 4Mb, a 40Mb hard disk. The LC, running a 68020 processor however, will cost around £1065.

Macintosh IIsi

The IIsi is the cheapest entry level Macintosh II and utilises the full 68030 processor. A IIsi 2Mb with 40Mb hard disk and 12inch colour display is roughly equivalent to a full-blown 4Mb 386 machine with a 40Mb hard disk and VGA display. Pricing of the IIsi starts around £1600.

So, just how *compatible* are Macintoshes? While this issue is dealt with later in the report it is worth mentioning that the whole concept of compatibility has been defined by the PC industry to be "able to run MS-DOS". All of the machines in the Macintosh range now include the ability to read and write MS-DOS disks and files, and you can even run any MS-DOS application such as Lotus, etc in a window on the Macintosh screen...right down to the familiar ">" prompt. However, running MS-DOS programs on a Macintosh would be a bit like putting a lawnmower engine into a Ferrari. What most users need is to be able to exchange data and information between systems, and the Macintosh can do this quite happily in any PC, mini or mainframe environment and even runs UNIX.
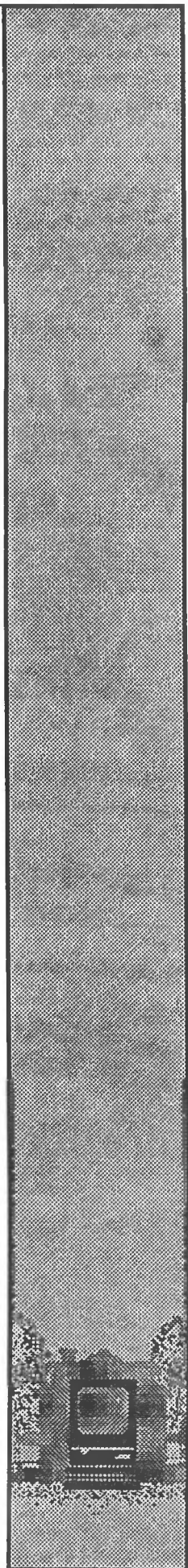
Others

A few years ago, Amstrad introduced the PCW word processor as an economical replacement for the electric typewriter. It was cheap, though arguably not that cheerful, but it did manage to introduce a large number of people to the world of personal computers. While such systems may initially appear to be good value for money, it is important to realise that if you wish to do anything other than the most basic word processing, they are not as useful as one might be led to think. Physically, they are not particularly robust, their ancient CP/M operating system can be slow, and the screen is not to be recommended if you plan to sit in front of it for any extensive period of use. The PCW is probably unsuitable for most serious business applications, and is particularly inappropriate for serious market research and administration. Individuals or very small organisations may find it useful for processing text on a small scale, but don't expect to do much else.

Remember, this list is merely a brief over-view to help familiarise readers with the kinds of personal computers that they are likely to encounter. They may or may not be suitable for use in your particular arts marketing activities and in the end, the best way to evaluate any personal computer system is simply to put it to the test. Usually it makes sense to buy a computer with the most powerful processor you can afford. It's always easy to increase hard disk capacity, add more memory or change your display card. But upgrading the actual processor is never all that easy.

When choosing a personal computer system, it is probably worth considering some advice given by John Ruskin over 100 years ago. *"It is unwise to pay too much, but it's worse to pay too little. When you pay too much, you lose a little money – that's all. When you pay too little you sometimes lose everything, because the thing you bought is incapable of doing the thing it was bought to do. The common law of business balance prohibits paying a little and getting a lot – it can't be done. If you deal with the lowest bidder, it is well to add something for the risk you run. And if you do that, you will have enough to pay for something better."*

Appendix I

Examples:

Budget System: XT *(under £1000)*

Elonex PC-88M
8086-based IBM-PC compatible
640K RAM
Monochrome Hercules
20Mb Hard Disk
£595
Other models in this category , some with even better specifications, would include the Olivetti PCS86, CompuAdd 810, Amstrad PC3086, Opus PC III, etc.

Intermediate System: 80286 AT *(under £1500)*

Olivetti PCS286
AT-class 80286-based IBM-compatible
1Mb RAM
Monochrome VGA
40Mb Hard Disk
£1149
Other models in this category might include Qubie, Tandon, Zenith, Dell 210, Elonex PC286M, Viglen, etc.
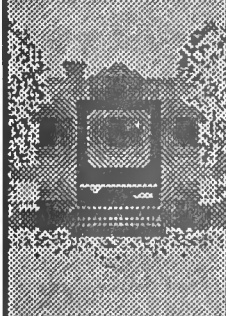
Power Systems: *80386sx (under £2000)*

Tandon PCAsl/386SX
80386sx-based IBM-compatible
1Mb RAM
Monochrome VGA
40 Mb hard disk
£1549
Other models in this category might include IBM PS/2's, Compaq, Acer,
Dell, Olivetti, Logix, Elonex, etc.

Power Systems: 80386 *(under £2000)*

Opus PCV
Full 80386-based IBM-compatible
Monochrome Hercules
1Mb RAM
40Mb hard disk
£1699
Other models in this price-range might include Viglen III/LS, Elonex,
CompuAdd, etc. Colour VGA displays will push prices over the £2000
mark.
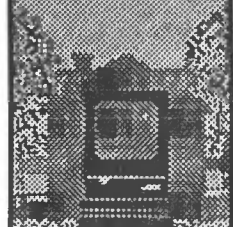
Appendix I

Apple Macintosh Options: *(under £1000)*

Macintosh Classic
68000-class
Monochrome monitor
2Mb RAM
20 Mb hard disk
1.44Mb SuperDrive which reads IBM-compatible files and disks
mouse/GUI
£775
(Includes Apple's education discount.)

Apple Macintosh Options: *(under £1500)*

Macintosh LC
68020-class
Colour monitor
2Mb RAM
40Mb hard disk
1.44Mb SuperDrive which reads IBM-compatible files and disks
mouse/GUI/microphone
£1065
(Includes Apple's education discount.)

