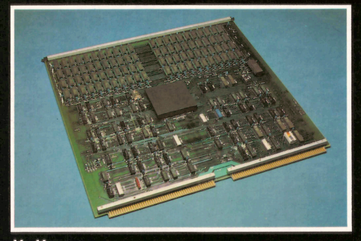


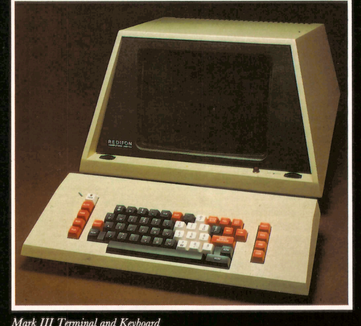
Mos Memory

Redifon announce New Data Entry Systems

Redifon Computers, announces the release of two new hardware and two new software products in the R300/R400 series of advanced data entry systems.

The new R300/70 and R400/70 hardware products with the R371 ADE 1. and R471 ADE 2. software products provide 25-60% more throughput performance for about 5% more cost than previous R-range products. Both the R300/70 and the R400/70 use the new Redifon-designed R4000A 16 bit 800 nanosecond processor and the new VM II virtual machines architecture, optimised for advanced data entry.

The R300/70 supports 32 local or remote CRT terminals, up to 33 printers, up to 33MB of disk storage, up to 4 x 45ips magnetic tapes together with paper tape, punched cards and OMR options. Additionally, the R400/70 supports up to 48 CRT terminals, up to 49 printers, and up to 66MB of disk storage. Extensive data communications facilities are released on both systems including IBM 2780/3780, HASP-RJE, ICL 7020, ICL 7503, Burroughs TD 830, TC 3500 and Univac 1004.



Mark III Terminal and Keyboard

The VM II software provided in the R371 ADE 1. and R471 ADE 2. software products supports up to 8MB of virtual storage, multi-user, multi-access shared logic facilities, full re-entrancy, dynamic resource allocation and an extensive range of utilities. A COBOL-like high-level programming language is also supported.

"The R300/70 and R400/70 set new price/performance standards in the Data Entry market, reflecting Redifon's continuing product development for a discerning, productivity-orientated market place," said Michael J. Aldrich, Managing Director.

The R300/70, R400/70 and their associated software products are compatible with existing R-range data entry systems.

"A great deal of attention has been paid to dependability in the new products. The R4000A features MOS memory with sophisticated error detection and correction, full battery back-up and, in conjunction with VM II, power fail detection and graceful shut-down," added Aldrich.

System prices start around £30,000. The new systems will be manufactured in Peacehaven and Crawley, Sussex and first shipments are scheduled for April 1980.

multi-function capability of the R800/70 will open completely new markets for integrated systems."

A great deal of attention has been paid to dependability in the new products. The R4000A features MOS memory with sophisticated error detection and correction, full battery back-up and, in conjunction with VM II, power fail detection and graceful shut-down. The R800/70 is fully compatible with R830 and R850 systems and is field up-gradeable to the new R1800/50.

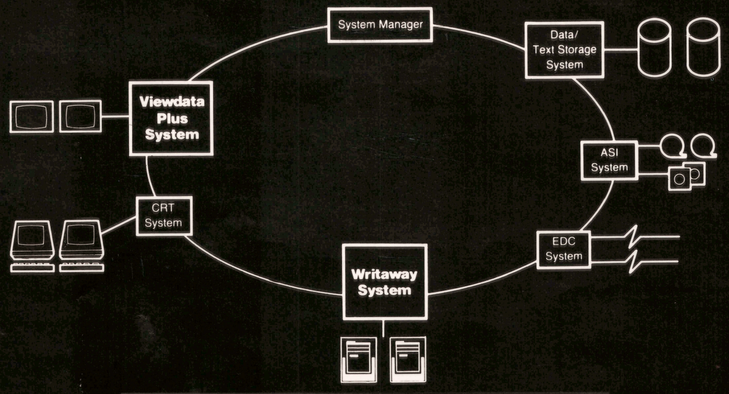
System prices start around £40,000. The new systems will be manufactured in Peacehaven and Crawley, Sussex and first shipments are scheduled for April 1980.