Apple Macintosh Options: *(under £2000)*

Macintosh IIsi
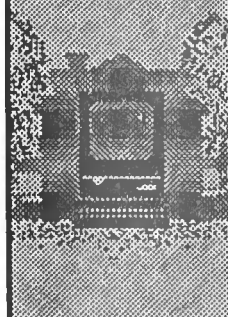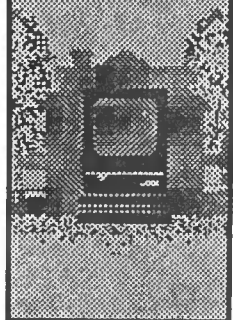68030-class
Colour monitor
2Mb RAM
40Mb hard disk
1.44Mb SuperDrive which reads IBM-compatible files and disks
mouse/GUI/microphone
£1606.50
(Includes Apple's education discount.)

Appendix II

What Arts Marketing Professionals Really Want:

Although personal computers are becoming more powerful and easier to use, in many cases they still expect the user to work in the way the hardware and software dictates rather than allowing the user to make the computer's operations conform to the way humans may wish to work. With that in mind, I decided to ask a number of marketing practitioners to provide a kind of *wish list* including all the functions and facilities that they thought were essential and should be provided by an *ideal* arts marketing computer system.

Marketing Consultant, Jonathan Hyams said, "Well, my ideal computer would hold a list of the interests of the entire UK population, write them personalized targeted letters, have direct access to their bank accounts, force them to enjoy the show, donate money and help out backstage, it would tell me how much to pay for an artist and make a guaranteed killing, it would tell me how to make a guaranteed killing without doing any work myself, it would greet the customer, serve at the bar and replace obstreperous staff!"

When I told him he couldn't have that just yet he said, "OK, I'll take the dream ticket.... It should: hold a database of potential customers, categorized as fully as possible including socio-demographic categorization; hold a database of actual customers, including a transactions audit trail, itemisable, directly updating my accounts system and requiring minimum training for box office staff (ie volunteers should be able to use it after a 5 minute explanation) and printing tickets instantly; run a mailing list effortlessly, fully selectable and with an easy mail merge function; hold a database of my research data, customizable and analyzable by any infinite number of correlations; hold a database of suppliers, customizable categories; run my accounts the way I want them to run (simple or complex); run my payroll; control my stock in all my operations; undertake rostering of staff; offer electronic office (ie wp/invoicing/ memos/filing) facilities such that I don't need to tie up resources in secretarial staff; produce simple leaflets and artwork to a usable quality; have artwork scanning facilities and, preferably facilities to scan text to ASCII; be able to communicate direct with other

organizations (fax, e-mail, telex) and even input to printers for typeset output or to newspapers with advertising copy and press releases; access national databases cheaply and efficiently; analyse performance against targets in any department; offer password control; provide formats for budgeting, business planning and marketing planning; hold local/regional/national media rate card data; offer relationships between all data; not require a DP manager and team to control it; correct any illiterate English; produce automatically my contracts with artists; ... do you want more?? Really, a minimum package will include relational database, wp, spreadsheet, accounts, graphics, dtp, comms and box office/sales. An ideal package will link the whole lot without the system grinding to a halt or a snail's pace."

Chris Travers of Cardiff Arts Marketing broke his wish list down into two categories; *Essentials* and more specific *CAM Requirements*. Essentials included:
- Good flexible user friendly word processor with lots of storage space, modest mailing list capacity and mail merge functions and batch processing ability.
- Good laser printer for letters, envelopes, labels
- Superior and very user friendly statistical analysis package for market research.

Additional *CAM* requirements included:
- Ability to design questionnaires
- Facility to deal with data entry of coded responses from questionnaires very quickly (ie input a stream of figures from each questionnaire not go through complex entries)
- The ability to cross tabulate data within a single research project and give quick answers on screen when interrogated on a particular point (eg What % of blue eyed Welsh speakers read the *Guardian*?)
- The ability to do this across multiple research projects divided into groups of related projects
- The ability to easily produce tables of figures, bar charts, pie charts, etc illustrating cross tabulations, audience compositions, etc.
- The ability to set up and analyse ad hoc *stand alone* research projects
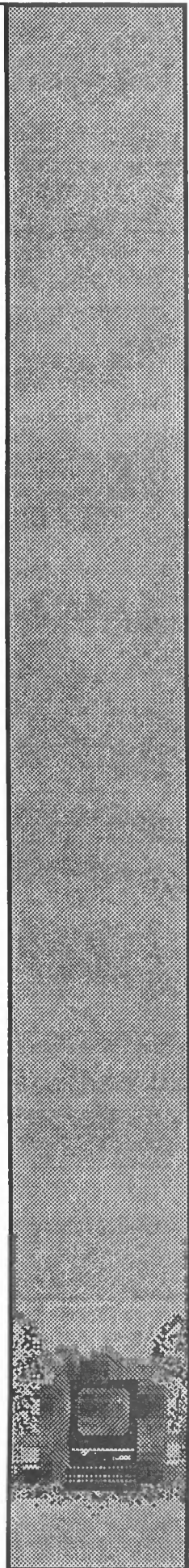
- The ability to easily integrate this statistical data and graphics into reports and documents
- Ability to print out one file, and, simultaneously analyse sales figures from different sources and keep running records of schemes (eg telesales)
- Ability to work with another easy to use DTP package for leaflets, fancy reports, etc.
- Ability and storage space to load up main mailing list from MicroVax computer (up to 40,000 fully segmented records) together with sophisticated sort and count options
- Spreadsheet package
- OHP monitor attachment for presentations

John Matthews, of McCann, Matthews Millman Associates, highlighted the need for a new kind of computerized box office system, preferably one with marketing considerations built in from the outset and not included as a bolt-on extra. He believes that there needs to be a system that combines efficient sales transactions with the collection of market intelligence, the holding of customer profiles and the creation, maintenance and updating of a customer database. Such a system should ideally provide:

- Overall sales for a period, broken down by performance, types of discount, types of payment and when the sale was made
- Instant monitoring of ticket yields and knowledge of how every customer found out about the production
- Analyses of how sales fluctuate according to the time of day, day of week and time of year
- Other detailed information about customers and transaction records to facilitate the tailoring of direct mail shots to a tightly targeted market followed up by an intensive telephone sales campaign

"Otherwise," John said, "I think my requirements of computers in marketing are fairly basic. They include word processing, database and spreadsheet, obviously, plus questionnaire analysis. It would be useful to develop a modelling system for venues/products that could be used to plan marketing campaigns. Such a model would

need to make assumptions about venues and grade productions on the basis of ease/difficulty in selling. Inputting data regarding seasonality, previous success/failure, rises in sales attributable to specific promotional activity (eg TV, radio, direct mail, etc). I wonder whether a computer could, in effect, make proposals for future, cost-effective campaigns?"
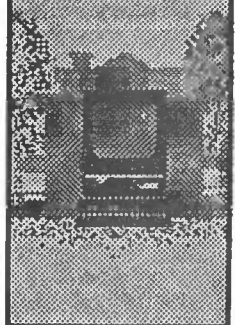
Appendix III

Box Office Systems:

BOCs
Box Office Systems
Space-Time Systems Ltd
73-75 Endell Street
London
WC2H 9AJ
071-836-9001
variable

PASS
Box Office Systems
Select Ticketing Systems Ltd
Weltech Centre, Ridgeway
Welwyn Garden City
Herts
AL7 2AA
0707-377771
£10,000 per unit

RITA
Box Office Systems
British Telecom
Merton House
84 Albion Street
Leeds LS1 6AG
05320423000
variable

Ticketmaster
Box Office Systems
Ticket Master
78 St Martin's Lane
London
WC2N 4AA
071-379-3295
variable
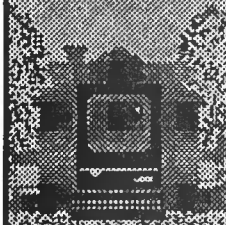
TABS
TLCS
10 Oak Court, Crystal Drive
Sandwell Business Park
Warley B66 1QG
021-552-5689
£11,680 for a 2-screen system

Synchro
Synchro House
Etruria Road
Basford
Stoke-on-Trent ST4 6JH
0782-711111
variable

HEBOS
IE Limited
Unit 33 Enterprise Centre
Bedford Street
Stoke-On-Trent ST1 4PZ
0782-281643
£8180 for a single-screen system

TOR
TOR Systems Ltd
86 Boughey Road
Stoke-on-Trent ST4 2DQ
0782-744755
variable
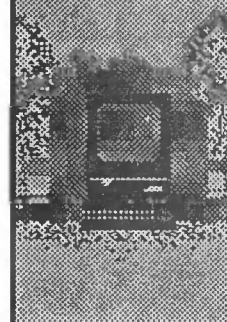
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Bulk Mailing Packages:

LabelmakerII
Bulk Mailing
Decision Technology
7 St Johns Road
East Molesey
Surrey
KT8 9JII
081-979-5533
£140

MailManager
Amethyst Business Computer Systems Ltd
5 Hayes End Road
Hayes
Middlesex UB4 8EQ
081-848-9784
£200

Mailworks
Bulk Mailing
Sensible Solutions Ltd
Lucas House
Southend Road
Woodford Green
Essex
IG8 8HJ
081-551-7275
£200

Super Labeller
Bulk Mailing
MASS Specialist Software Designers
Freepost (PCW3)
3 Dereham Road
Norwich
NR2 4BR
0603-630768
£39-79.99
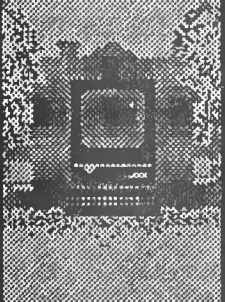
Database Software:

Dataease
Database
Sapphire Software
081-554-0582
£595

Dataflex
Database
Dataflex
071-729-4460
£575-1099

dBase IV
Database
Ashton-Tate
0628-33123
£595

FoxBase
Database
Raven Computers
0274-309386
£395
Omnis Quartz
Database
Blyth Software
0728-3011
£695

Paradox
Database
Borland International
0734-320022
£595
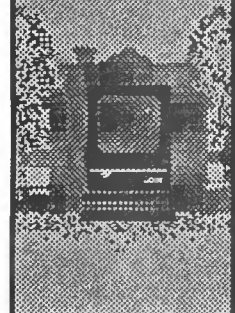
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rBase
Microsoft
0734-391123
£545

FileMakerPro
Frontline Distribution
Intec 1 Wade Road
Basingstoke RG24 0NE
0256-463344
£225

Forth Dimension/FileForce
ACI
0625-536178
4D £620/FF £295

SuperBase
Precision Software Ltd
6 Park Terrace
Worcester Park
Surrey KT4 7JZ
081-330-7166
£499

Market Research Software:

Market Manager
Marketing
Prosper Systems Ltd
Research House
Fraser Road
Perivale
Middlesex
UB6 7AQ
081-998-8717
£1500

QPS
Marketing
Market Research Software
70 High Street
Wallingford
Oxon
0491-33017
£1450

SaleMaker
Marketing
Market Solutions Ltd
Broadway House
Maidenhead
Berkshire
SI6 1JK
0628-32517
£995

Snap2
Marketing
Mercator Computer Systems
9 Elmdale Road
Clifton
Bristol
BS8 1SL
0272-293231
£695
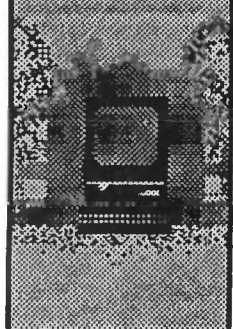
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SPSS
Marketing
SPSS UK Ltd
Mark House
9-11 Queens Road, HershamGreen
Walton-on-Thames
Surrey
KT12 5TU
0932-232313
£2345ish (Macintosh version cheaper)

DTP/Presentation Software:

PageMaker3.0/Persuasion
Presentation Software
Aldus Europe
031-336-1727
£695

Freelance Plus
Presentation Software
Lotus Development
0753-840281
£395

Harvard Graphics
Presentation Software
Software Publishing
0895-442658
£395

Ventura
Rank Xerox
Bridge House
Oxford Road
Uxbridge UB8 1HS
0895-51133
£695

Quark Xpress
Computers Unlimited
2 The Business Centre
Colindeep Lane
Colindale NW9 6DU
081-200-8282
£695