Technical Brief

R300/70, 400/70, 800/70 Hardware

	R300/70	R400/70	R800/70
Processor	R4000A	R4000A	R4000A
Cycle — 16 bits	800ns	800 ns	800 ns
Memory Type (MOS ECC)	16K RAM	16K RAM	16K RAM
Memory Capacity	96KB	128KB	128KB
CRT Support	32	48	24
Printer Support (Devices) up to:	33	49	25
Disk Storage up to:	33MB	66MB	264MB
Magnetic Tape Drives (45ips) up to:	4	4	4
Paper Tape (Devices)	1	1	1
Punched Card (Devices)	1	1	1
OMR (Devices)	1	1	N/A
OCR Wands	N/A	N/A	24
Viewdata Ports	N/A	N/A	8
Writaway Support	N/A	N/A	8

Systems Overview

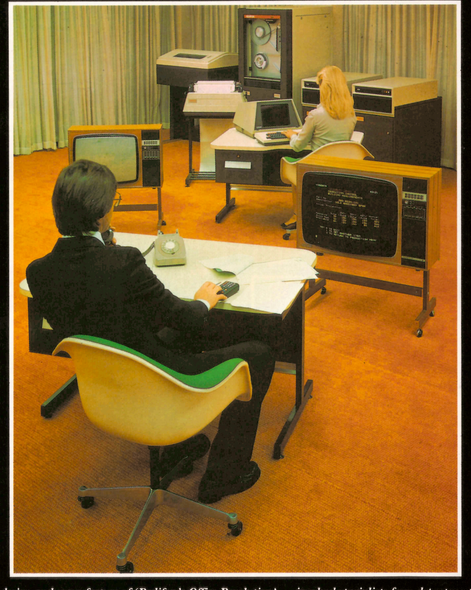


Pictured seated l to r are Roger Newman — Technical Director, Norman Watling — Manufacturing Director and Michael Aldrich — Managing Director answering questions raised by the press who recently attended a Press Conference at Quaglino's Hotel, London in connection with the release of Redifon Computers' new revolutionary R1800/50 integrated office system.

The integrated office system embodies Viewdata Plus, a real-time interactive full colour intelligent television set, real-time hand-print data processing, file update and interrogation, as well as multi-function visual display terminals and associated peripherals.

This is the first system in the world to incorporate all of these unique devices. With its associated people orientated software, the R1800/50 integrated office system can enhance productivity within an organisation and improve relationships and communications outside an organisation.

Redifon Computers announces the world's most advanced Office Information Handling System



The design and manufacture of 'Redifon's Office Revolution' — involved specialists from departments in Marketing, Engineering and Manufacturing.

Five major technologies, numerous minor technologies and three important technological innovations were integrated into one easy to use system.

R-range

Viewdata Plus

Handwritten Input

**Prestel is a registered Post Office trademark*

Redifon Computers has announced its R1800 range of advanced information handling office systems. The first model released, the R1800/50, is a mid-range system, featuring five major technologies in one integrated and easy to use system.

Redifon's office system differs considerably from all previous conceptions of future office systems in that it addresses both the office function and the office objective. For the first time in the history of the computer industry a system has been released with the goal of improving communications both within an enterprise and between an enterprise and its clients, customers, agents, distributors and outlets.

For ten years, Redifon Computers has specialised in terminal-driven computer systems with friendly human interfaces. In the past the terminals were visual display units or CRT's. With the R1800/50, intelligent colour televisions and hand-print terminals have been added to Redifon's capability.

The R1800/50 is a multi-function, multi-user, multi-access system. Major functions include data entry, data processing, hand-print processing, distributed processing, data communications and word processing.

The impact of the system is revolutionary. It will have some effect on the trading position of every enterprise. The implementation of the intelligent colour television sub-system uses a much-enhanced Prestel* interface to provide Viewdata Plus — real-time Viewdata, with file up-date, real-time computation, multi-level access security and advanced data management. Viewdata Plus transforms the Viewdata concept into a highly practical cost-effective information and action system. The capability of this sub-system is truly stunning. Up to 64 concurrent Viewdata operations are permitted.

Hand-print terminals provide real-time hand-print processing with hard copy and open totally new application areas. Whenever something is written down it can be simultaneously captured and processed — in the office, stores or factory. It is simple to use with minimum training required. Pre-requisites are a ballpoint pen or a pencil. Up to 32 **WRITAWAY** hand-print terminals are supported.

The CRT system controls up to 32 visual display units using 480 or 1920 character screens with a number of keyboard choices. Printers may be attached to any CRT.

The R1800/50 consists essentially of a micro-coded processor, with up to 5MB of MOS Memory, connected to other micro-processors. There are seven discrete modules to the system — System Manager, Data/Text Storage System, Archiving/Security/Interface System, External Data Communications System, WRITAWAY System, CRT System and Viewdata System. The five technologies used are computer, television, image, telecommunications and human interface software.