Spreadsheets:

Excel
Spreadsheet
Microsoft
0734-500741
£395

Lotus 1-2-3
Spreadsheet
Lotus Development
0753-840281
£395

Survey Analysis:

Alison Shakspeare
AMS Marketing Services
16 Clausentum Road
Winchester SO23 9QE
0962-62563

Please Note:
All prices quoted in this report are ex-VAT and were accurate as of
January, 1991. Prices do not neccessarily reflect available discounts or
market fluctuations.
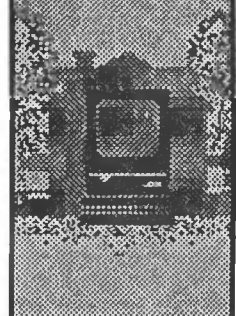
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OCR/OMR & Mapping:

Omtech FormPro OMR
Callhaven
The Old Police Station
Fairfield North
Kingston-upon-Thames
081-549-5612

Caere Typist OCR
Computers Unlimited
2 The Business Centre
Colindeep Lane
Colindale NW9 6DU
081-200-8282

AutoRoute
NextBase Ltd
Unit 18 Central Trading Estate
Staines
Middlesex TW18 4XE
0784-460077

MapGrafix
Admiral Computing Ltd
Admiral House
193-199 London Road
Camberly
Surrey GU15 3JT
0276-692269

CACI
59/62 High Holborn
London WC1V 6DX
071-404-0834
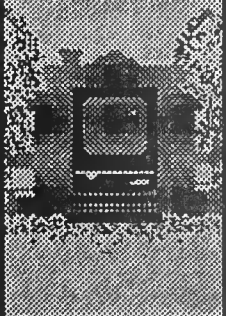
**Features & Functions To Demand When Choosing
A Computerised Box Office System:**

Ticket Sales:
- *Ticket issuing & tickets printed as sold*
- *Better quality tickets*
- *Easy refunds, exchanges & re-sales*
- *Quicker more efficient sales*
- *Easy agency & remote sales*
- *Easy search for performance/seat availability*
- *'Best Seats' auto-offer option*
- *Easy variation of seating lay-out*
- *Easy & quick search for reservations*
- *Credit card transactions without vouchers*
- *Simultaneous sales for the same performances*
- *Discounts & concessions*
- *Advance & group sales*

Marketing:
- *Name & address capture*
- *Payment method capture*
- *Events booked capture*
- *Subscription scheme processing*
- *Lead capture & account look-up*
- *Database management*
- *Duplicate record identification*
- *Mailing list segmentation*
- *Sponsorship data*
- *Flexible reporting facilities*

Reports:
- *Direct mail & mail merge provision*
- *Compute all associated charges*
- *Daily sales reports*
- *Ledger data & working trial balance*
- *Frequency of attendance analysis (various permutations)*
- *Attendance, income, programme flow-charts*
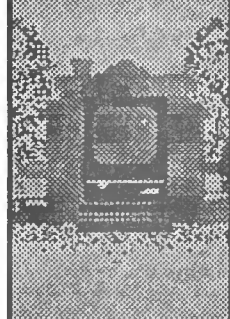
Appendix IV

Integration With Other Systems:
- *Links with other spreadsheets & databases*
- *Links with standard accounting packages*
- *Links with presentation/DTP packages*
- *Links with other PCs, networks, etc*
- *Printer compatibility*
- *Communications links*

Security:
- *Back-up system for data*
- *Back-up system for ticket sales*
- *Password protection & definable user-levels*
- *Surge suppressor/ clean uninterrupted power supply*
- *Virus protection*
- *General housekeeping utilities*

Support:
- *24-hour hot-line*
- *On-site call-out facilities*
- *Modem link for remote analysis*
- *Replacement system loan scheme*
- *Extended warranty*
- *Insurance*
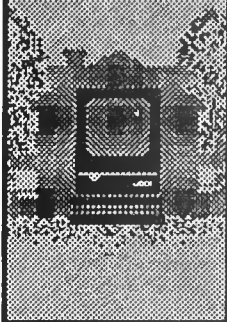
Glossary:

4GLs

Computer jargon for 4th Generation Languages. These are high level procedural programming languages or application generators which revolve around a data dictionary which defines the syntax and location of data elements in files. The main thing to remember is that when linked to programs which can be written in a couple of hours, 4GLs can produce complete powerful applications.

Access Time

The time you have to wait before a PC finds and displays a piece of information you have asked for, or, the amount of time required to transfer an item of data between the storage medium, eg floppy disc, hard disc, and the main computer memory. It is a measure of the speed of operation of the computer and usually relates to the type of processor used, eg 80285, 68030, etc, and can vary between seconds and several minutes depending on the type of operation. Searching or sorting a large database can take quite some time, even on a very fast PC.

Acoustic Coupler

Used with a modem, this is a device which is used to physically attach a computer to a telephone receiver.

ANSI

The American National Standards Institute is one of the computing industry's main organisations for deciding on the establishment and acceptance of standards such as SQL.

APPC

Advanced Program to Program Communications is an IBM protocol which defines interface for program-to-program communications and provides a sufficient platform to allow full use of SQL between programs running on different machines.

Application

Refers to software programs which make the computer do all those wonderful things you want them to do such as word processing, accounts, etc. Applications are also simply particular uses of computer software to implement specific desired tasks. This is usually achieved by writing application programs or more often, by customising general-purpose off the shelf software, eg databases.

Archiving

Archiving is essentially the process of periodically removing old or little used data from a database and transferring it to another medium for long-term storage.

ASCII

American Standard Code for Information Interchange, or basically, an agreed standardised code to symbolise common characters on the computer keyboard and communications instructions. Enables the relatively easy transfer of data from one system to another, including different systems.

Authoring

A process or environment for developing or assembling a variety of interactive multimedia applications. Authoring languages can be used to produce public access systems, training materials, presentations, etc.

BABT

British Approvals Board for Telecommunications which makes sure that equipment connected to the public telephone network is safe. Approved kit is marked with a green circle and it's illegal to connect up non-approved equipment...even if approved elsewhere in the world.

Back-Up

This is perhaps the most neglected, but most important, task relating to any computer activity. It involves taking an independent physical copy of a document, program or database and is intended to protect against failure of the original recording medium, eg floppy disc, hard disc, etc. Information on floppy or hard disks can be extremely vulnerable to damage and it is adviseable to make copies of data in case your original copy is corrupted. Most users never take back-ups until they have a massive disk failure and lose six months worth of work.

Batch Processing

This is a carry over from mainframe operation and is a technique in which actual computer processing does not begin until all the input, including data and/or programs, has been collected together. IBM compatibles running MS-DOS allows users to store sequences of commands into batch files.

Glossary:

Baud

A term used in computer communications used to measure the signalling rate on a data channel. Baud Rate indicates the speed at which data can be sent or received. A measure of the speed a communication (Comms) link can transfer computer information

Best So Far Version (BSFV)

This is sometimes used to describe a particular level of an incomplete database which contains all the data captured to date.

Bit

The smallest piece of information a computer can deal with. Comes from the term Binary Digit and is therefore either a 1 or 0.

Black Hole

In database terms, this is where information you once had, or knew how to get, goes when you can no longer access it. The black hole may contain a lot of information, but it's so disorganised, you can never hope to find anything lost there.

Boot

Computer slang short for bootstrap...or to start a program by loading the main set of instructions into the computer's short term memory.

Buffer

A storage area where data is put while it is waiting to be passed on to another part of the system. Useful when processing large mailing lists since if you have a big enough buffer, you can go on using your computer for other activities while the printer is working on your list.

Bugs

Slang for faults in the logic or programming of a program which can cause it to go wrong. The term is a carry over from the days of valve-driven mainframes when real 'bugs' used to be attracted by the heat and cause burn-outs.

Byte

A group of usually 8 bits in PCs operated as one unit. A group of bits are grouped together to form characters which represent ordinary letters, numbers, etc. PC which have more bits in each byte, eg 16 or 32, are potentially quicker and more powerful in their operation. Memory size, eg 512K, 640K, etc, is measured in KiloBytes (K) which represent 1024 bytes each. A MegaByte (Mb) equals 1 million bytes.

C/PM

An early operating system most commonly found on older 8-bit computers. Enjoyed a brief revival on the Amstrad PCW series.

CCITT

Committee Consultatif Internationale Telgraphique et Telephonique is a standards group of the world's telephone authorities. It creates standards for FAX, V and X series.

CD-ROM

This stands for Compact Disc Read-Only Memory and is a new and evolving method of mass information storage directly descended from the audio compact disc. The massive capacity of CD-ROMS could usher in developments which at the moment, could not even be guessed at. Particularly important in the storage of visual imagery.

CGA

Refers to the first colour graphics adaptor IBM made available on its PCs and the most basic standard for colour monitors.

Characters per Second (CPS)

The measure used to indicate the speed of a printer and usually represents the number of letters or characters that a printer can print per page per second. Usually over-estimated in adverts.

Chip

A tiny piece of silicon onto which circuts and transistors are etched. These make PCs work and there are a variety of different types of chips. Microprocessor chips, such as the Intel 80286/80386 or the Motorola 68000/68030 are part of the working heart of a PC and carry out a range of tasks, determine speed of operation, etc.

Classification Scheme

An important preliminary exercise in any database construction. Basically, it is a method of associating designated levels of importance with the information held by an organisation.

Glossary:

Compatibility

The ability of various parts of a computer system to work together. This can mean different hardware systems being able to use the same software or peripherals or more importantly, to be able to pass data outputs to and from each other. Today, most PCs are either IBM/MS-DOS compatible or Apple Macintosh compatible, eg top range Macintoshes can read and write IBM data and program disks and vice versa, while most of the useful industry standard applications such as Excel, WordPerfect, dBase compatibles, PageMaker, Word, etc are available in versions for both platforms and can easily exchange files between systems. Most software also provides standard formats for saving data, eg ASCII, Text, etc, which are universal and can be read accross a variety of machines. Other software now includes a selection of translation facilities for exchanging data from different formats, eg WordStar to Word, Excel to Lotus 1-2-3, etc. Compatibility is nolonger the issue it was ten years ago.

Component Media

The elements or different media used to form a multimedia platform.

Concurrent Access

A mode of accessing a database in which two or more users are able to perform operations within a given interval of time. Available via multi-user systems.

CPU

Central Processing Unit is the heart of any computer and includes the arithmetic unit, control unit and immediate access store. It does not include the backing store, peripherals or the main memory.

Cursor

This is that blinking point on the VDU which indicates where the next character will appear when you type from the keyboard. The shape and format of the cursor often varies on different machines and within different software applications.

Data

That grammatically confusing mass noun used throughout the business and computing world. Just treat the word as if it were 'information' and everything else falls into place. Raw information processed into useful information by the computer

Data Capture

This is the process of identifying, isolating and gathering data to be stored in a database.

Data Dictionary

This is a centralised repository of information describing the logical structure of a database such as categories of data, rules, data item formats, and so on. It is an important piece of documentation and can either be stored separately or integrated into the database itself.

Data Server

A sort of back-end facility which handles details of records and files for other programs and ensures their security and integrity, almost as part of the operating system.

Database

A kind of filing program for storing, sorting and retrieving information. A data base is simply a large organised collection of information which is available in a variety of forms when your need it. Databases are designed to handle information with a regular structure. In manual systems, this kind of information might be stored in files, in an address book, or in a card index. The main advantage of a computerised database is that it allows you to analyse the current state of your data and produce very selective reports. Everyone has a database...be it a posh leather Filo-Fax or a scrappy pile of Lion Brand paper tied up with bits of string...

Database Administrator

An important role in any major database project. the administrator is the person who is ultimately responsible for a database, particularly for defining the rules by which data is accesses and stored and is usually responsible for database integrity, security, performance and recovery.

Database Management System (DBMS)

This refers to a computer system which organises a database structure and provides access to information in it. This sort of software system usually consists of a database manager and a dialogue manager.