Within an enterprise the system can be used for a multitude of information handling and communications applications. External to the enterprise it can put customers and others who interface with the enterprise on-line — speeding communications, improving understandings and increasing profits.

The R1800/50 is totally compatible with the newly-announced R800/70. The R800/70 can be field up-graded to R1800/50, and the R800/70 shares most of the advanced features of the R1800/50, including Viewdata Plus and WRITAWAY.

In 1970, Redifon Computers entered the computer industry with a new and, at that time, novel product — key-to-disk. Redifon Computers is one of the few pioneers of that type of product to have the same corporate structure as in 1970, to have grown consistently throughout the 1970's and to have developed advanced products for the 1980's.

The R1800 Series is British-designed, British-made and establishes Redifon Computers as a world leader in advanced office systems. The R1800/50 is the first of a stream of R1800 Series product announcements that will be made over the next 12 months.

The R1800 Series, including the intelligent colour televisions, will be sold, serviced and supported by Redifon Computers. Training and documentation will be to the established standards. The R1801 VM III software is totally compatible with R800 VM II software.

The Oxford Dictionary defines "revolution" as 'complete change, turning upside down, great reversal of conditions esp. forcible substitution by subjects of new ruler or polity for the old'.

Redifon's Office Revolution is of some moment because it focuses, for the first time, on the 'within' and 'without' communication problems in human organisations and offers a solution that consists of an integration of disparate advanced technologies. Up to now, computer-based systems have been used to improve the 'within' organisation communications. A complete change has thus been brought about.

Redifon's definition of an "office" differs markedly from prior definitions. The focus on the objective of an office rather than on the function of an office, will cause consternation among the 'experts', but will bring relief and understanding from general management who are struggling to better utilise their assets — human and otherwise. Human conception of the 'office' has been turned upside down.

Redifon's Office Revolution impacts companies' trading position because it addresses the 'without' problem as well as the 'within' problem. Those who implement it will derive substantial and perhaps, permanent competitive advantage. At the same time they will reduce overhead costs. Those who do not implement it, will be at a disadvantage. Competitive conditions will be reversed. The substitution of one supplier for another will be forced by customers demanding better service.

Thus Redifon's Office Revolution is truly revolutionary. Let us look at the potential impact of this revolution.

The nature of doing business will change . . . The impact will be felt on all direct sales activities where the salesman's time is today split generally 70% communication, administration and travelling to 30% selling. Improved communication will cut administrative paperwork, telephone bills and much travelling. The impact will be felt in every marketing activity because much of the problem of communicating with the customer has been eliminated. Those companies that do not change face decline. The business of marketing has been changed.

New business will mushroom. A whole new business will be created and others irrevocably changed. The new business is called the "Value Added Information Business" or "Information Service Broker".

The "Information Service Broker" will install a Redifon Viewdata Plus system with intelligent colour televisions located in his clients' premises. He will provide a directory of information and action services. For example, local shops would 'advertise' special offers on his system. The Broker would take the order, pass it on to the shop, arrange delivery and even collect money. He would make a profit on the value of transactions handled, paid by the suppliers of goods.

The various 'service' businesses, particularly travel agents, estate agents and insurance brokers will be immediately impacted. Real-time transaction completion and improved communication will change the nature of the business.

The 'directories' business will change. What point "Yellow Pages" if one could go into a computer using Alphabetic Search to find a telephone number and then automatically dial it? And then 'talk' to a computer which would dispense detailed information and offer action.

The nature of telephone usage will change. Clarification telephone calls will be greatly reduced. Connection will improve. At this time, 28-30% of telephone calls made in the UK do not reach the person being called — for many reasons. But time and money is being wasted. Leaving a message in the computer is an obvious application, but resolving most or all of the problem with the computer is the best solution. And that is feasible.

The length of telephone calls will drop. The average telephone call in the UK is 1½-2 minutes. Half of the time on a business call is taken up with salutation and social discourse — essential in some businesses. With Viewdata Plus, the information and transaction inter-change can be completed quickly and effectively. Average telephone call length will drop. Trying to say "Good-bye" will no longer be a problem.

The nature of business will change here too. The need for human social inter-change will be recognised as not being essential for every contact between supplier/customer or internally within an organisation, but as an essential and planned part of any human activity scheme.

The supplier will visit the customer to enthuse and motivate the customer not to tidy up the problems, most of which have been created by poor communications.

The impact on education and training will be substantial.

Programmed learning with total inter-active dialogue is simple. The computer can be used to score, pace and guide the student. Even to amuse the student in any defined set of circumstances is feasible.