Database Manager

Not a person, but in this case, a software system facilitating the creation and maintenance of a database and the execution of computer programs using that database.

Glossary:

DATEL

BT's name for its various data services covering both the equipment and the type of line used.

DCE

Data Circuit-terminating Equipment...or computer-eeze for Modems.

De-Duplication

A form of input validation in which the input value is automatically compared with values already stored in the database to determine whether it is phonetically similar to any of those values.

Dedicated

Refers to a system or software application which is designed for just one specific job, eg Dedicated Marketing Software...

Desk Top Publishing

Producing type-set quality print and publications in house using a personal computer, specialised software and a laser printer. DTP was more or less invented by Apple Computer with their Macintosh, the LaserWriter PostScript printer and the introduction of Aldus PageMaker. While you can save money and time with DTP, it is still a relatively expensive business to set up initially and users do need considerable training to use it effectively.

Dialogue

This is an interactive system used in database construction to exchange messages and responses. Some of the user-interfaces available on newer computers can be extremely user-friendly utilising mice, windows, icons and pull-down menus. The idea is to create a process that is somewhat analogous to a conversation between two people.

Dialogue Manager

A software system facilitating the creation and maintenance of a database by a user through an interactive dialogue. These are often menu-driven systems or 'front-ends' to databases.

Disk

The main media for storing data and programs for PCs. Traditional floppy disks were the 5.25 inch variety, but this is gradually being replaced with the more robust 3.5 inch disk with greater storage capacity. Hard disks are bigger and more costly but can store considerably more information in a much more secure fashion. For most serious applications, particularly database mailing lists, market research, etc, a hard disk is a necessity and should be considered seriously for all arts computer installations.

DOS (Disc Operating System)

This is what makes computers work by providing an operating system which controls the flow of data to and from a disc. DOS will look after space allocation on the disc and execute simple commands for file management.

Dot Matrix

A printer technology whereby characters are formed on paper by a number of needles impacting through an inked ribbon. It is one of the cheapest and most robust printer technologies around and modern printers using 18 or 24 pins are capable of very high quality output.

Dumb Terminal

Like a computer with no brain, this is a device that can send and receive data but has limited or no facilities for storing or processing it.

EGA

Another IBM colour standard which not only emulates CGA colour standards but adds extra graphic modes. Stands for Enhanced Graphic Adaptor.

EISA

The alternative to IBM's Micro Channel Architecture and a proposed method of enhancing conventional ATs for use with more powerful CPUs.

Electronic Mail

Often referred to as E-Mail, this is a popular communications service for computer users where messages can be left in 'mailboxes' stored on a host system...usually a mainframe.

Glossary:

Emulator

In communications terminology, an emulator is a software/hardware set-up which makes one device mimic another, eg a personal computer may emulate an industry-standard intelligent terminal like the VT100.

Expert System

This definition can vary tremendously depending on context and who you are speaking to. Essentially, it is a software system programmed to emulate the activity of a human expert in interpreting specialised information within his or her field of expertise.

Field

This is a basic item area or section of a data base used to hold one of the pieces of information in a record. Like a box, it can hold information such as name, surname, artform, etc. Fields used specifically to distinguish one record from another are called Key Fields.

Field Length

This is the maximum amount of storage which may be allocated to a data item in a specified field. fields may be of fixed length where maximum storage is always allocated, or varying length where the amount of storage allocated is determined by the data item itself.

File

As in traditional paper systems, a File is a collection of related records grouped into, handled, and stored as a single unit.

Flat-File Database

A type of personal computer database that is analogous to a card index or rolodex system. All information is entered via one 'card'. Slightly more sophisticated than a List Manager and useful for creating stand alone applications.

Functional Requirements

Usually a planning-style document describing what a proposed application is intended to perform including descriptions of commonly used transactions, screen presentations and report layouts.

Gateway

Gateways provide a link between one large computer system and another allowing a user to enter the first computer in the normal manner and when desired, obtain information or services available on a second. Most mature videotex systems offer gateway services to online databases, travel ticket services, etc.

GEM

Digital Research's GUI which uses pictures or icons as well as menus and mice. An early PC attempt to create a Macintosh-like environement.

Graphic User Interface (GUI)

A major step towards making computers more consistent and intuitive. GUIs basically try to emulate objects we already know about like desk tops and files and provide users with a graphical way of interacting with their PC by using WIMPs, or windows, icons and pull-down menus (see WIMPS). First used effectively on the Apple Macintosh, GUIs actually have their roots in early research done by Xerox at PARC in California in the late 70s.

Hard Disc

A mass storage media consisting primarily of a spinning metal platter on which data is stored and a moving read-write head rather like the tone arm of a stereo record player. The platter is laid out in concentric circles, like an English dart board, and each track is divided radially into a number of sectors like a pie. One sector holds 512 bytes of data, or one half kilobyte.

Hardware

The actual physical pieces of equipment that make up the computer system, eg keyboard, screen, disk drives, printers, etc

Hayes

Similar to the IBM standard in PCs, these protocols set a de facto standard of commands for intelligent modems often used by software packages.

Hierarchical Database

Another carry-over from mainframe usage, this type of database's physical organisation consists of a single master file and one or more linked files which are subordinate to it. The master file is often referred to as the parent file and the subordinate files as child files. Data in child files can only be accessed by first locating a record in the master file. (See Relational Databases)

Glossary:

Housekeeping

Most computer programs are provided with housekeeping routines which help you tidy up after working with the computer. They normally list files that you may have on disk, enable you to copy and delete files, investigate storage space, and generally manage.

HyperCard

HyperCard is a multimedia authoring system incorporating elements of hypertext and hypermedia. It has been called everything from informational meccano to Lego for hackers. Developed by Bill Atkinson, HyperCard provides the average user with much of the power of object oriented programming via nearly plain-English style commands. HyperCard also provides an ideal media control architecture for driving other devices such as CD-ROM.

HyperMedia

Information presented in such a way that various bits of it are related to each other in a non-linear manner allowing for almost infinite cross-referencing.

Icon

An image that graphically represents an object, a concept or a message usually used in a computer's user-friendly interface.

IEEE

Institute of Electrical and Electronic Engineers, or yet another American standard-setting body. Also occasionally used to refer to parallel interfaces.

Image Processing

Software-based enhancement and manipulation of digitised images, such as adding or changing colour, cutting and pasting other images, adding graphics, adjusting contrast, etc.

Index

A database index is a component of the physical organisation of a file or database which indicates an ordering of its records according to data values in specified fields in each record. An index is usually organised to permit rapid searching on its associated field.

Ink Jet

Another type of printer that forms characters by squirting jets of ink through nozzles onto a piece of paper. Very quiet, extremely high quality, but often rather on the slow side.

Input

Information given to a computer via a keyboard, mouse, touch-screen, light-pen, Optical Character Reader, scanner, etc

Input Validation

A control technique, like de-duplication, used to detect input data which is inaccurate, incomplete or unreasonable.

Interface

The link between a computer and its peripherals or user. How the PC interacts with other equipment such as modems, printers, etc or how the PC interacts with its human user.

IT (Information Technology)

Broadly includes all the techniques and devices used to store and manipulate information such as in computing, microelectronics and telecommunications.

Kermit

Not the Jim Henson frog but an error correction protocol widely installed on a large number of mainframes, minis and personal computers.

Key Field

A specially designated field (or fields) located in the same position in each record of a file which is used to identify a record and define its order with respect to the rest of the records. These fields are used for detailed searching and sorting routines.

Keyboard

The standard means of inputting data into personal computers. Most use the traditional typewriter-style QWERTY layout with additional numerical and function keys.

LAN (Local Area Network)

This is a network of computer systems in which all systems are located on a single site and linked by dedicated cables rather than via telecommunications lines.

Laser Printers

Also called page printers, these assemble a whole page of text and graphics in memory at once before printing. Not as high-tech as the name implies, these printers have more in common with photocopiers then with the star wars defense initiative.

Glossary:

LaserDisc Player

An optical analogue storage medium capable of storing up to 33 minutes of audio and video. Each track holds one frame of video and is individually accessible via a computer interface.

List Manager

A low-end of the market database system for personal computers essentially operating like a spreadsheet with information set out in rows and columns. These days they're mainly found in integrated software packages and although quite basic, can often be more than adequate for a multitude of applications.

Logical Structure

Another important aspect of database planning to provide a collection of rules defining what data may be stored in a specified database. This logical structure may be thought of as a template for the database and is often expressed as a diagram.

Macro

A software facility frequently found in communications programs which permits the preparation and sending of commonly used strings of information, particularly passwords and routing instructions.

Mail Merge

The process of producing a number of printed pages each containing a mix of fixed text and variable information. Most commonly used to produce 'personalised' form letters like the ones you get from Readers Digest.

Main Frame

An extremely large high capability computer generally used as the principal processor for a wide number of users. Mainframes are capable of massive data storage and in many cases, extremely fast processing power. However, much of the mainframe technology that has been in use for some time lags behind advances in the personal computer range.

Media Failure

Not a comment by Rees-Mogg on the state of television programming, but a malfunction of the physical storage medium, such as floppy discs, hard discs, tape streamers, etc, usually resulting in a catastrophic loss of data.

Mini Computer

Halfway between a micro computer and a mainframe although top-end PCs and workstations are gradually blurring the distinction in terms of storage and raw power.

MINITEL

The highly successful French videotex system that has revolutionised communications. Minitel has over 6000 services and is used by 4 to 5 million people in a country of 54 million. Minitel is available in the USA on-line and will be particularly important to the UK in 1992.

Modem

Computer jargon for 'modulator-demodulator...or the bit of kit that you connect your phone and computer up to to make it go on-line.

Mouse

A hand-operated pointing device used with computers, in addition to the keyboard, for moving the cursor around the screen and entering menu or other choices by clicking a button.

MS-DOS

Stands for Microsoft Disc Operating System and developed by Microsoft for the IBM PC and compatibles. Often called 'mess-dos' because of its rather unfriendly prompt and user interface, it is one of the major PC standards.

Multi-File Database

Often marketed in the personal computer sphere as Relational Databases, these add to the facilities of a Flat File Database the ability for one file to draw information from a related file and also to write information to another file. These allow basic information to be entered once only with the database itself taking care of the rest.

Multi-layer Graphics

Using the analogy of images on plastic transparencies, a background layer and a foreground character animation can be created separately, as the background is static it need not be animated. The foreground animation can be layered on to the static background. Hypermedia exploits the potenial of multi-layered information which can be comprised of text, sound, graphics, animation, video, phots, etc.

Glossary:

Multi-Tasking

The ability to have a number of program applications loaded and running in a computer at one time. One of the best features of UNIX systems.

Multi-User

A computer system or application that can be used by more than one person at the same time.

MultiMedia

The convergence and inter-mingling of a variety of technologies such as computers, video, CD-ROM, sound, graphics, animation, etc. Many applications make use of hyper-text or hyper-media software such as HyperCard which allows an amazing amount of freedom in developing applications and linking all the various elements mentioned. Interesting hyper or multimedia applications for the arts can be seen in the Glasgow On-Line project, the Design Museum and a new application being developed for the National Gallery.

Network

A means of connecting computers together so that they can share hardware such as printers and disk drives. Networks also allow a number of users to access the same files.

OS/2

IBM's chose replacement for the MS-DOS "standard" designed for 80286 and 80386-based PC allowing for multi-tasking. Hasn't really taken off yet.

OSI

Or Open Systems Interconnect, is a structure for computer networks developed by the International Standards Organisation (yet another one). OSI is designed to promote compatibility between networks.

Output

Information sent out by the computer to any one of a number of devices such as a screen, disk, printer, etc

Packet Switching

Referring to computer communication, this is a common method of data transmission across a network which involves the inclusion of data segments in 'packets'. Each one has a destination address which is then used to route the 'packets' independently across the network via the least congested routes.

PAD

Packet assembly/disassembly device. Basically it permits ordinary terminals or PCs to connect to packet switch services by providing necessary addressing, headers, protocol conversion, etc.

Password

A unique string of characters that a program, computer operator or user must supply to meet security requirements before gaining access to system facilities or data. Password Protection is the method used to restrict access to system facilities or data to a limited group of users.