The immediacy of the medium of Viewdata Plus will change the approach to promotional campaigns. One day promotional campaigns will become common. The cost of mounting campaigns will in many cases be trivial compared with older methods. "Special Offers" as part of the Viewdata Plus salutation page will be common.

Entertainment and promotional games will be popular. While the customer is playing games on your system, he can be learning about your products and services. A new sub-culture will develop of incentives to make the customer hook into one system rather than another. Perhaps we will see the intelligent TV equivalent of the cross-word or chess-game.

The opportunities to succeed in the use of these new systems are limited only by the imagination of the people using them. The risks are very small, the rewards are potentially enormous.

Timing is of vital importance. Redifon is the first supplier with this type of system. Manufacturing capacity over the next 12 months is substantial but finite. Other manufacturers must follow but could take up to 18 months to catch up with Redifon's current position. Above all, Redifon has a close involvement with the development of the television through its associate manufacturing company, Rediffusion Consumer Electronics. The development of the television is key to the development of information handling systems.

The number of computer companies in the world who make Viewdata televisions is extremely small.

During 1981 the price of the Viewdata sets will start to fall as production moves through the 100,000 per annum level. The UK manufacturing capability is around two million sets per annum.

The 'within' problem — communications within the organisation — is similarly susceptible to improvement and solution by Redifon's Office Revolution.

The threats within the organisation are easy to identify — rising overheads are swamping profits; business is becoming more difficult to manage because organising teamwork needs excellent communication; getting new business is getting harder, prices are under pressure, costs are rising, communicating with the customer is more complex.

The multi-function capability of Redifon's Office System is such that you can make a start on the most serious problems first, and then integrate and resolve the others later. Because of the extensive use of "non-threatening" and socially acceptable devices, you are not going to trigger industrial relations problems by introducing new technology, provided you implement with consultation and good planning. The human interface software is especially appropriate for people unfamiliar with computer technology but capable of understanding how to use domestic products.

There are many 'within' applications areas. They are all communication orientated — raw data, processed data, raw text, processed text, communication messages of any kind, need capture, entry processing, distribution and sometimes storage. Thus data entry, distributed processing, word processing, data processing, hand-print processing, OCR processing and numerous other techniques are within the capabilities of the system.

The overall impact is to help to achieve the objective of supporting organisational teamwork by creating better shared understanding through improvement to the internal communications flow. Productivity increases and reduction in overhead costs will be experienced as a side benefit.

Redifon's Office Revolution

ANALYSIS OF IMPACT

Redifon's Office

Definition:	An organisation of people.
Function:	Provides a service of communication and recording — and controls assets.
Objective:	To support teamwork by creating shared understandings *both within* and *without* the enterprise — which enables assets to be better utilised.

Redifon's Office System

Viewdata Plus	Image Processing
Data Entry	Distributed Processing
Word Processing	Data Processing

Redifon announce New DDP System

Battery Back-up Unit

Redifon Computers, the second largest British-owned computer manufacturer, announces the release of the R800/70 Distributed Data Processing hardware system and the R871 DDP IV software system. The R800/70 is a new model in the successful R800 Series of multi-function DDP products.

The R800/70/R871 combination provide 25-60% more throughput performance for about 5% more cost than previous R-range DDP products. The R800/70 uses the new Redifon designed R4000A processor and the new VM II software architecture optimised for DDP.

The R800/70 supports 24 local or remote CRT micro-terminals, up to 25 printers, up to 264MB of disk storage, up to 4 x 45ips magnetic tape drives and a number of optional peripherals including OCR Wands. Extensive data communications facilities are released for both batch and inter-active protocols including IBM 2780/3780, HASP-RJE, IBM 3270, ICL 7020, ICL 7503, ICL 7502/10, Burroughs TC 3500, Burroughs TD 830 and Univac 1004. In addition, the R800/70 supports 8 Viewdata Intelligent Colour Television ports and up to 8 **WRITAWAY** hand-print terminals.

The VM II software provided in the R871 DDP IV software product supports:

- Viewdata Plus
- WRITAWAY Hand-print Terminals
- Advanced Data Entry
- Real-time Transaction Processing
- Word Processing
- Data Processing

Up to 8MB of virtual storage, sophisticated data management with multiple indices, 24 concurrent job executions, multi-user, multi-access shared logic facilities, full re-entrancy, dynamic resource allocation, multi-level security audit trail and an extensive range of utilities are supported. A COBOL-like high-level programming language is also supported.

"The R800/70 capitalises on the success and experience with the R800 Series and establishes new price/performance standards," said Michael J. Aldrich, Managing Director. "The