PC

Generically, this usually stands for Personal Computer, which should include all micro computers such as the IBM PC, the Apple Macintosh, the Commodore Amiga, Atari ST, etc. However, in many publications, PC may only refer to IBM or IBM-compatible computers.

PostScript

The leading page-description language developed by Adobe Systems. Page Description Languages or PDLs, are powerful printer control languages used internally by many DTP systems. A PDL such as PostScript provides the package running on a personal computer with a powerful and device-independent way of describing the page it wants output to the printer. Any DTP program capable of describing a page in PostScript should be able to output it on any PostScript compatible printer or typesetting machine without any bother.

Protocol

An agreement of set of conventions governing the exchange of information.

Query Language

A query language, which as one might guess, is used to state a query, may be a specialised form of command language or may have another form such as a graphical pointing language. (See SQL)

RAM

Not an astrological sign but rather Random Access Memory. This represents the working space a computer uses when it is performing tasks. RAM is a short-term memory and is used to store and manipulate both commands and data.

Glossary:

Record

Records are simply collections of related data fields treated as unit. For example, an artist's record might consist of a collection of fields describing attributes of that person's work, personal details, etc.

Recovery System

Like a backup system, this is actually the software system which is capable (in most instances) of restoring a database to former, valid state after loss or corruption of data has occurred. Unfortunately, such recovery systems rely entirely on independent physical copies of data from backup copies of the database to be reconstructed. If you don't have any...you're out of luck.

Relational Database

Often confused in the personal computer world with Multi-File Databases, this is actually a database which obeys certain principles, including the radical separation of data content and logical organisation from the way it's physically held. These allow for very sophisticated links or 'relationships' between files specified by the use of data values which appear in two or more files.

ROM

The yang to RAM's yin, Read Only Memory is part of the computer's internal memory store which has specific instructions indelibly etched onto it, eg the operating system instructions are carried in ROM.

RS232C

A 'standard' which as a lot of variable, defined by the IEEE and widely used to connect computers to printers, plotters and modems. Can be found in a 9-pin or 25-pin D-shaped connector.

SAA

Systems Application Architecture is an all-embracing set of standards emanating from, you guessed it, IBM, which has set out to define the future direction of the company's products and promises greater compatibility across the range...whatever that turns out to be. SQL will undoubtedly be a part of SAA.

Scanner

A device for converting photographs or other artwork on paper into a machine-readable form. Current scanners used in DTP can produce reasonable halftone images from photos but are better at dealing with images or line drawings. Scanners can now be used with OCR, or Optical Character Reading software which allows document text to be scanned into the computer and then manipulated and edited within a standard word processor. Saves a lot of typing.

Search

Just as you would need to open a filing cabinet and look through folders and files, searching a database essentially tells the computer to go off and examine designated files to locate one or more records having a given property.

Sequential File

This is a method often used by arts organisations to organise lists within word processing packages. The disadvantage is that record may only be accessed by reading each record in turn starting from the beginning of the file allowing no provision for detailed search and sort routines.

Server

Usually refers to a computer which provides a service to other computers on a network. Also referred to as a 'host'.

Sort

This is the process where the computer arranges files according to keys which are used as the basis for determining the sequence of records.

Spooling

This is a feature that provides the ability to store all fetched information in a local memory buffer while accessing a database form which it may be recalled for later examination or dumped to disc or printer. In normal PC use, it means you can carry on, say working on a document, while it, or something else is printing out.

SQL

SQL (sometimes pronounced 'sequel') is more computer jargon for Structured Query Language. It is an industry standard query language by which applications communicate with databases in the mini and mainframe computer worlds. It is becoming 'the' language for the manipulation of relational databases, and being sufficiently powerful to require an ANSI standard, it's far too complex to describe fully in a small paragraph.

Glossary:

Storage Structure

The method of laying out data in a physical database which allows efficient searching for names and facts.

Teletext

The commercial use of vertical blanking interval (the unused lines) in broadcast television to transmit magazines of text information, eg BBC's CEEFAX and IBA's ORACLE. Particularly important with recent developments in data broadcasting.

Transaction

In database terms, this is a sequence of updates which must be performed as a unit. In other words, all updates must be performed or none of them, in which case the database reverts to its state before the transaction was started.

UNIX

A multi-user, multi-tasking operating system developed by Bell Laboratories.

User-Friendly

This is a term thrown around the computer industry like car keys at a Tunbridge Wells dinner party. What it usually means is, 'This computer system is relatively easy to use by someone who knows how to use a computer'.

VAX

Trade name of a super-mini family of computers made by DEC which often uses VMS or UNIX operating systems.

VDU (Visual Display Unit)

This is the bit of a personal computer that looks like a TV. In general, VDU refers to a device having a keyboard and screen for the display of data.

VGA

The latest and top-end of IBM's graphic standards which is compatible with earleir CGA and EGA standards but provides a large list of possible combinations of screen resolution and colour palettes. Stands for Video Graphic Array.

Videotex

Originally, this specified technology allowing large numbers of users to access data easily on terminals based on modified TV sets. Information is presented in 'page' format rather than on a scrolling screen and the user issues all commands on a numbers-only keypad. eg PRESTEL.

WIBLI

A facetious acronym for 'Wouldn't it be lovely if...' Refers to what is often said when nobody has any real clear idea of how the resources involved in doing it would be justified by the result.

WIMP

Computer jargon for the powerful user-friendly interface provided on advanced personal computers such as the Apple Macintosh. Depending on whom you ask, it basically means "Windows, Icons, Mice and Pull-Down Menus.

Windows

Microsoft's GUI operating environment which allows the screen to be divided into a number of different areas, each of which may contain a different program. It tends to copy the Macintosh approach (from whom it is licensed) and provides mouse control of icons and menus.

WORM

Otherwise known as Write Once Read Many. An optical mass storage medium which uses the same technology as CD with storage capabilities of 400 to 1000Mb.

WYSIWYG

Computer jargon for "What You See Is What You Get". Usually used when describing word processors or some DTP and graphics packages. Often a heavily exaggerated claim unless a GUI is included.